2018 REPORT

LUNG CANCER CANADA

FACES OF LUNG CANCER

ACHIEVEMENTS, DRIVEN BY HOPE

THE FACES OF LUNG CANCER REPORT

NOVEMBER 2018

PERSPECTIVE, ACHIEVED

2018 FACES OF LUNG CANCER FOREWORD

After many years of school and studying, I thought I knew everything I needed to know when it came to practicing medicine. In retrospect, I had the technical aspect of being a physician covered, however, I can now see so many areas of my practice that could have improved.

My new outlook impacted not only every facet of my medical practice, but life, in general. It was a lung cancer diagnosis that propelled me into a new and strange world, as a patient, and forever changed my perspective as a physician.

LUNG CANCER PATIENTS AND FAMILIES DESERVE TO BE SUPPORTED

Just like any Canadian diagnosed with lung cancer, I went through stages of disbelief. I was a non-smoker, was this really happening to me? Quickly, the questions subsided and I started to see what was happening to me, as an opportunity. How can lung cancer be considered an opportunity? Having treated and helped so many patients over the years, witnessing their strength and determination is where I really pulled my hope. Why was I any different than them, up against a battle of life and death, I was determined to make a difference for all of the Canadians battling the most common cause of cancer death.

I could no longer look at my role as a physician in the same way. How could I? I lived the challenges of a patient navigating the system for treatment, tests, and answers. The notorious 'stigma' associated with lung cancer became my reality – concerns I once heard and read of, now were my real life. I am a fortunate one though. I understand first-hand what the power of a strong support system can mean, and do. My oncologist and team of nurses managed my medical journey, while my family and friends where there for everything else. I was one of the lucky ones who have the privilege of achieving an enlightened perspective, now as a cancer survivor.

There is no going back to my previous life. I have important responsibilities as a physician, but equally important now are my goals as a patient advocate. With every patient I treat, I now have the privilege of connecting with them on another level. I understand their fear. I recognize their confusion. Now and moving forward, I will tirelessly try to blend medical practice with compassion, as someone who will always be both a physician and a lung cancer survivor, this is about the achievement of hope.

I feel it is important to impart what I have learned through my experiences and through the 2018 Faces of Lung Cancer Report, I hope to inspire others and change their perspectives for the future.

– Dr Marcelo Kremenchutzky

TABLE OF CONTENTS

INTRODUCTION

ACHIEVED IN CANADA. SHARED GLOBALLY. #CANADIANSDIDIT

Hope is Here for lung cancer. Innovation is providing patients living with lung cancer more quality time to spend with their families and to pursue life goals. Real progress has been made to increase the 17% five-year survival rate. Although there is still a significant amount of work to be done, innovations in recent years have made the experience for someone diagnosed with lung cancer today much different and more hopeful than even just five years ago.

Canada has been a major contributor on the global scale to advancing the lung cancer fight, punching above its weight. Researchers at Canadian hospitals are breaking new ground in developing lung cancer screening programs, enhanced testing and diagnosis. Internationally renowned clinicians advancing treatment possibilities in clinical trials call Canada home. These trials are important to Canadian patients who are being given new opportunities to fight this devastating disease, and then help lung cancer patients globally. New models of patient-care are being pioneered in Canadian clinics and hospitals to improve the experience and standards in lung cancer care all over the world. Ongoing study and evaluation provide patients with a chance at improved outcomes that can benefit Canadians and beyond. Canadian achievements have impacted all corners of the earth. Indeed in 2018 the global lung cancer community came to Canada for the World Conference on Lung Cancer, to learn all the latest advances.

Canada is at the tipping point of change that will usher in the new lung cancer narrative, built on hope and the collective strength of the community. The 2018 Faces of Lung Cancer Report highlights Canadian achievement in lung cancer and looks ahead to the journey ahead as we strive toward survivorship.

SO MUCH HAS BEEN ACHIEVED IN THE FIGHT AGAINST LUNG CANCER. PROGRESS AND HOPE WILL DEFINE THE COMMUNITY AND CARRY US FORWARD.

PART 1

LUNG CANCER IN CANADA

THE CURRENT SITUATION
#THEPULSEOFLUNGCANCER

2018 Report on Staging[1]

Each year, the Canadian Cancer Society (CCS) brings forward updated statistics on the burden of disease across all cancer types. This year, CCS has developed a special report on cancer incidence by stage, addressing the cancer community's need to build out a more granular mapping of cancer across the country while identifying the varying burdens of the disease at each stage of progression. The research reflects more than twenty-five years of work and collaboration across the provincial and territorial cancer registries, Statistics Canada and their partners.

Why does the stage of lung cancer matter? Knowing the stage of disease helps inform medical teams in assessing prognosis, treatment plans and the probability of effectiveness. When evaluated statistically, this information can point to trends over time and regional differences. For lung cancer, this valuable information was collected in every province except Quebec since 2010. Routine cancer staging is categorized, as follows:

Stage 0	Stage I	Stage II	Stage III	Stage IV
There is a group of abnormal cells (e.g., dysplasia, carcinoma in *situ*) that may develop into cancer at some time in the future but are not yet considered cancer.	The cancer is relatively small and contained within the organ in which it started.	The cancer has not spread into surrounding tissue but the tumour is larger than in stage I. Sometimes stage II means that cancer cells have spread into lymph nodes close to the tumour.	The cancer is large and may have spread into surrounding tissues and lymph nodes in the area.	The cancer has spread through the blood or lymphatic system from where it started to a distant site in the body (i.e., it has metastasized).

