Lung Cancer Europe

POSITION PAPER

Lung Cancer Europe

Disparities and challenges in access to lung cancer diagnostics and treatment across Europe

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Lung Cancer Europe

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Disparities and challenges in access to lung cancer diagnostics and treatment across Europe

Lung Cancer Europe (LuCE) is the voice of people affected by lung cancer, striving to make lung cancer an EU health priority and supporting its members to be effective and sustainable organisations. LuCE provides a European platform for already existing lung cancer patient advocacy groups and supports the establishment of national lung cancer patient groups in different European countries where such groups do not yet exist.

One of our main goals is to generate evidence on the main challenges faced by the lung cancer community; these challenges include barriers and inequalities in access to healthcare resources and services across Europe.

This **2020 LuCE Position Paper covers data regarding access to lung cancer treatment and diagnosis,** in order to raise awareness about access inequities among patients in European countries.

Data collection was undertaken using two online surveys (March until September 2019); one conducted with healthcare professionals/researchers (one or two respondents per country[1]) and the other conducted with pharmaceutical industry representatives (one respondent per company). Data was validated by a final consultation with patient advocates (LuCE members), lung cancer experts and pharmaceutical companies in November 2019. Supplementary desk research provided additional evidence, which strengthened our position statements.

We encourage you to work with us to ensure prompt patient access to innovative medicines, biomarker testing and healthcare services; and reduce disparities across Europe. All of us want a Europe where all people impacted by lung cancer have access to the best diagnostic and treatment pathway irrespective of their geographical or socio-economic situation. Will you join us?

[1] Check their names and affiliations at “Acknowledgments”

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Access and disparities in Europe. What is the current situation?

Time is crucial in lung cancer ***but delays in patient access to diagnostics occur across Europe, with delay varying for each country.***

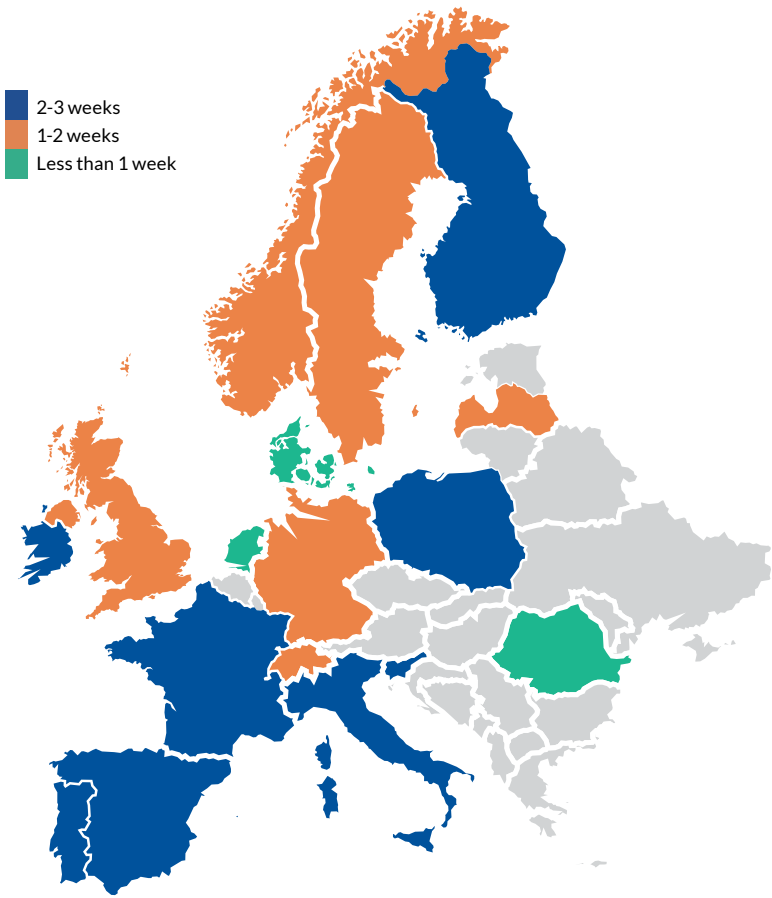
Fifty per cent of the experts consulted for this paper, have specifically indicated that long wait-times in the lung cancer diagnostic pathway is a top challenge in their countries.

Recent research from Lung Cancer Europe showed that 53% of patients with lung cancer see their primary care doctor three or more times before being referred to a specialist[2]. One of the main challenges in the diagnostic pathway, therefore, is to speed up the referral time from primary care to specialist care.

In addition, delays also happen in a hospital setting. According to our survey conducted for this paper, it takes more than two weeks from first consultation in a hospital setting to first diagnostic procedure in countries like Croatia, Spain, France, Finland, Ireland, Poland, Italy, Portugal and Slovenia (Graphic 1).

Time keeps running until the patient has the diagnosis. According to our survey conducted for the 4th LuCE Report, 42% of European patients with lung cancer wait more than two months from their first medical consultation (specialist or primary care) to receiving their diagnosis.

[2] IV LuCE REPORT ON LUNG CANCER - Early diagnosis and screening challenges in lung cancer (2019)



Graphic 1. Average time between first consultation in a hospital setting to first diagnostic procedure.

The experts consulted highlighted the following four **main challenges in the diagnostic pathway at hospital level** that may contribute to these delays:

- EBUS-TBNA: There are disparities in access and long wait-times for endobronchial ultrasound with transbronchial fine needle aspiration for lymph node confirmation in countries like Ireland, Israel, Norway, Portugal, Romania, Slovenia and the United Kingdom.

