THE LUNG CANCER INSTITUTE

AT ST JAMES’S HOSPITAL

Transforming Lung Cancer Care
Breathing Life into Lung Cancer Care
Receiving a diagnosis of lung cancer is devastating. Outcomes are often poor, particularly for the many patients who present with late-stage disease. Awareness of lung cancer and global investment in research significantly trails that of other major cancers, which negatively impacts on patient services and on the number and speed of new discoveries.

The incidence of lung cancer continues to increase globally, which is also supported by Irish statistics. Since 2011, lung cancer has displaced breast cancer to become the No. 1 cause of cancer death, for women, in Ireland. For multiple reasons, including increase in the population age profile, continued tobacco use and significant rates of social deprivation, these numbers will continue to grow over the next 20 years. There will also be a significant increase in lung cancer, not related to smoking, over the same time period.

However, the picture is far from bleak. At St James’s, we offer significant hope to lung cancer sufferers. We have a long history of success in lung cancer management. We offer the largest and most comprehensive centre for the diagnosis, and treatment, of the disease in Ireland. Based on best international projections and mirroring our extensive experience, we believe that lung cancer can be converted from the killer disease it currently is, into a chronic, indolent disease that can be kept in abeyance over many years. This outcome requires substantial investment in physical and human capital, and will require highly individualised, protocol-driven, aggressive treatments.

Hand-in-glove with our clinical service, our Trinity College Dublin researchers envisage a translational lung-cancer research centre, partnered with leading international lung cancer institutions, which will create critical momentum and provide access to ground-breaking new therapies.

Our vision is to add not only years to life, but also life to years, for lung cancer patients. We want to secure €10m to invest in a new Lung Cancer Institute at St James’s Hospital. In a dedicated environment, the proposed state-of-the-art Lung Cancer Institute will consolidate diagnostics, operative assessment, operating theatres, in-patient and high-dependency beds, oncology day ward, psycho-oncology, nutrition and physiotherapy. This Institute will support all facets of diagnosis and treatment, offering patients the best possible outcomes.

Please take the time to read our proposition and consider how you could assist in developing a new Lung Cancer Institute. This new development will be a beacon of hope for our lung cancer sufferers and their loved ones, transforming the services offered to our patients.

Dr Finbarr O’Connell
Lead Clinician for Lung Cancer, Respiratory Consultant at St James’s Hospital
Reasons to Invest in Lung Cancer Healthcare

- Lung cancer is the 4th most common cause of cancer in Ireland, but it is the leading cause of cancer death in Ireland, accounting for 20% of all cancer deaths.
- Lung cancer has very poor survival rates compared to other cancers, with a one year survival of 37% and a 5 year survival of 15.3% (over 2010-2013).
- Lung cancer mortality in Irish women is the 4th highest in Europe. It is more than 50% above the European average and still increasing.
- Lung cancer incidence is projected to double over the next 20 years.
- Lung cancer cases continue to rise every year, primarily reflecting an increase in the number of cases, in females.
- Lung cancer became the leading cause of cancer death in Irish women, overtaking breast cancer, in 2011.
- Lung cancer incidence is increasing more rapidly in females than in males with an anticipated rise of 136% in females, compared to 52% in males, by 2040.
- Although overwhelmingly associated with tobacco use, 10-15% of lung cancer patients have never smoked.
- Anti-smoking initiatives are contributing to a reduction in smoking, but despite this, lung cancer numbers are increasing.
- Lung cancer patients have multiple co-morbidities and often present late, which may limit their treatment options. From 2008 – 2012, only 17% of lung cancer patients in Ireland had surgery.

A Global Battle Against Lung Cancer

- Lung cancer is a global issue and causes as many deaths as breast cancer, bowel cancer and prostate cancer combined, but yet remains poorly funded for research.
- Worldwide, there were approximately 14 million new cancer cases resulting in 8.2 million deaths in 2012, of which 1.59 million were due to lung cancer.
- A global revolution in personalised medicine, fuelled by a greater understanding of the role of genetics and bio-markers, opens a whole vista for cure of hitherto uncurable lung cancers.

The Vulnerable Lung Cancer Patient

- A high proportion of lung cancer patients are from lower socio-economic groups, have lower education standards, and are heavily dependent on publicly funded healthcare.
- In socially deprived areas, lung cancer rates are 60% higher, and mortality is also higher, than in more affluent areas.
- Many patients with lung cancer are aged over 70 and have multiple co-morbidities that may limit their treatment options. Whilst there are challenges in older patients, age is no longer a barrier to curative treatment.
- The lung cancer patient voice is rarely heard and is stigmatised by its link with smoking.
- Lung cancer is under-represented in relation to public funding, research investment and philanthropic donations.
St James’s has over 20 years of expertise in improving the clinical outcome for patients with lung cancer and has been running a specialist multidisciplinary team for that time.