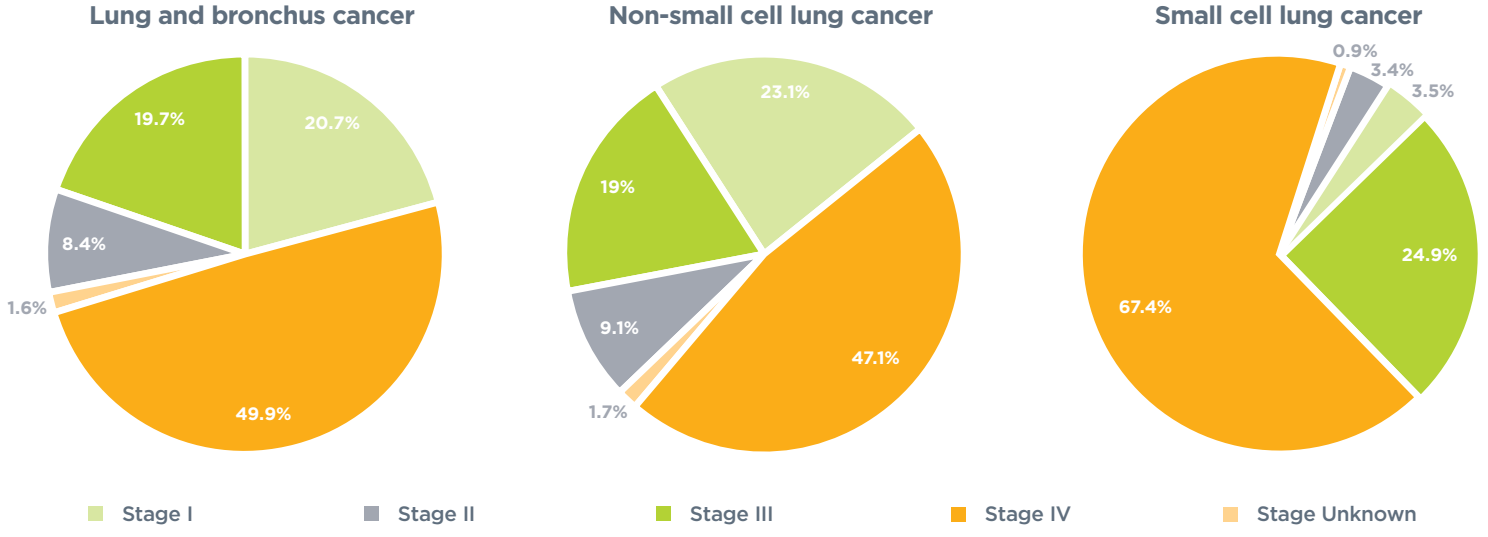
Sometimes uppercase letters are added to the number to divide these categories into substages.

The CCS report highlights the low survival rates in lung cancer, in large part due to late diagnosis. One example cited estimates of five-year relative survival rates for non–small cell lung cancer (NSCLC) in the United States range from 1% to 10% across the sub stages of stage IV, and from 68% to 92% for the sub stages of stage I.[2] Meanwhile, five-year survival estimates are lower for small cell lung cancer (SCLC): 2% for stage IV and 31% for stage I.[2]

Lung Cancer Staging in Canada – Key Insights from the Canadian Cancer Society's special report:

- Approximately half of all lung cancers diagnosed were stage IV (Figure 1). This represented an average of 6,823 individuals being diagnosed with metastatic lung cancer each year in Canada outside of Quebec (Table 1).
- A larger percentage of SCLC (67.4%) was diagnosed at stage IV compared to NSCLC (47.1%). Almost one-quarter (23.1%) of NSCLCs were diagnosed at stage I compared with only 3.5% of SCLCs (Figure 1)
- The distribution of stage I lung cancers appeared higher in females (23.7%) than males (17.8%), and the distribution of stage IV lung cancers appeared higher in males (52.0%) than females (47.1%).
- The percent distributions of lung cancer stage was relatively similar across the provinces and territories for all stages of NSCLC (Table 1).
- Table 1 suggests variation across the country in stage-specific ASIR.
- The highest ASIR of stage IV NSCLC was observed for Nova Scotia (38.5 per 100,000) and the lowest in Ontario (25.5 per 100,000). For stage IV SCLC, the highest ASIR was also observed in Nova Scotia (9.0 per 100,000) but the lowest was observed in British Colombia (4.3 per 100,000).

Figure 1 - Percent distribution of lung and bronchus cancer cases by stage at diagnosis and subtype, both sexes, Canada,* 2011-2015†



Analysis by: Health Statistics Division, Statistics CanadaData Source: Canadian Cancer Registry database at Statistics Canada *Excludes Quebec †Includes cases diagnosed inpeople aged 18-79 years

What is all of this data telling us?[2]

The lung cancer staging data confirms what the community has been saying for years. In the majority of lung cancer cases, detection occurred at a later stage when it has already spread to other parts of the body. This provides an explanation as to why lung cancer has one of the lowest rates of survival, compared to all of the major types of cancer in Canada. Stage-specific survival rates are a glaring reminder of why early detection matters.

The data analysis also aligns with Lung Cancer Canada's educational information that SCLC is more aggressive and has a high potential for metastasis, so it is more likely to be detected at a later stage than NSCLC. Age-standardized incidence rates varied across the country with a higher incidence in the east than in central Canada and the west.

Survival rates in lung cancer within stage groups vary from province to province. Illustrated in the report is a two-year relative survival for stage I lung cancer ranging from 66.5% in Prince Edward Island to 84.8% in British Columbia. The two-year relative survival for stage IV also varied, ranging from 7.6% in Manitoba to 13.2% in British Columbia. While there are demographic differences that may partly explain these differences, the take home message has to be that survival rates are low in all provinces. These examples further suggest that differences in detection and access to treatment may be putting patients at a disadvantage and may be a constraint on survivorship. More data is needed in order to assess longer-term stage-specific survival and provide a better understanding of the varying outcomes between regions.

This data particularly emphasizes the opportunity and important role that lung cancer screening can play in the early detection of lung cancer. It is clearly understood now that with low-dose CT sceening patients are far more likely to have a stage I diagnosis, and less likely to have a stage IV diagnosis. Microsimulation modeling, performed by the CCS, predicts that 1.4 million Canadians would be eligible for high-risk screening in 2018 (OncoSim, version 2.51). That is a lot of chances to save a life - it is an integral part of the fight against lung cancer that cannot be ignored.