- CT-guided needle lung biopsy: There are long wait-times in countries like Denmark, Finland, Ireland, Israel and Portugal.

- PET-CT: There is low PET-CT capacity in some countries and delays in obtaining results, in, for example, France, Norway, Portugal, Romania, Slovenia and the United Kingdom.

- Molecular testing: This is one of the main challenges, as there is a long time before the results of biomarker testing such as PD-L1 and comprehensive molecular profiling can be obtained.

Average wait time for molecular test results

All experts consulted highlighted that the wait time for molecular test results is under four weeks in every European country, but this time differs depending on the country.

While there are countries where patients wait less than 14 days (Denmark, The Netherlands, Croatia, Ireland, Norway, Romania or Slovenia), in others it takes more than two weeks (France, Germany, Spain or Portugal).

According to the experts consulted, reducing the time to obtain the results of biomarker testing is one of the three top-priority challenges in the diagnostic pathway in France, Germany, Israel, Italy and Poland.

Regarding molecular tests, it is also important to highlight that there are differences in the number of biomarkers tested and reimbursed in each country, as Table 1 shows.

Availability of molecular testing is key to selecting the best lung cancer treatment option, ***but access to molecular testing differs across Europe.***

Molecular testing is an important part of the diagnostic process, but Eastern European citizens experience more restrictions in their opportunities to access these tests. In considering the next 20 countries, there are remarkable **differences between Western/Northern and Eastern Europe.** As Table 1 shows, patients from Croatia, Romania, Poland, Latvia and Spain do not have access to some molecular tests, which may have a significant impact on the choice of treatment.

	ALK	EGFR	PD-L1	ROS1	BRAF	MET	KRAS
Croatia							
Denmark							
Finland							No data
France							
Germany							
Ireland							
Israel							
Italy							
Latvia							No data
Norway							No data
Poland							
Portugal							No data
Romania							
Slovenia							
Spain							
Sweden							
Switzerland							No data
The Netherlands							
Turkey		No data		No data		No data	
United Kingdom							

Table 1. Availability of lung cancer molecular tests (November 2019).

Reimbursed

Not reimbursed

Contradictory data

With reimbursement, we refer to tests that are available for all patients, and therefore are not self-paid by the patient

Even when these molecular tests are accessible and patients do not have to pay for them, we still find some access

barriers and challenges:

- **Variable uptake of molecular testing in clinical practice.** Rates of testing - primarily EGFR - are improvable in some European countries, such as Italy (65%), Germany (66%)[3] and Switzerland (79%)[4]. Many countries do not have data available on testing, but it is reasonable to assume that testing rates would be comparable or lower[5].

- The workflows for molecular testing may not be standardized between centers, thus there is the potential for **variability amongst testing protocols used.**

- The **access to testing for molecular alterations is not equal between centers.** There are many disparities of access in Europe, depending on the place of residence, even within countries. A recent study conducted in Spain showed that the molecular assessment of some biomarkers reached 81.4% of patients with lung cancer, with some differences between regional communities regarding the molecular tests performed[6].

- **These tests are frequently performed as a series of single gene tests,** so many patients do not have a complete testing performed or will only have a second gene tested if negative for the first one and so on. This contributes to a delay in the diagnostic pathway. Access to Next Generation Sequencing (NGS) is highly structured only in a few countries, such as France, Denmark, the Netherlands and the United Kingdom.

- **Some tests (especially BRAF and MET) are not routinely performed** in some countries because their inhibitors are still not reimbursed there. On the other hand, inclusion of KRAS in NGS panels is not systematically recommended by guidelines.

- We must point out that **in many cases, these tests are not reimbursed by the national health system** but are paid by hospital institutions or pharmaceutical companies.

- Almost one third of Europeans with lung cancer did not know if their tumour was tested for any of the common mutations or PD-L1[7]. This is a significant barrier, as **many people are not aware of the importance of these types of molecular tests,** so they do not ask for them. Raising awareness about molecular testing is also important among clinicians as some may lack the knowledge required to determine which tests to order and how to interpret the results.

[3] Lee DH, Tsao M-S, Kambartel K-O, et al. Molecular testing and treatment patterns for patients with advanced non-small cell lung cancer: PIvOTAL observational study. PLoS One. 2018;13:e0202865

[4] Ess SM, Herrmann C, Frick H, et al. Epidermal growth factor receptor and anaplastic lymphoma kinase testing and mutation prevalence in patients with advanced non-small cell lung cancer in Switzerland: A comprehensive evaluation of real-world practices. Eur J Cancer Care (Engl). 2017; 26: e12721.

[5] Pennel N, Arcila M, Gandara D, West H. Biomarker Testing for Patients with Advanced Non–Small Cell Lung Cancer: Real-World Issues and Tough Choices. ASCO Educational Book. 2019; 39: 531-542.

[6] Rodriguez A, Guirado M, Camps CJ, et al. Biomarker testing of lung cancer in Spain, Annals of Oncology, Volume 30, Issue Supplement_5, October 2019.

[7] IV LuCE Report on Lung Cancer - Early diagnosis and screening challenges in lung cancer (2019).