1. A group of specialist doctors, nurses and health care professionals have driven the improvements in quality in the care of lung cancer patients, largely by delivering more with the same resources.

2. All members of our multidisciplinary team are at the cutting edge of their field.

3. Our specialised respiratory physicians, pathologists and radiologists all sub-specialise in lung cancer management, ensuring that treatments are founded on accurate diagnosis and staging.

4. St James’s offers the full complement of lung cancer diagnostic and treatment options working synergistically with scientific researchers to the advantage of all patients worldwide. Our team publishes research in the world’s most prestigious journals.

5. Our surgeons do more lung cancer operations than all other centres in Ireland combined. We do not discriminate on basis of age or advanced stage, when cure is still possible. We are one of the larger surgical centres in Ireland and Britain and perform a much higher proportion of lung preserving surgeries than other centres in Ireland.

6. Our radiation oncologists offer the complete range of modern treatments for lung cancer, including 4D-IMRT and SABR which is revolutionising the treatment of early stage lung cancer. We are the only public hospital in the state offering this facility.*

7. Our medical oncologists deliver cutting edge care, including treatment personalised to the individual patient, based on complex molecular analysis by our scientific colleagues. St James’s leads in molecular diagnosis, allowing the potential for targeted therapies, and access to emerging treatments, such as immunotherapy. Through our record of participation in clinical trials, some patients have received early access to the newest therapies available.

8. We provide holistic treatment programmes to our lung cancer patients, including clinical nutrition, physiotherapy, psycho-oncology and occupational therapy.

9. Our lung cancer service provides a pathway to early introduction, where necessary, to palliative care for lung cancer patients.

*4D-IMRT is 4 Dimensional Intensity Modulated Radiation Therapy and SABR is Stereotactic Ablative Radiation Therapy
4,256 lung cancers were diagnosed and treated in the hospital between 2003 and 2012. The numbers of new cases continue to grow annually. In 2015, 548 new lung cancers were treated at St James’s.

50% of all lung cancer surgery in Ireland takes place at St James’s Hospital. Across Ireland, 17% of lung cancer patients had surgery between 2008 – 2012.

The number of resections at St James’s is growing by 10% annually.

With improvements in targeted chemotherapy and radiation therapy, an increasing number of patients, who previously would have had palliative care only, can now be offered surgery after induction chemoradiation.

Since 2013, all patients at St James’s, with locally advanced lung cancer, have benefitted from 4D-IMRT.

From March 2014 to October 2016, the co-located radiotherapy department provided SABR to over 100 patients, with early-stage, non-operable lung cancer.
Our mission is to improve survival rates for lung cancer patients, and in so doing, add years to life, and life to years.

Our vision at St James’s Hospital is to develop a world class Lung Cancer Institute, to spearhead the proposed Cancer Institute at St James’s Hospital. The Lung Cancer Institute will provide access to personalised, proven treatments, by a highly skilled multidisciplinary team, to ensure a better quality of life for lung cancer sufferers.

We are seeking a €10m investment to make this proposition a reality.

There is a growing consensus that lung cancer can be converted from the killer disease it is at the moment, into a chronic disease that can be maintained in remission over many years. On foot of years of research-driven protocolised treatments, this outcome has already been achieved for breast cancer. However, the highly aggressive nature of lung cancer mandates a highly sophisticated model based on comprehensive molecular profiling, which will allow more vigorous, personalised treatments and will also require intensive follow-up.

A dedicated Lung Cancer Institute within St James’s Hospital will address the fragmented model of health care and research that is so common in Ireland, and in which best outcomes cannot be assured. The Lung Cancer Institute will consolidate diagnostics, wards, operating theatres, psycho-oncology, nutrition and physiotherapy, within a highly concentrated, specialised environment, which will facilitate all aspects of diagnosis, treatment and follow-up.

1 Enhanced Diagnostics and Treatment Pathways

Under this new model for our lung cancer services, internationally mandated targets for the patients’ journey, from presentation to treatment, will be met and hopefully exceeded. We anticipate that targets will be set, rather than simply adhered to, by our multidisciplinary team.