- **MORE CANADIANS WILL DIE AS A RESULT OF LUNG CANCER THAN FROM COLORECTAL, BREAST AND PROSTATE CANCERS COMBINED.[2]**
- **78 CANADIANS ARE DIAGNOSED DAILY AND ANOTHER 58 DIE FROM THE DISEASE, EVERY DAY. [2]**
- **28,600 CANADIANS WILL BE DIAGNOSED WITH LUNG CANCER. THIS REPRESENTS 14% OF ALL NEW CANCER CASES IN 2017.[2]**
- **LUNG CANCER IS THE LEADING CAUSE OF CANCER DEATH FOR BOTH SEXES, ACCOUNTING FOR APPROXIMATELY 26% OF ALL CANCER DEATHS IN BOTH MALES AND FEMALES.[2]**
- **21,100 CANADIANS WILL DIE FROM LUNG CANCER. THE RATES OF WOMEN BEING DIAGNOSED INCREASED IN ALMOST EVERY PROVINCE IN 2017.[2]**
- **14,400 MEN WILL BE DIAGNOSED WITH LUNG CANCER AND 11,100 WILL DIE FROM IT.[2]**
- **14,200 WOMEN WILL BE DIAGNOSED WITH LUNG CANCER AND 10,000 WILL DIE FROM IT.[2]**

Table 1 - Projected New Cases in 2017[2]

PROVINCE	TOTAL CASES	WOMEN	MEN
British Columbia	3,150	1,500	1,550
Alberta	2,150	1,100	1,100
Saskatchewan	770	370	420
Manitoba	890	430	480
Ontario	9,000	5,300	5,300
Quebec	8,300	4,400	4,300
Newfoundland	470	320	220
New Brunswick	810	420	290
Nova Scotia	960	470	480
Prince Edward Island	135	75	60

ELDER ELMER COURCHENE

Faces of Lung Cancer Patient Story

Elmer was 81 years old when he found out. As an Indigenous leader, it was a life full of community and family, his perfect balance. He did not expect lung cancer, or the new journey in front of him. It was a complete shock for Elmer and his family. He was an active individual and it wasn't until he experienced respiratory problems that his lung cancer was discovered. Elmer is open about the fact that he was a lifelong smoker and he comments on the lack of education about the risks associated with smoking, at that time. Improving education about lung cancer among Indigenous peoples is very important for Elmer when he speaks with younger generations and this includes the risks associated with smoking.

It was with Elmer's son that he realized there were two ways to look at the diagnosis in front of him. Let the cancer win or harness the love and support and make an active attempt to live. "Keep going" is what his son said to him and he did just that by completing his first course of treatment.

As an independent force in his community and with his family, it was difficult at times to let others help him. As a loving grandfather with over a dozen great grandchildren, the overwhelming love, and support that he received as the family's patriarch was his main source of hope.

Lung cancer has become part of Elmer's story forever. He comments on the disease as something he "will have to walk with until the end of his time" and this life experience has many lessons. Optimistic and energized by the support from Elmer's circle, he admits, "I don't know the meaning of giving up".

"People would just assume that I had the perfect life. I was a respected physician with a beautiful wife and twin babies, it was almost picture perfect. You wouldn't have guessed that lung cancer would be lurking and try to threaten my happy family. I was only 52. Active, healthy and I never smoked. But it was true. I was diagnosed with stage four metastatic non-small cell lung cancer. As a physician, I was in control of someone's care and for the first time, I had to put my hope into others."

- Dr Marcelo Kremenchutzky

CANADA WILL CONTINUE TO HARNESS THE POWER AND STRENGTH OF THE COMMUNITY TO ACHIEVE POSITIVE OUTCOMES IN THE LUNG CANCER STORY.

Elder Elmer Courchene
Pine Falls, MB

PART 2

CANADIAN ACHIEVEMENTS

SCREENING UPDATE
#HOPEINSCREENING

Canada continues to be an important contributor to the global base of lung cancer research and breaking new ground in the area of screening and diagnostics. Dr Stephen Lam MD, FRCPC Chair, Lung Tumor Group & Judah Leon Blackmore Chair, BC Cancer Agency Professor of Medicine University of British Columbia led a Canadian team who showed that a risk prediction tool to detect early stage lung cancer in high-risk individuals is superior in terms of accuracy compared to other models.

The Pan Can Lung Cancer Risk Prediction Model is used to determine if a person should undergo annual computed tomography (CT) screening to detect early-stage lung cancer. The new approach outperformed current screening inclusion criteria such as The US Preventive Services Task Force recommendation. Currently, both the U.S. and Canadian lung cancer screening guidelines are based on age and smoking history. But the Pan Can Model also looks at numerous additional variables such as sex, family history of lung cancer, chronic obstructive pulmonary disease, educational level, and body mass index.

In lung cancer, early detection is everything. If a high-risk individual is diagnosed before the onset of symptoms when the cancer is in an early stage, the chances of survival are very good. Dr Lam estimates that up to 75% of patients diagnosed with advanced lung cancer are incurable, but this ratio can be reversed. With the proper screening protocols in place the odds dramatically shift and 75% of the diagnoses are at an early stage when curative treatment is possible.

After the Canadian Task Force on Preventive Health Care released a guideline recommending annual lung cancer screening in high-risk adults ages 55-74 who had smoked at least 30 pack-years (e.g. one pack a day for 30 years). British Columbia, Alberta and Ontario were the first to pilot screening programs that will help to shape a provincial standard. Ontario has three sites and the program is expanding to additional sites. British Columbia's pilot is linked to an international lung screening trial with Australia and Hong Kong to test the use of computer technology as an aide to reading CT scans as well as examining additional lung cancer risk factors such as air pollution and genetic susceptibility to improve the screening selection criteria further. New programs are underway in Montreal and the Alberta pilot has applied for an extension after completion of the pilot.