New lung cancer drugs are extending durable remissions and prolonging the survival of patients **but there are significant barriers in accessing these treatments in some European countries.**

Reimbursed | Not reimbursed | Contradictory data | With reimbursement, we refer to drugs that are available for all patients, and therefore are not self-paid by the patient.

Table 2. Availability of lung cancer drugs (November 2019).

	CROATIA	DENMARK	FINLAND	FRANCE	GERMANY	IRELAND	ISRAEL	ITALY	LATVIA	NORWAY	POLAND	PORTUGAL	ROMANIA	SLOVENIA	SPAIN	SWEDEN	SWITZERLAND	THE NETHERLANDS	TURKEY	UNITED KINGDOM
Afatinib (indic. 1)																				
Afatinib (indic. 2)																				
Abraxane																				
Pembrolizumab (indic. 1)																				
Pembrolizumab (indic. 2)	1														1					
Pembrolizumab (indic. 3)																				
Pembrolizumab (indic. 4)																				
Osimertinib								4			4									
Gefitinib																			No data	7
Durvalumab		2																	No data	
Crizotinib (indic. 1)									5											
Crizotinib (indic. 2)									5											
Crizotinib (indic. 3)									5											
Brigatinib				3															No data	
Nivolumab										6	6									
Ceritinib																			No data	
Alectinib (indic. 1)																				
Alectinib (indic. 2)																				
Atezolizumab																				

- Country selection criteria: LuCE members (organisations and individuals) working in these countries.
- Drug selection criteria: Drugs approved by the EMA, excluding Necitumumab, Ramucirumab, Pemetrexed, Bevacizumab and Erlotinib, as this data was not provided.
- Drug indications are provided in Annex I.

[1] Pembrolizumab (indic. 2) is reimbursed only for tumours that express PD-L1 with a 1-49% tumour proportion score in Croatia and Spain.

[2] Durvalumab is reimbursed only for tumours expressing PD-L1 at ≥ 25% in Denmark.

[3] Brigatinib is available in France via Temporary Authorization of Use (ATU) pathway.

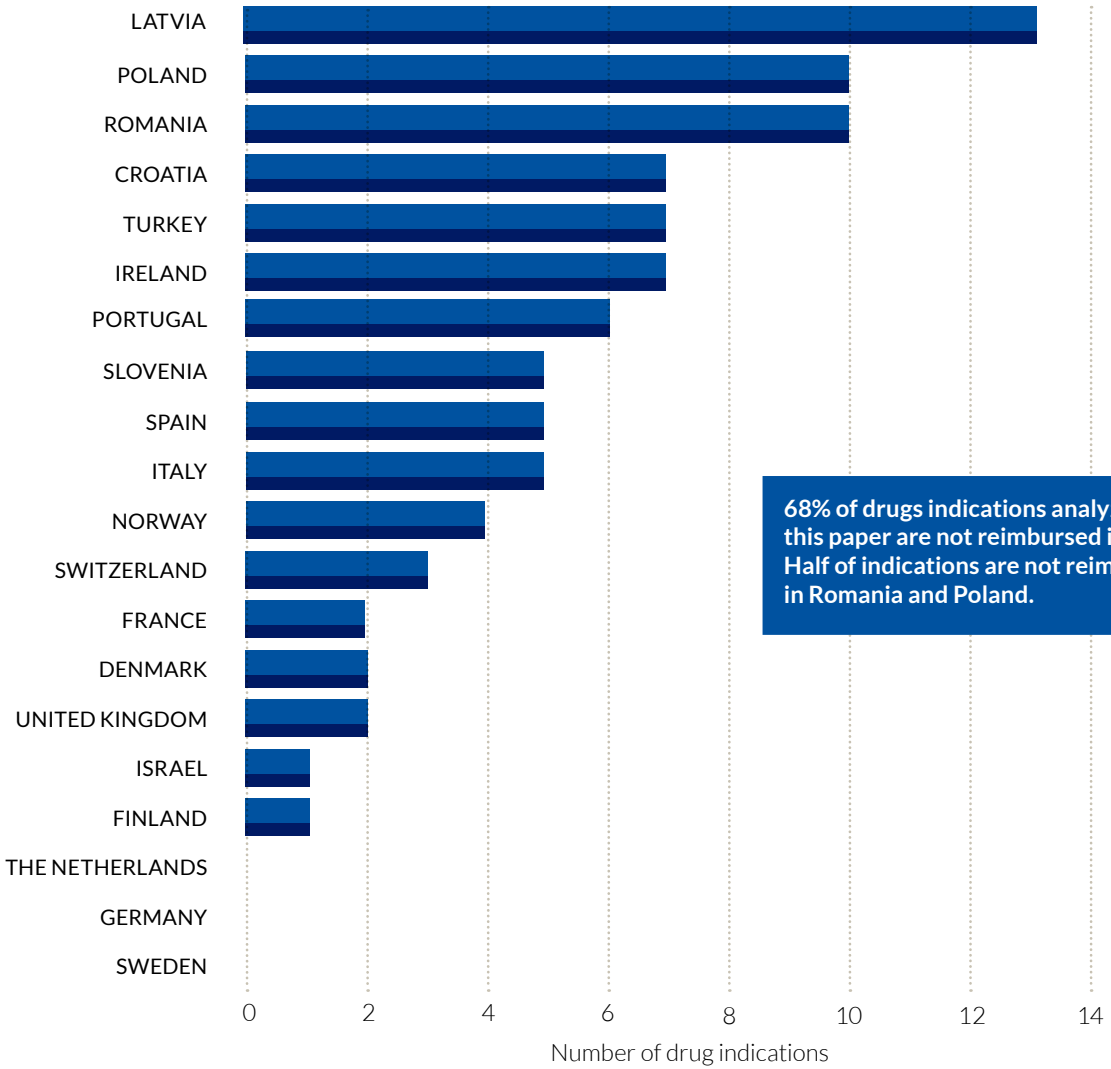
[4] Osimertinib is reimbursed only in second line therapy after progression on previous EGFR TKI in Italy and Poland.