Within the Lung Cancer Institute, the combined provision of dedicated theatre space and surgical day wards, enhanced medical oncology services, and access to leading radiotherapy treatments, will have a considerable impact on both diagnostics and treatment pathways.

Ultimately our aim is to ensure that more patients enter a personalised curative treatment pathway. For those patients who do not immediately satisfy criteria for curative treatment, we will initiate aggressive induction therapy, informed by molecular diagnostics, with a view to converting patients from inoperable to operable cases.

Our lung cancer patients are vulnerable. The Lung Cancer Institute will introduce a navigator programme. The navigators will provide holistic support for lung cancer patients, explaining and taking them through their personalised integrated pathway. The navigators will assist patients to access all components of their treatment.

2 Advanced Surgical Capability

Patients at the Lung Cancer Institute will benefit from robotic techniques which will shorten recovery times by allowing the surgeon to carry out extensive surgical resection in the least invasive manner possible. This will be developed alongside an internationally accredited training programme. The expensive (€2m – €3m), but worthwhile robot, will also benefit other specialties, bringing advantage to a wide range of cancer sufferers.
3 Expansion of Radiotherapy Technologies

Patients with non-operable localised lung cancer will benefit from accessing the ever-evolving new radiotherapy technology, such as the expansion of 4D-IMRT and SABR. This allows for safer and more efficient treatment. At St James’s Hospital, patients currently have access to the ongoing INTENSE trial evaluating those new radiotherapy technologies. The Lung Cancer Institute, working alongside the research facilities on the St James’s campus, should allow for the future implementation of individualised radiotherapy for our lung cancer patients.

4 Medical Oncology and Personalised Medicine

The Lung Cancer Institute will have a new lung cancer day clinic at St James’s, accommodated in a comfortable setting, for our lung cancer patients. Key elements of the lung cancer day clinic will be: the provision of increased numbers of oncology day treatment chairs for out-patients receiving chemotherapy / personalised drug therapy, more liaison nurses to support the patients through their treatments, and new IT systems to effectively support patient flows. This clinic will be multi-disciplinary, which is particularly important for those receiving combinations of radiotherapy, chemotherapy and surgery.

For many lung cancer patients presenting at Stage III and IV, surgery is not an option. For these patients, we uniquely provide a comprehensive array of molecular diagnostics. This allows for the potential to use targeted therapies and access emerging treatments, such as immunotherapy. Our medical oncologists are able to deliver cutting-edge care, due to the complex molecular analysis undertaken by our scientific colleagues, on our campus.

A new Lung Cancer Institute will strengthen our capacity in personalised medicine, driven by our exceptional record in participation and recruitment of patients for international clinical trials, particularly in immunotherapy. In 2016, lung cancer patients at St James’s participated in seven clinical trials/translational studies, with additional clinical trials due to open soon.

St James’s Hospital participated in the landmark Keynote-024 clinical trial evaluating Pembrolizumab in lung cancer patients. In October 2016, The New England Journal of Medicine published the findings, describing how, for the first time, immunotherapy drugs were proven to work as a first line treatment for suitable Stage IV patients. This represents one of the greatest breakthroughs for lung cancer personalised treatment.

Ultimately through the establishment of a Lung Cancer Institute, backed by the existing diagnostics excellence at St James’s, the intention would be to establish a dedicated Phase 1 Clinical Trials Unit, allowing our lung cancer patients access to novel therapies, which would not be available otherwise.
5 Research and Novel Discoveries

The Lung Cancer Institute will enhance our existing research capabilities. Complementing our lung cancer service, we have an internationally renowned research unit that delivers breakthroughs in lung cancer testing and treatments, with global impact on lung cancer care. Since 2004, the Thoracic Oncology Research Group, within the Trinity Translational Medicine Institute, has been at the forefront of lung cancer research. The group has a specialised interest in novel targeted therapies, epigenetics, inflammation, drug resistance, cancer stem cells, tumour cell signalling, angiogenesis and immuno-oncology. Since 2004, this research group has secured over €2.5m in funding for research programmes within Trinity College Dublin.

The group has published over 100 papers, reviews and book chapters, in international peer-reviewed medical and scientific journals. These include publications in the world's highest ranked medical journals, including The New England Journal of Medicine, Lancet Oncology, Journal of Clinical Oncology, The American Journal of Respiratory and Critical Care Medicine and the Journal of Thoracic Oncology. Some notable achievements include:

• A new lung cancer test

In 2015, TCD researchers at St James's published a new test for lung cancer, in the New England Journal of Medicine, the No.1 ranked medical journal, globally. St James's was the only European cancer centre selected to participate alongside a consortium of world-class lung cancer researchers in the USA. This new, patented invention uses gene profiling from bronchoscopic samples to improve lung cancer detection, treatment and follow up.