"All of the provinces must move ahead together to implement a standardized screening program. The pilots were good to identify potential issues, but it is time to roll out routine screening like we see in colorectal and breast cancers." Dr Lam points to the fact that these programs are not expensive and they present dramatic cost savings to the health system. When cancers are detected early, the cure rate improves and we eliminate the costs of treating at a late stage, which is the more expensive stage.

Artificial intelligence is starting to become more common in the lung cancer screening discussion. "This is the future," says Dr Lam. "Artificial intelligence to read CT scans that can accurately detect lung nodules and

other changes in the lung, to determine an individual's risk for lung cancer is where the next innovation in screening will come".

Presented at the World Lung Conference in Toronto this past fall, the Dutch-Belgium NELSON-trial, which is a population-based randomized control trial comparing CT screening with no screening in ever smokers between the age of 50 to 74 years who have smoked at least 15 cigarettes a day for 25 years or more or at least 10 cigarettes a day for 30 years or more and have smoked within 10 years. Between 2004 and 2006, the study enrolled 15,822 participants. The CT screening received a baseline CT and three additional screenings at intervals of 1, 2 and 2.5 years. Analysis at 10 years of follow-up showed a significant 26% reduction in lung cancer mortality in men and up to 61% reduction in mortality in women compared to the no screening group.

With two global, large randomized trials demonstrating significant mortality reduction, we now have clear evidence to support the implementation of lung cancer screening similar to breast and colorectal screening that save the lives of countless individuals.

New research projects are very important in the area of lung cancer. Despite being Canada's deadliest cancer killer, lung cancer receives some of the lowest funding for research compared to other cancers.

LUNG CANCER CANADA BELIEVES IN THE POSITIVE IMPACT OF SCREENING PROGRAMS AND WE CALL ON ALL LEVELS OF GOVERNMENT TO ACTUALIZE A NATIONAL PROGRAM FOR ROUTINE SCREENING THAT WILL SAVE EVEN MORE LIVES.

Dr. Stephen Lam
Professor of Medicine, British Columbia

CLINICAL TRIAL NEWS – AN UPDATE FROM WORLD LUNG #HOPEINTREATMENT

This fall, Canada hosted the 19th World Conference on Lung Cancer, a significant meeting that attracts a great deal of attention for its highly anticipated research updates. The conference is the world's largest international gathering of clinicians, researchers, and scientists in the field of lung cancer and thoracic oncology.

The Presidential Symposium is a presentation of the key research results at the conference, deemed by the expert scientific panel to be most significant.

The first presentation of the Presidential Symposium was the global phase 3 PACIFIC study.[3] Data showed that the immunotherapy drug durvalumab significantly improved overall survival (OS) in Stage III, unresectable NSCLC patients when administed for a one-year course after chemoradiotherapy (CRT). This represents the first major advance in this disease setting for many years, improving the cure rate. In context, stage III lung cancer is the stage at diagnosis for thousands of individuals a year in Canada, so many lives will be saved. PACIFIC has provided compelling evidence for the unprecedented benefit of durvalumab treatment as the new standard of care.

A second presentation of the Presidential Symposium gave early results of a study of the ALK inhibitor, brigatinib. Briefly, the study demonstrated that brigatinib has robust efficacy in ALK+ NSCLC, on average delaying cancer progression for at least 16.7 months. This study enrolled patients with advanced ALK+ NSCLC who had not received any other ALK inhibitor before. Patients received either brigatinib or the original ALK inhibitor, crizotinib. Brigatinib showed a clinically significant improvement in PFS compared with crizotinib, adding to the options for these patients. Further time is needed to learn the full results of this study.

"World Lung is always an epicenter of new research that has the potential to shape the future of lung cancer clinical practice," says Dr Paul Wheatley-Price, President of Lung Cancer Canada. "Data and research have propelled us into a new era of the disease, we are making remarkable progress and this is reflected in the positive patient outcomes that are being reported at the meeting, this gives us great hope."

The third important presentation of the Presidential Symposium was the IMpower133 trial. Small cell lung cancer has not seen any advances for decades, and this study evaluated the efficacy and safety of adding the immunotherapy drug atezolizumab to the standardly prescribed chemotherapy of carboplatin and etoposide, in patients with extensive-stage small cell lung cancer (ES-SCLC). The results showed that the addition of atezolizumab to the chemotherapy provided a significant lengthening of survival and delay in progression of the cancer, with no worrying increase in side effects. Atezolizumab plus carboplatin and etoposide may represent a new standard regimen for patients with untreated ES-SCLC.

The final Presidential presentation however was disappointing, but it is also important to learn what doesn't work so we don't prescribe ineffective drugs or repeat negative research studies. The LUME-MESO study

tested the drug nintedanib, which targets blood vessel growth in tumours, in combination with pemetrexed/cisplatin chemotherapy, in patients with unresectable malignant pleural mesothelioma. When compared to placebo in this study, the trial reported no benefit to the addition of nintedanib,

Maybe the most impactful of all the Presidential Symposium presentations was the NELSON study, confirming the major impact of lung cancer screening. The NELSON study has been discussed earlier in this report in the Screening Update.

The Presidential Symposium at World Lung clearly shows how far science has come and these discoveries are changing patient's lives. It underscores the importance of early diagnosis and treatment at earlier stages of lung cancer. Not all research yields the results that we want, as was the case with nintedanib targets. Research fuels science and even when endpoints are not met, progress is still achieved with those learnings applied to the next discovery.

LUNG CANCER CANADA BELIEVES CLINICAL TRIALS ARE A STANDARD OF CARE AND ENCOURAGE PATIENTS TO EXPLORE HOW CLINICAL TRIALS MAY BE A PART OF THEIR CARE.

Dr Paul Wheatley-Price
President of Lung Cancer Canada.