[5] Crizotinib is available in Latvia via Individual named-patient-programs.

[6] Nivolumab is not reimbursed for PD-L1 negative non-squamous in Norway and Poland.

[7] Gefitinib is not reimbursed in Scotland.

As table 2 shows, access remains inequitable across Europe. In Eastern Europe, most of the drugs are not reimbursed or are available only at the full cost to patients. We find **many restrictions in Latvia, Poland and Romania.** Patients from these countries do not have free access to, at least ten indications of lung cancer drugs approved by the European Medicines Agency (EMA). Additionally, significant access barriers have been identified in Croatia, Turkey, Ireland, Portugal, Slovenia, Spain and Italy. In contrast, in countries like Finland, Germany, Israel, Sweden and the Netherlands, the majority of drugs are approved and reimbursed.



Graphic 2.
Number of lung cancer drug indications which are not reimbursed in each country (November 2019).

Previous data has showed that access disparities exist across European countries. However, it is also important mention that there are some drugs/drug indications approved in other parts of the world that are not yet approved by the EMA. In November 2019, we have found two such drug indications approved by the Food and Drug Administration (FDA) but not yet by the EMA, so European patients do not have access as outlined below..

Approved by the FDA but not yet by the EMA	• **Pembrolizumab** for the first-line treatment of patients with stage III NSCLC who are not candidates for surgical resection or definitive chemoradiation or metastatic NSCLC. Patients' tumors must have no EGFR or ALK genomic aberrations and express PD-L1 (Tumor Proportion Score [TPS] ≥1%). • **Nivolumab** in metastatic SCLC with progression after platinum-based chemotherapy and at least one other line of therapy.

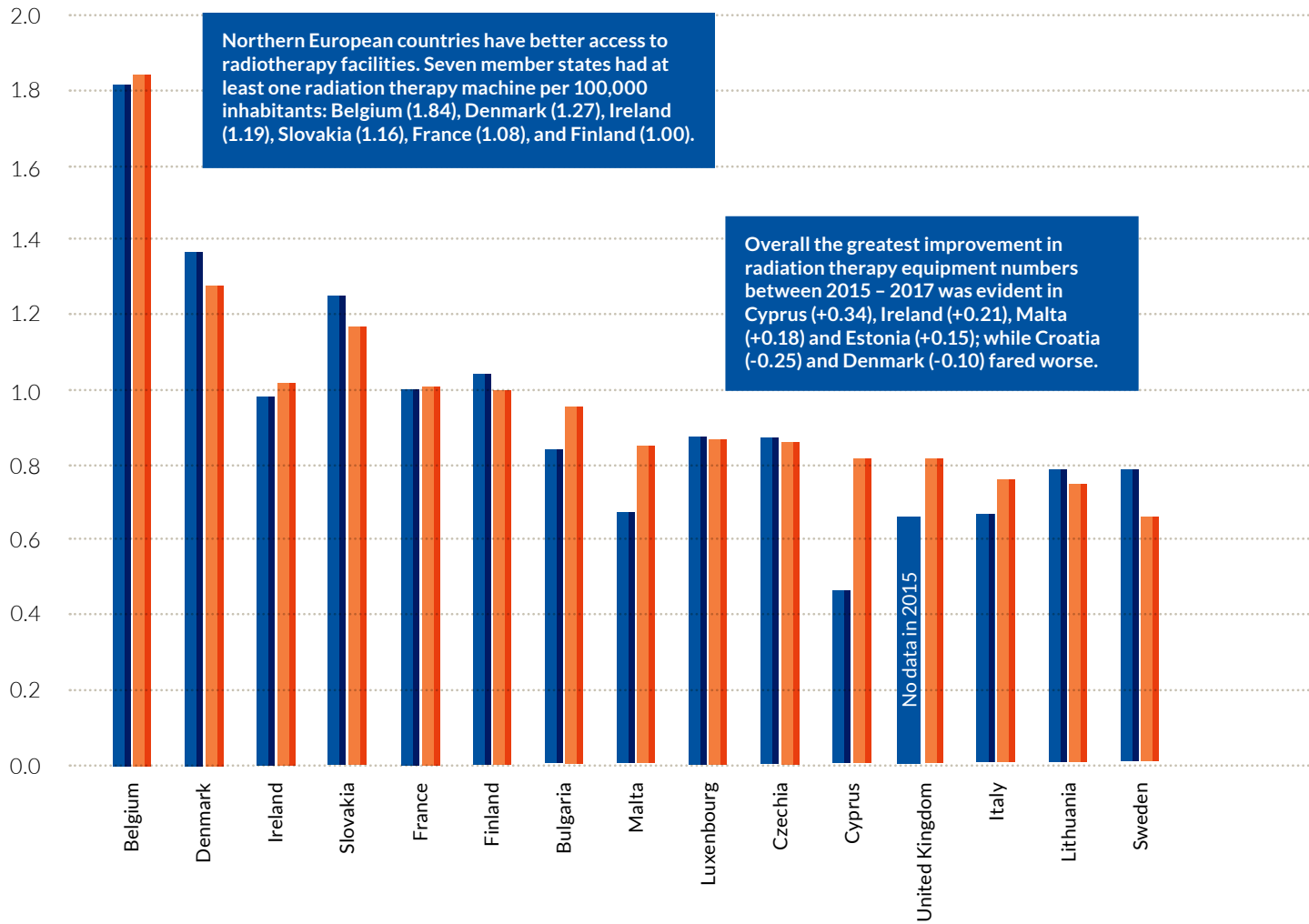
Compassionate use and expanded access programmes