• How smoking affects lung immunity

St James’s clinician scientists have made seminal discoveries on how smoking interferes with lung macrophage function (these are immune cells which fight lung infection and prevent cancers from developing). Their award-winning discovery was published recently in The American Journal of Respiratory and Critical Care Medicine, - the leading lung medicine journal.

• How smoking leads to sick lungs

The Flight Attendant Medical Research Institute supports St James’s researchers’ attempts to determine how smoking interferes with normal lung defenses, which leads to emphysema and lung cancer.

6 Cancer Institute for St James’s Hospital and Trinity College Dublin

In October 2016, Trinity College Dublin, and St James’s Hospital, announced a new Cancer Institute to be located on the St James’s Hospital campus. This proposed Cancer Institute will boost both physical infrastructure and intellectual firepower, and will set a new standard for cancer care, in a state-of-the art setting. It will integrate all facets of high-tech medicine in screening and cancer prevention, and will deliver targeted, integrated treatments. Along with the National Children’s Hospital and the recently opened Mercer’s Institute for Successful Ageing, the Cancer Institute will complete the development of a highly sophisticated ‘Medical City’ at St James’s.

The Lung Cancer Institute will establish best-in-class practice, ensuring our lung cancer diagnostics, treatment, and research components will be well placed to leverage additional funding for a wider Cancer Institute. Developing a comprehensive Lung Cancer Institute now, will lay the grounds for exceptional future international collaborations, and offer unrivalled facilities for newly trained experts to work in, once the Cancer Institute is fully established.
In 2015, the Thoracic Oncology Research Group, in collaboration with St James’s Hospital Foundation, launched the Target Lung Cancer campaign. This is the only active campaign in Ireland, that is solely dedicated to supporting patient care, and lung cancer research. The mission of Target Lung Cancer is to support world-class, patient-focused research in lung cancer and to pursue novel personalised treatments for patients.

Our Target Lung Cancer campaign sits within our wider ambition to secure a Lung Cancer Institute at St James’s Hospital.

Neven Maguire, award-winning celebrity chef and television personality, accepted the invitation to be our Ambassador for Target Lung Cancer. Neven’s support has created considerable media attention to lung cancer research and treatment at St James’s. Neven’s role significantly enhances our fundraising efforts and ‘Neven’s Food Festival 2016’, in aid of Target Lung Cancer, was a great success. Many lung cancer patients feel stigmatised due to the link with smoking. Having Neven as their Ambassador, has given a great boost to patients and to our staff at St James’s Hospital.
WAYS TO DONATE
We are seeking €10m to transform lung cancer services at St James’s Hospital.

We are asking you to make a significant donation to support the establishment of a Lung Cancer Institute at St James’s Hospital. All gifts are very much welcome and each gift is a step towards transforming lung cancer services.

Your generous gift will be recognised on a wall of thanks at St James’s Hospital and on a digital wall, with your permission. We have a range of recognition and naming possibilities, which can be discussed in detail with St James’s Hospital Foundation, on behalf of the Lung Cancer Institute at St James’s Hospital. We also welcome corporate donations.

If you are a taxpayer within the Republic of Ireland, there are ways to secure further funds for the Lung Cancer Institute, from the Revenue Commissioners. We are available to discuss this further with any donor. If you are considering making a gift from the USA, whilst we can directly accept such a gift, you will find it more tax efficient to process your gift through The Ireland Funds, who are ready to assist you.

Here are some suggested levels of giving that could allow us to work together and meet our fundraising goals.

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<th>Amount</th>
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To discuss making a donation to this appeal, please contact:
Clodagh Memery,
Director of Philanthropy, St James’s Hospital Foundation
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E: clodagh@supportstjames.ie

You can donate funds directly into our account:
Account: St James’s Hospital Foundation Ltd
IBAN: IE93 BOFI 9095 9993 6838 90
BIC: BOFIIIE2D
Bank of Ireland 85 James’s Street, Dublin 8
Thank you to all the patients and staff at St James's Hospital

Photography: Anthony Edwards, Senior Clinical Photographer at St James's Hospital

Opposite: Detail of a lung cancer cell from non-small cell lung cancer (NSCLC)
Award winning image © Dr Martin Barr, Institute of Molecular Medicine