GAME CHANGING ADVANCEMENTS
#HOPEINSCIENCE

Advanced testing and diagnostics are revolutionizing treatment pathways in lung cancer like never imagined. New techniques in biomarker tests are identifying specific gene mutations at remarkable speeds, allowing treatment to be highly targeted to an individual patient. With a majority of lung cancer diagnosed at later stages, time means a patient has a better chance of survival, which means everything.

Canada has long been a pioneer and leader when it comes to molecular research, challenging the status quo to identify new diagnostic approaches. Dr Zhaolin Xu, Professor, Department of Pathology, Faculty of Medicine at Dalhousie University is studying gene mutations in human lung cancer in addition to pathological assessment of the tumour. New testing techniques now allow patients to be divided into various subgroups based on not only tumour morphology but also molecular profiling, allowing them to receive personalized targeted therapy. In 2005, Dr Xu and his colleagues established the QE II Lung Tumor Bank for research, which is certified by the Canadian Tumor Repository Network (CTRNet). The tumour bank has become one of the largest in the country, a major achievement in Canadian research.

"This is a very exciting time in the area of genetic testing for lung cancer, research has become so advanced that it is really giving us a great deal of hope and optimism," says Dr Xu. "PD-L1 is something that we will start to hear a lot more about, similar to the excitement about EGFR tests a few years ago, I think this will make a dramatic impact in patient survival in the coming years."

According to new research led by Dr Xu, all patients with advanced NSCLC should be tested for PD-L1 at diagnosis. Immune checkpoint inhibitors are fulfilling their promise for the therapy of lung cancer. The expression of immune checkpoint proteins is one mechanism for tumours to deactivate the normal host immune response and evade destruction.[4] Immune checkpoint inhibitors are efficacious in lung cancer and are targeted against a number of molecular targets. These include the inhibitory programmed death 1 (PD-1) receptor expressed on T cells, natural killer cells, and some B cells.[4] The two PD-1 ligands are programmed death receptor ligand 1 (PD-L1) and PD-L2, both of which are expressed in a wide range of effector cells, antigen-presenting cells, and T cells.[4]

Dr Xu comments, “this is complex science and we are navigating our way through, making note of the successes and failures to advance our understanding. The Canadian PD-L1 22C3 Quality Validation Project is currently taking place in more than a dozen sites across Canada, with the purpose of standardizing a non-kit based assay for PD-L1 expression. This kind of research can be a game-changer.”

Nivolumab and pembrolizumab are two anti-PD-1 antibodies that are approved after failure of conventional chemotherapy for advanced NSLC in Canada. Nivolumab can be prescribed without biomarker testing for PD-L1 expression. Pembrolizumab is limited to patients with PD-L1-positive tumours. Pembrolizumab has also shown improved efficacy compared with platinum doublet in patients who are treatment-naïve with tumours expressing PD-L1 in 50% of tumour cells or more and is approved by Health Canada.[4]

The Expert Committee of thoracic oncology experts feels that PD-L1 testing should be readily available at the time of diagnosis of both non-squamous and squamous NSCLC to allow for rapid initiation of pembrolizumab to eligible patients.[5] Health Canada approved pembrolizumab in the first-line setting in advanced NSCLC.

LUNG CANCER CANADA BELIEVES MOLECULAR TESTING IS KEY TO PATIENT MANAGEMENT AND SUGGESTS IMPROVED EFFORTS TO ENSURE AVAILABILITY AND ACCESS TO THIS TESTING.

Dr Zhaolin Xu

Professor, Department of Pathology, Faculty of Medicine at Dalhousie University

#HOPEINNAVIGATION

Jennifer Smylie was the lead Nurse and Clinical Manager of the Ages Cancer Assessment Clinic and Breast Health Centre at the Ottawa Hospital before retiring this year. Her clinics were responsible for intake of the four big volume cancers (lung, breast, colorectal, and prostate). Jennifer and an interprofessional team, patients and family members worked to refine the processes and streamline the assessment and diagnostic pathways in lung cancer. A number of initiatives were piloted over the last few years to improve access to diagnoses and move people from referral to treatment as quickly as possible.

"I started in this area over 10 years ago and it really requires a lot of coordination, there are just so many elements to consider. As we improved small pieces of the diagnostic pathway and celebrated the achievements, we knew that we needed to see the bigger picture to really make a difference in the care of lung cancer patients – we're really quite proud of what we accomplished in Ottawa."

The overall patient care experience and reducing time to treatment were the main goals of this pilot project. If a suspicious referral was received a one-day review and response became standard practice. For anyone who has ever waited for a test result, especially something as serious as lung cancer, a next day call from the hospital is everything. At our daily physician joint review, radiologists were able to read CT scans while thoracic surgeons ordered the appropriate biopsies and staging tests.

"Usually within one day a nurse on my team would call patients with information and a coordinated schedule of appointments to maximize their time at the hospital. It was not uncommon for the patients to be surprised with the rapid rate at which we were operating," says Jennifer.

The 'Navigation Day' was often the first step for any of the patients at the Ottawa Assessment clinic. It was an opportunity to meet their nurses and team, to answer questions and have appropriate tests or scans that were needed. Family and friends were an important element to this big day in a patient's journey, bringing comfort and strength. Patients responded extremely well and it reassured everyone that experts were managing their care closely.

Jennifer Smylie
Lead Nurse and Clinical Manager of the Ages Cancer Assessment Clinic and Breast Health Centre

ANDREA REDWAY

Faces of Lung Cancer Patient Story

Work took Andrea Redway to far off places. Having once lived in Asia, she and her husband were excited to finally bring their children along to a trip to Vietnam. Andrea is a lawyer with a special development focus around building and establishing fair and equitable law reform in developing countries. In a word, Andrea was dedicated - to her family and to the people she helped through work. It was on this major family trip that Andrea started to notice symptoms that were making her worry.