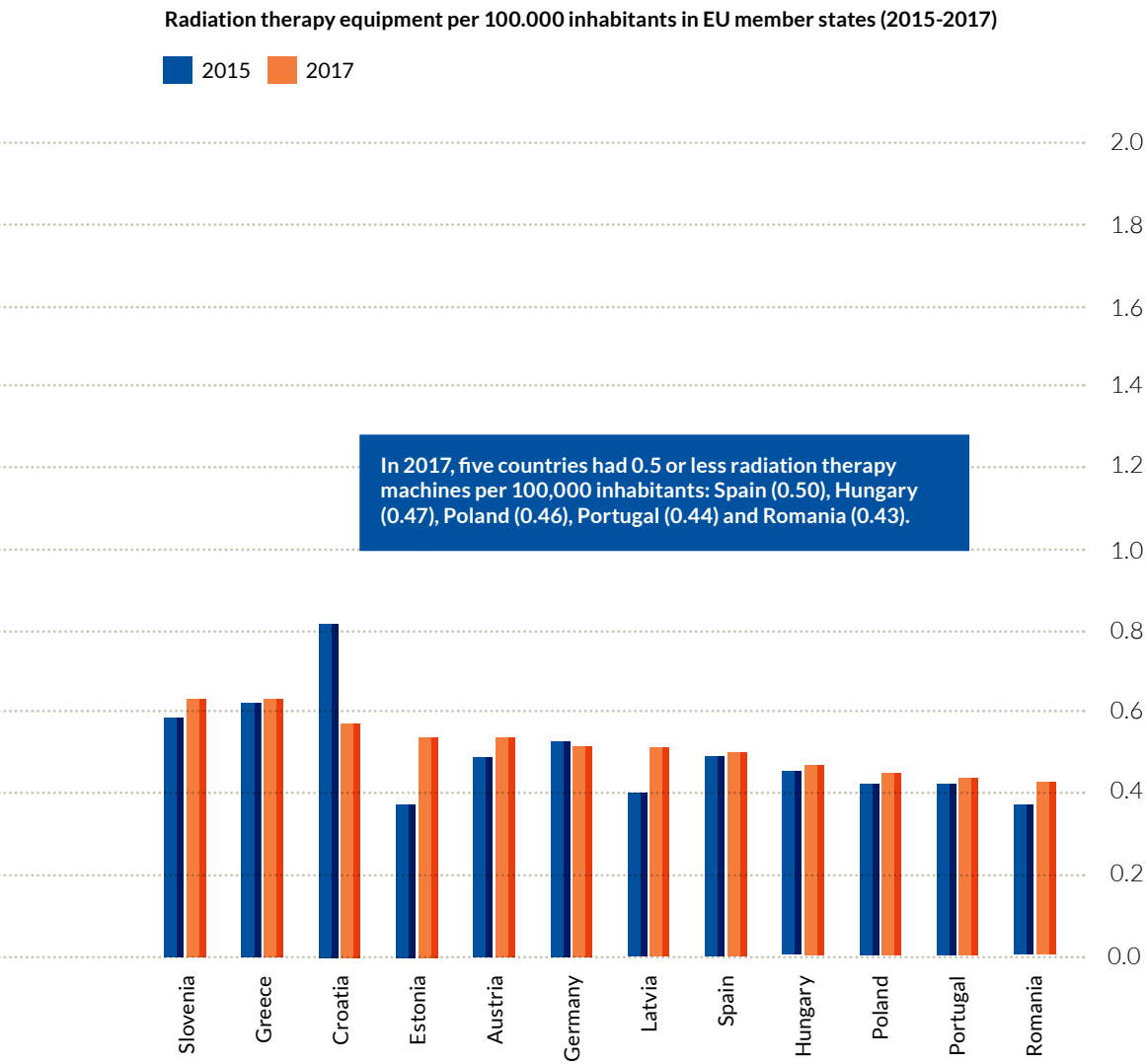
Most of the pharmaceutical companies are running expanded access programmes and/or compassionate use programmes for people with lung cancer. These programmes provide an opportunity for patients to get access to innovative treatments, which is especially important for people living in countries where they experience more restrictions in their ability to access new therapies. However, according to our consultation, these programmes are limited to a few patient populations and most of them are only run in certain countries*:

Compassionate use programmes	• Durvalumab (AstraZeneca): Spain • Brigatinib for ALK+ NSCLC (Takeda): Italy, Spain, Switzerland, Bosnia and Herzegovina, Montenegro and Poland
Expanded access programmes	• Durvalumab (AstraZeneca): European Union, except in countries with reimbursement • Capmatinib for MET mutated NSCLC (Novartis): Countries not given. • Pembrolizumb in the first line metastatic NSCLC (MSD): Serbia, Croatia and Bosnia and Herzegovina • Tepotinib for single patient requests, where the tumour harbors MET alterations (Merck): Countries not given • Pralsetinib (Blueprint Medicines): France, Germany, Italy, the Netherlands, Spain and the United Kingdom

**This is not an exhaustive list; however, it provides an indication of the various programmes taking place.*

Radiotherapy has a key role in curative and palliative treatments for many people with lung cancer, **but access to modern radiotherapy equipment differs among countries.**



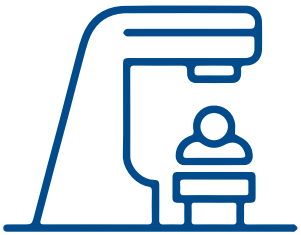


Graphic 3. Radiotherapy equipment across Europe. Source of data: Eurostat

No data available for The Netherlands

There is a relationship between a country's socio-economic status and the availability of radiotherapy equipment. **Some countries in Southern and Central-Eastern Europe have very limited access to radiotherapy.** These disparities affect not only the quantity of radiotherapy facilities but also the quality. According to the Directory of Radiotherapy Centers, the quality and type of equipment differ between regions, and there is special need in Eastern and South-Eastern countries to expand and modernize their radiotherapy facilities[8].

For patients who are suitable for surgery and/or radiotherapy as part of their treatment, we find that there are also access issues, with **long wait time intervals** for some patients.



Radiotherapy

49% of lung cancer experts consulted, think that the time taken to commence radiotherapy after diagnosis is too long in their countries

Surgery

47% of lung cancer experts consulted, think that the time to conduct surgery after diagnosis is too long in their countries.

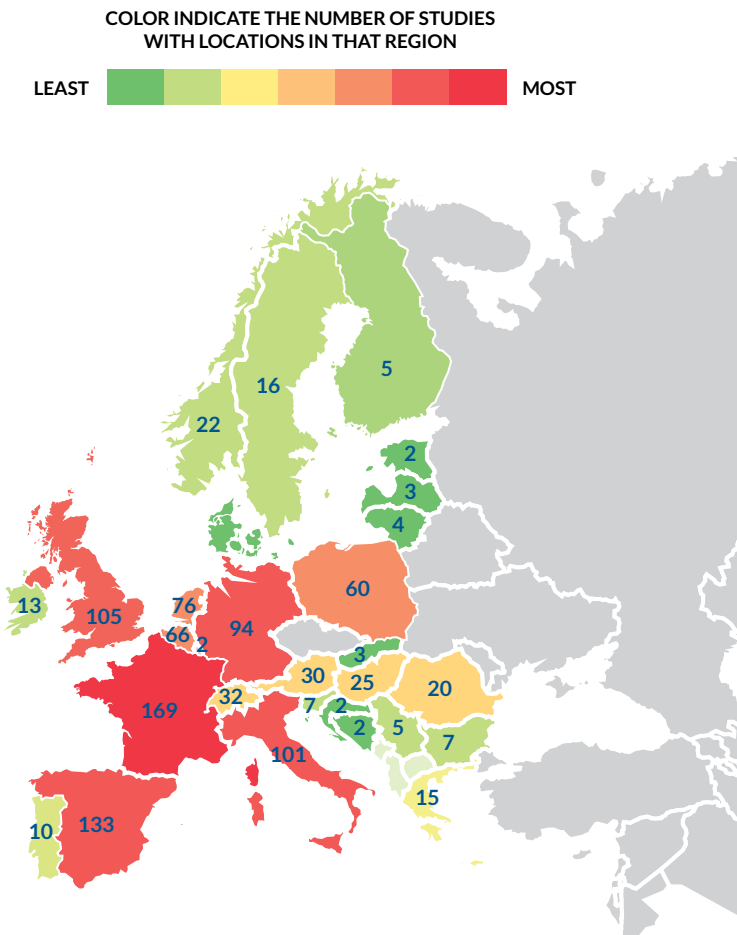
[8] Rosenblatt E, Izewska J, Anacak Y, et al. Radiotherapy capacity in European countries: an analysis of the Directory of Radiotherapy Centers (DIRAC) database. Lancet Oncol. 2013 Feb; 14 (2): 79-86.

Clinical trials are improving therapeutic options, **but innovation is not truly innovation if patients do not have access to them.**

Depending on the country you live in, you will have more or less opportunities to access clinical trials. According to ClinicalTrials.gov, there are 421 clinical trials currently recruiting patients in Europe (accessed 31 October 2019). This is lower than in the United States of America (737) but much higher than in Africa (11) or South America (42).

As Graphic 4 shows, Western European countries like France, Italy, Spain, Germany and the United Kingdom conduct the vast majority of trials. These numbers might be reasonable if they were in line with lung cancer prevalence in these countries; however there are other European countries with higher prevalence of lung cancer and much lower numbers of lung cancer clinical trials. We have compared the number of open trials in 22 countries with national lung cancer prevalence, and we have found tremendous disparities.

As Table 4 (next page) shows, patients from Switzerland, Israel, Denmark, Norway and the Netherlands have many more possibilities to access a lung cancer clinical trial than patients from Croatia, Turkey, Germany, Greece and Bulgaria.