Upon arrival in Canada, she sought medical advice and since she had been travelling and had a persistent cough, the doctor suspected it could be early signs of pneumonia. Antibiotics didn't work and her extreme fatigue for several weeks sent her back to the doctor. Andrea and her family had just moved to Ottawa from Toronto, she was new to the city and didn't have a permanent family doctor. They sent her for tests and the respirologist gave her five possibilities, lung cancer was at the bottom of the list. She wasn't a smoker, ate healthy, and was incredibly active. Lung cancer was never what she expected though this is exactly what she had. It was very advanced, stage 4 with metastases in her brain, adrenal glands, bones, and early signs in her colon. Andrea's life was turned upside down in a matter of moments.

How would they tell their children who were 8 and 11 years old at the time? Andrea and her husband had to quickly come to terms with the diagnosis, so they could create the most effective treatment plan possible, and determine what was best for their children. Andrea's husband wanted them to know and she struggled to protect them from this devastating news, as long as possible. After telling their family and friends, they waited one week until after their daughter's 8th birthday to share the news. It was a painful time for everyone, the fear of losing someone, the fear of the unknown, it was too much to handle at times.

Andrea's strong support system moved in quickly and closely. Despite being in a new city, the network of love and hope began to flow in. Andrea had a chemo-radiation combination and her medical team had high hopes for a new immunotherapy drug that was not yet approved in Canada. She was able to get a first dose through the company's compassionate-use program before she experienced surgical complications that put her life in jeopardy. Andrea was strong and despite a situation that looked dire from all sides, her hope and support from family and friends brought her back.

The new immunotherapy had dramatic effects on the lung cancer shrinking the tumour by half and the other sites disappearing completely. Suddenly, in the midst of such uncertainty, her future was bright and the family could begin to move beyond the lung cancer that had taken over everyone's lives. It has been two years and Andrea's lung cancer has remained stable with no signs of growth, she is screened regularly.

"Even in the midst of a late-stage and incredibly dire diagnosis, you can never lose hope, I didn't. It is a different time to have lung cancer, research and new treatments are changing the future and creating survivors, and I am thankful to be one of them."

-Andrea Redway

FOSTERING THE NEXT GENERATION
#HOPEFORTHEFUTURE

It has been well documented that lung cancer is extremely underfunded and in fact, it receives less than 1 per cent of the nation's private cancer donations. Despite being such a misunderstood and underfunded cancer, there have been many partnerships and milestones to celebrate. Canadian researchers are part of exciting advances, including targeted drug therapies. Latest data suggests that both quality of life and longevity are improving with these new treatments. Other steps forward include the development of high-precision radiation, robotic surgery, other minimally invasive surgery techniques, and recent evidence supporting low-dose CT scans as an effective screening tool for the disease.

Each of these advances offers hope. For Canadians fighting a lung cancer diagnosis, it is often hope that spurs their strength to fight another day. It is also hope that drives so many important initiatives for the future.

Convoy For Hope – Atlantic is an example of how hope can inspire change. An annual one-day celebration of the trucking community and its partners, the Convoy For Hope's mission is to create disease awareness, promote early detection and raise funds in the fight against the top four cancers affecting Atlantic Canadians. The group is a partner in Canadian research and has been instrumental in the mass production and distribution of lung cancer support materials for patients and their families.

Lung Cancer Canada, the Convoy For Hope – Atlantic and the Beatrice Hunter Cancer Institute have partnered with two provincial associations, the New Brunswick Health Research Foundation and Dalhousie Cancer Awareness Research Society, to provide lung cancer focused research opportunities to students in eastern Canada. Together, they have funded two studentships. In New Brunswick, second year medical student Ethan Toumishey is the recipient of the award and undergraduate Shonara Gibson is the award recipient in Nova Scotia.

The spirit of hope doesn't stop with the Convoy For Hope. The family of late lung cancer patient, Betty Rice, firmly believes in the power of hope. When their matriarch passed from lung cancer a number of years ago, the Rice family felt a deep void. Despite her battle with the disease, she was known for her optimism and bright attitude. The Rice family did not want Betty's memory to fade and wanted to turn her death into something positive, something that could inspire others, in their own personal journeys.

The Betty Rice Award was established to promote lung cancer research by clinical fellows, or graduate students. The award is a symbol of Betty's strength and a beacon of achievement for the lung cancer research community. Each year, the award recipient receives $3,000 for research endeavors. Applications for the annual research award are reviewed by a

multi-disciplinary committee that will include Dr Kevin Rice, son of Betty Rice, a radiologist at UCLA and Dr Stephen Lam, Chair of the Betty Rice Award Review Committee, BC Cancer Research Center. The award recipient provides a brief presentation of their research at the annual Canadian Lung Cancer Conference.

“We created this award in honour of my mother. Education was always incredibly important to her and this recognition embodies her hope for future generations – where research and science will one day change the lung cancer narrative,” says Alana Korsunsky. “We know that hope works! When my mom was initially diagnosed, we knew very little about the disease. The progress that is being made to target treatments is a remarkable achievement that we need to celebrate.”

Lung Cancer Canada is beyond appreciative for partnerships such as those of The Convoy for Hope and The Betty Rice Award. It is endowments like these that further push our mission forward, making achievements in lung cancer more meaningful and promising than ever before and create greater hope for everyone touched by lung cancer.

THE FIGHT AGAINST LUNG CANCER IS A TEAM EFFORT AND LUNG CANCER CANADA THANKS THE COMMUNITY FOR THEIR SUPPORT.

ALANA KORSUNSKY

Faces of Lung Cancer Patient Story

It seems like it was yesterday, recalls Alana Korsunsky. Her mother Betty Rice passed away from lung cancer in 1999. Although just twenty years ago, the treatment and care landscape for someone diagnosed with lung cancer is starkly different from today. Betty was never a smoker. She was a healthy woman in her fifties, who had developed a cough. Who would have guessed that a cough was anything more than, a cough? Betty was diagnosed with small cell lung cancer and it was stage three. At the time, Betty received the best care possible, but this was before targeted treatments and immunotherapy. Following radiation, chemotherapy, and a lobectomy, Betty remained active and was the centre of it all at every family gathering.

Betty's daughter describes her mother as someone with warmth and who made connections with everyone she touched. Over the course of her three and a half year battle with lung cancer, you could count on Betty for two things - her positive attitude and zest for life and… her cooking. Whether it was her signature baked goods for the nurses at the hospital or every Friday night dinner spent with her family, Betty's love and connection for food always brought people together.

With so many achievements in life to celebrate, Betty always wanted the best for others. Her daughter tells a story of her mother sitting beside a young boy at the hospital, as they both received their chemo. Betty felt that she had an enriched life with a beautiful family, world travels and she wanted everyone battling cancer to have the same opportunities.

The Rice family lost an important member of their family from lung cancer. In loving memory of a beloved matriarch who inspired many, the family established the Betty Rice Award for Lung Cancer Research to promote lung cancer research in Canada. It was very important to Betty that patients be seen as people - not just a name on a file, but someone's mother, or son. Betty's name lives on, in the spirit of new research and making life's moment's count.

"After the initial shock of the situation, there was no more time for crying. No time to waste. As a family, we sprang into action and despite a serious prognosis, the family was driven by hope and optimism for the future. The small achievements were not to be underestimated. The idea of taking one day at a time brought comfort, setting reachable milestones allowed me to gain strength and momentum. My twins second birthday was a goal. Then, being with my family for another holiday season… and the list went on."

- Dr Marcelo Kremenchutzky

COLLABORATION IS A CANADIAN ACHIEVEMENT. THE WORK OF OUR PATIENTS, SUPPORTERS, NURSES, PHYSICIANS, AND RESEARCHERS ADVANCE THE FIGHT AND BUILD US HOPE.

Betty Rice
British Columbia

PART 3

A WORK IN PROGRESS

WHO PAYS FOR CANCER?
#FUNDINGHOPE

Lung Cancer Canada believes that treatment innovation drives hope for patients, their families, and the medical community. Years ago, there was little to offer in terms of treatment, but thankfully today it is a very different story. Innovation is changing everything and new treatments approved in Canada mean that patients are living longer with advanced disease and overall survival rates are on an upward trajectory.

"The last few years have seen so many improvements in so many areas of lung cancer. Screening has the potential to save thousands of lives, and scientific discovery of new lung cancer subtypes with matching therapies has revolutionized outcomes for many patients. The emergence of immunotherapy in many areas of lung cancer provides well tolerated and effective therapy for many" says Dr Paul Wheatley-Price. "We cannot ignore what promise these treatments can provide, and we must now focus on expediting the processes needed so we can deliver this hope into the hands of patients faster."

Each year, Lung Cancer Canada evaluates lung cancer drug approvals in Canada, compared to what is happening in the United States. Of particular note, the comparison provides a glimpse into how long Canadian lung cancer patients wait to access the same life-saving medicines. The approval process in the United States acts as a baseline to compare drug approval timing since the FDA is often the first regulatory body in the world to approve new treatments. Regulatory authorities need to be responsible with public money, but based on the data, Canada needs to modernize the system for patients to provide faster and more robust access to these life-changing treatments. Hope is within reach and we should never deny a patient something that has potentially substantial benefits.

Table 2 - Date of FDA approval to Health Canada approval

DRUG Generic name (brand name)	INDICATION	FDA APPROVAL DATE	HEALTH CANADA APPROVAL DATE	pCODR Status	Phase Data Used
afatinib (Giotrif®)	For the first line treatment of epidermal growth factor receptor (EGFR) mutation positive, advanced nonsmall cell lung cancer (NSCLC) patients	July 12, 2013	**November 1, 2013**	Final Recommendation May 2, 2014: Recommended pending cost effectiveness	3
alectinib (Alecensaro®) 2nd line	As monotherapy for the treatment of patients with anaplastic lymphoma kinase (ALK) positive, locally advanced (not amenable to curative therapy) or metastatic NSCLC who have progressed on or are intolerant to crizotinib	December 11, 2015	**September 29, 2016**	Final Recommendation May 29, 2018: Recommended pending cost effectiveness	3
alectinib (Alecensaro®) 1st line	For the first-line treatment of patients with anaplastic lymphoma kinase (ALK)-positive, locally advanced (not amenable to curative therapy) or metastatic non-small cell lung cancer (NSCLC).	November 6, 2017	**June 11, 2018**	Initial Recommendation: Pending	3
atezolizumab (Tecentriq)	For the treatment of adult patients with locally advanced or metastatic non-small cell lung cancer (NSCLC) with progression on or after platinum-based chemotherapy.	October 18, 2016	**April 6, 2018**	Initial Recommendation: Recommended, pending cost effectiveness	2 + 3
brigatinib (Alunbrig)	For the treatment of adult patients with anaplastic lymphoma kinase (ALK)-positive metastatic non–small cell lung cancer (NSCLC) who have progressed on or who were intolerant to an ALK inhibitor (crizotinib).	April 28, 2017	**July 25, 2017**	Not Submitted	2
ceritinib (Zykadia®) 2nd line	For treatment as monotherapy in patients with ALK positive locally advanced (not amenable to curative therapy) or metastatic NSCLC who have progressed on or who were intolerant to crizotinib	April 29, 2014	**March 23, 2015**	Final Recommendation December 3, 2015: Not Recommended	2
ceritinib (Zykadia®) Resubmission 2nd line	For treatment as monotherapy in patients with ALK positive locally advanced (not amenable to curative therapy) or metastatic NSCLC who have progressed on or who were intolerant to crizotinib	April 29, 2014	**March 27, 2015**	Final Recommendation March 21, 2017: Recommended, pending cost effectiveness	3