Graphic 4. Recruiting studies in lung cancer (Europe). Source: www.clinicaltrials.gov (accessed 31 October 2019)

	Country	Number of patients with lung cancer per clinical trial
1	Israel	69
2	Switzerland	154
3	Denmark	170
4	Norway	176
5	Netherlands	191
6	Spain	217
7	Slovenia	232
8	Ireland	256
9	Sweden	283
11	France	307
11	Latvia	369
12	Italy	406
13	Poland	507
14	UK	528
15	Portugal	530
16	Romania	562
17	Finland	591
18	Bulgaria	599
19	Greece	684
20	Germany	803
21	Turkey	1,165
22	Croatia	1,513

Table 4. Number of patients with lung cancer per clinical trial. Source: Cancer Today – IARC

Disparities by population groups

There is an under-enrolment of specific groups of patients, representing a disparity in access to high-quality healthcare. According to our research for the 3rd LuCE Report[9], there are the following potential barriers on access to trials:

- **Demography:** Place of residence influences the access. The further away you are from the trial site, the more obstacles you may face.
- **Socio-economic status:** Lower income patients are less likely to participate in trials because of expenses associated with participation.
- **Level of educational:** This influences patient-capacity to understand clinical trials, so it is a reason to refuse trial participation.
- **Ethnicity:** Ethnic minorities are underrepresented in lung cancer trials.
- **Gender:** Women are still less likely to enroll in trials than men.
- **Age:** The elderly is significantly underrepresented in lung cancer clinical trials.
- **Language:** This is a barrier if materials are not translated into the candidate´s language.

[9] III LuCE Report on Lung Cancer - Challenges in lung cancer clinical trials (2018)

70% of experts consulted | *find* ***disparities*** *on access to lung cancer diagnostics and treatment* ***within their countries***

In rural areas, people with low incomes find it very difficult to undergo all the diagnostic procedures - bronchoscopy, CT scan, etc. because even though state reimbursement is possible, it takes too long; so usually it is self-paid by the patient.

Mainly at molecular diagnosis level, such as: access to NGS, liquid biopsy, re-biopsy/liquid biopsy for the analysis of resistance mechanisms, etc.

Smaller hospitals do not have the possibility of molecular testing, among which some even lack the capacity for bronchoscopy.

There are great differences in waiting times and resources.

Some hospitals have long delays in obtaining a biopsy. Some hospitals have dedicated cancer respiratory physicians, some do not. Some hospitals have SBRT, some do not and require referral to other centers, which adds further delays.

There are differences linked to centers that do not have all the professionals needed or do not have a multidisciplinary team culture.

More comprehensive testing and better access to new drugs in academic centers.

Small, regional pulmonology hospitals carry out basic diagnostics and do not offer, for example, genetic tests.

Lung cancer diagnosis and staging procedures vary according to institution resources and organization, with impact on time to diagnosis and treatment. Currently, molecular diagnosis for targeted therapy in NSCLC is unequal between different institutions.

Many patients have delays, especially those living in small cities, who experience difficulties in having sequencing in due time.

Disparities relate to locality of services available and willingness/ability of patients to travel.

There are some differences in the use of PET, and in the use of NGS.

Quotes from some of our experts consulted

Ten proposals to improve access and reduce disparities

1. Implementation of **multidisciplinary tumour boards** (MTBs). These are very valuable to provide a more accurate diagnosis and to formulate an optimal plan for every patient based on their own individual needs. Pathologists must be included because of the evolving role they play in molecular diagnostics and treatment.

2. **Need for broad panel testing to be adopted at national level in order to have an accurate diagnosis in the shortest possible time.** This would help to evaluate all proven and emerging biomarkers and would be helped by updated guidelines recommending broad biomarker testing in clinical practice across Europe.

3. **Establishment of standardised procedures to send samples to other centers in Europe** and minimize turnaround time and aid interpretation of results. This would reduce disparities related to demographic reasons.

4. Development and **accreditation of centers of excellence** in lung cancer. These centers would concentrate high expertise and resources relating to lung cancer, affording the best possible patient outcomes and promoting dialogue between reference networks.

5. Development and **harmonization of guidelines on lung cancer** across Europe, stimulating the development of uniform national lung cancer plans.

6. **Development and harmonization of HTA pathways to foster access to new innovation in Europe** and standardization of drug costs and time to reimbursement.

7. **Following the ESMO Score of Clinical Benefit** when deciding on reimbursement policies and setting new approaches in pricing, based on the assessment of added value and cost-effectiveness of drugs.

8. Development of **expanded access/compassionate access programmes** in order to promote access to drugs, which have been approved by the EMA, but are not yet reimbursed.

9. **Education for clinicians, advocates and people impacted by lung cancer** in terms of general lung cancer information and treatments and the role of precision/personalized medicine and care in improving patient outcomes. This would help patients to know and understand their options and advocate for the best treatment possible.

10. Promotion of **patient engagement and involvement** in research, reimbursement, HTA and in the decision-making process of new policies, at national and European level.

LuCE statement: CALL TO ACTION

Lung Cancer Europe (LuCE) is the voice of people with lung cancer and their relatives across Europe; and is committed to improve equal access to diagnostics and treatment options, whatever the country of residence.

We welcome diagnostic and therapeutic progress, as they have given hope to many people affected by lung cancer. However, in order for these advancements to impact patients' lives, they need to be available and reimbursed in a timely manner.

Around two million people die from this disease every year around the world, representing close to one in five cancer related deaths. All of these people deserve to have the opportunity to be cured, to live as long as possible and to enjoy the best quality of life as possible. **People with lung cancer cannot wait. We need solutions to access the best diagnostics and treatments possible, in the quickest time possible.**

LuCE encourages European institutions, national governments, regulatory agencies and the pharmaceutical industry to ensure that every European person with lung cancer has the same access to the best diagnostic procedures, treatments and care as possible, without discrimination on the basis of place of residence or socio-economic status.

As we launch this position paper, we ask as many stakeholders as possible to join efforts to foster improvements in the reduction of disparities across Europe. Every person and all organizations are welcome to join us, as each improvement achieved will be for the benefit of society as a whole.

ADVOCACY: what can we all do?

SPREAD THE WORD

- Distribute a **press release to the media** and highlight the most important aspects of this position paper, focusing especially on your country's data. Do not forget to include an institutional statement and an expert statement on lung cancer in your country.

- Share it on **social media.** Use some of the graphics to support your message and tag influential people and organizations.

- Send an **email to your contacts.** It is a good idea to attach the position paper, briefly explaining the document in the email text. Depending on the recipient, request their support in some concrete way.

- **Share it among physicians** in your country and request them to include this topic in their scientific meetings.

TIME TO ACT

- **Send this position paper to political parties,** requesting a meeting to discuss your main concerns about the results.

- **Contact your national representative at the European Parliament** (MEP) in order to share your concerns about these disparities at European level. Search for your MEP here: www.europarl.europa.eu/meps.

- Use these results as **a starting point for additional research** regarding access in your country.

- Contact LuCE to **share any other inequity issue that affects people with lung cancer** in your country. Remember: together we are stronger, so let us know the main challenges in your country.

Do you have any other idea to get the most out of this position paper?

Contact us: luce@etop-eu.org

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A special `thank you´ to our members for their constant support. Their work in advocacy inspires us to continue to grow and to keep working to overcome our shared challenges.

ANNEX I. Drugs indications for lung cancer analyzed in this paper

- **Afatinib (indication 1):** as monotherapy indicated for the treatment of Epidermal Growth Factor Receptor (EGFR) TKI-naïve adult patients with locally advanced or metastatic non-small cell lung cancer (NSCLC) with activating EGFR mutation(s).

- **Afatinib (indication 2):** as monotherapy indicated for the treatment of locally advanced or metastatic NSCLC of squamous histology progressing on or after platinum-based chemotherapy.

- **Abraxane:** in combination with carboplatin for the first-line treatment of NSCLC in adult patients who are not candidates for potentially curative surgery and/or radiation therapy.

- **Pembrolizumab (indication 1):** as monotherapy for the first-line treatment of metastatic NSCLC in adults whose tumours express PD-L1 with a ≥ 50% tumour proportion score (TPS) with no EGFR or anaplastic lymphoma kinase (ALK) positive tumour mutations.

- **Pembrolizumab (indication 2):** in combination with pemetrexed and platinum chemotherapy, for the first-line treatment of metastatic non-squamous NSCLC in adults whose tumours have no EGFR or ALK positive mutations.

- **Pembrolizumab (indication 3):** in combination with carboplatin and either paclitaxel or nab-paclitaxel, for the first-line treatment of metastatic squamous NSCLC in adults.

- **Pembrolizumab (indication 4):** as monotherapy for the treatment of locally advanced or metastatic NSCLC in adults whose tumours express PD-L1 with a ≥ 1% TPS and who have received at least one prior chemotherapy regimen. Patients with EGFR or ALK positive tumour mutations should also have received targeted therapy before receiving Pembrolizumab.

- **Osimertinib:** for the treatment of adult patients with locally advanced or metastatic EGFR T790M mutation-positive NSCLC.

- **Gefitinib:** for the treatment of adult patients with locally advanced or metastatic NSCLC with activating mutations of EGFR tyrosine kinase.

- **Durvalumab:** for the treatment of locally advanced, unresectable NSCLC in adults whose tumours express PD-L1 on ≥ 1% of tumour cells and whose disease has not progressed following platinum based chemoradiation therapy.

- **Crizotinib (indication 1):** for the first-line treatment of adults with ALK positive advanced NSCLC.
- **Crizotinib (indication 2):** for the treatment of adults with previously treated ALK positive advanced NSCLC.
- **Crizotinib (indication 3):** for the treatment of adults with ROS1-positive advanced NSCLC.
- **Brigatinib:** as monotherapy for the treatment of adult patients with ALK positive advanced NSCLC previously treated with crizotinib.
- **Nivolumab:** as monotherapy for the treatment of locally advanced or metastatic NSCLC after prior chemotherapy in adults.
- **Ceritinib:** for the treatment of adult patients with ALK positive advanced NSCLC previously treated with crizotinib.
- **Alectinib (indication 1):** as monotherapy for the first-line treatment of adult patients with ALK positive advanced NSCLC.
- **Alectinib (indication 2):** as monotherapy for the treatment of adult patients with ALK positive advanced NSCLC previously treated with crizotinib.
- **Atezolizumab:** as monotherapy for the treatment of adult patients with locally advanced or metastatic NSCLC after prior chemotherapy.

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POSITION PAPER

Disparities and challenges in access to lung cancer diagnostics and treatment across Europe

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