As of October 22, 2018

Continued... **Table 2 – Date of FDA approval to Health Canada approval**

DRUG Generic name (brand name)	INDICATION	FDA APPROVAL DATE	HEALTH CANADA APPROVAL DATE	pCODR Status	Phase Data Used
crizotinib (Xalkori®) 2nd line	As monotherapy for use in patients with ALK positive advanced (not amenable to curative therapy) or metastatic NSCLC	August 6, 2011	**April 25, 2012**	Final Recommendation October 4, 2012: Not Recommended	1/2
crizotinib (Xalkori®) Resubmission 2nd line	As monotherapy for use in patients with ALK positive advanced (not amenable to curative therapy) or metastatic NSCLC	August 26, 2011	**April 25, 2012**	Final Recommendation May 2, 2013: Recommended, pending cost effectiveness	3
crizotinib (Xalkori®) Resubmission 1st line	As monotherapy for use in patients with ALK positive advanced (not amenable to curative therapy) or metastatic NSCLC	August 26, 2011	**April 25, 2012**	Final Recommendation July 21, 2015: Recommended, pending cost effectiveness	3
crizotinib (Xalkori®) ROS-1	Indicated for the treatment of patients with metastatic NSCLC whose tumors are ROS1-positive	March 11, 2016	**August 27, 2017**	Not submitted	1/2
dabrafenib (Tafinlar®) + trametinib (Mekinist®) 2nd line	In combination for the treatment of patients with advanced NSCLC with a BRAF V600 mutation and who have been previously treated with chemotherapy	June 22, 2017 (approved in any line of therapy)	**May 16, 2017 [approved only after failure of prior chemotherapy]**	Initial Recommendation: Not recommended	2
nivolumab (Opdivo®) 2nd line	For the treatment of patients with advanced or metastatic NSCLC who progressed on or after chemotherapy	March 4, 2015	**February 26, 2016**	Final Recommendation June 3, 2016: Recommended and publicly funded in most provinces	3
osimertinib (Tagrisso®) 2nd line	For the treatment of patients with locally advanced or metastatic EGFR T790M mutation positive NSCLC who have progressed on or after EGFR tyrosine kinase inhibitor (TKI) therapy	November 13, 2015	**July 5, 2016**	Final Recommendation May 4, 2017: Recommended pending cost effectiveness	2 (initial NOC/c based on phase 2 data) pCODR submission based on phase 3 data

As of October 22, 2018

Continued... **Table 2 – Date of FDA approval to Health Canada approval**

DRUG Generic name (brand name)	INDICATION	FDA APPROVAL DATE	HEALTH CANADA APPROVAL DATE	pCODR Status	Phase Data Used
osimertinib (Tagrisso®) 1st line	For the first-line treatment of patients with locally advanced or metastatic NSCLC whose tumours have EGFR mutations	April 18, 2018	**July 10, 2018**	Initial Recommendation: Pending	3
pembrolizumab (Keytruda®) 2nd line	For the treatment of patients with metastatic NSCLC whose tumours express PD-L1 (as determined by a validated test) and who have disease progression on or after platinum-containing chemotherapy	September 4 2014	**April 15, 2016**	Final Recommendation November 3, 2016: Recommended and funded in some provinces	2/3
pembrolizumab (Keytruda®) 1st line	For previously untreated patients with metastatic NSCLC whose tumours express PD-L1 and who do not harbour a sensitizing EGFR mutation or ALK translocation	October 24 2016	**July 12, 2017**	Final Recommendation August 23, 2017: Recommended and funded in some provinces	3
pemetrexed (Alimta®) 2nd line	For maintenance following first-line pemetrexed and cisplatin for advanced or metastatic non-squamous NSCLC	July 2, 2009	**May 9, 2013**	Final Recommendation November 19, 2013: Recommended, pending cost effectiveness	3
ramucirumab (Cyramza®) 2nd line	For the treatment of patients with advanced or metastatic NSCLC who progressed on or after platinum-based chemotherapy in combination with docetaxel	April 21, 2014	**July 16, 2015**	Closed, not submitted	3
durvalumab (IMFINZI®) Stage 3B unresectable NSCLC	NOC/c For the treatment of patients with locally advanced, unresectable non-small cell lung cancer (NSCLC) whose disease has not progressed following platinum-based chemoradiation therapy (CRT).	February 16, 2018	**May 4, 2018**	Submitted to pCODR October 5, 2018	3

As of October 22, 2018

ALK = anaplastic lymphoma kinase
CNS = central nervous system
EGFR = epidermal growth factor receptor
NSCLC = non-small cell lung cancer
TKI = tyrosine kinase inhibitor

Table 3 – Date of Provincial Coverage

Drug Name	BC	AB	SK	MB	ON	QC	NS	NB	NL	PEI
afatinib	01-Oct-14	30-Sep-14	15-Sep-14	16-Oct-14	19-Aug-14	04-May-16	29-Dec-14	11-Sep-14	01-Jun-15	24-Oct-16
alectinib	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded
atezolizimuab	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded
ceritinib	01-Sep-18	Not Funded	15-Aug-18	19-Jul-18	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded
crizotinib (1st line)	01-Dec-15	18-Dec-15	28-Dec-15	18-Jan-16	04-Dec-15	08-Feb-16	02-May-16	12-Apr-16	01-Feb-16	01-Aug-18
crizotinib (2nd line)	01-Mar-14	31-Oct-13	03-Oct-13	17-Oct-13	01-Oct-13	03-Feb-14	01-Dec-13	08-Nov-13	01-Apr-14	08-Apr-14
dabrafenib+ trametinib	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded
durvalumab	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded
nivolumab	01-Mar-17	03-Apr-17	23-Mar-17	13-Mar-17	21-Mar-17	22-Mar-17	01-Apr-17	02-May-17	03-Aug-17	Not Funded
osimertinib (2nd line)	01-Oct-18	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded
pembrolizumab (1st line)	01-Feb-18	16-Feb-18	07-Dec-17	15-Dec-17	17-Jan-18	15-Nov-17	24-May-18	02-May-18	30-May-18	Not Funded
pembrolizumab (2nd line)	01-Feb-18	16-Feb-18	15-Dec-17	07-Dec-17	17-Jan-18	15-Nov-17	24-May-18	02-May-18	30-May-18	Not Funded
pemetrexed	01-May-14	01-May-14	03-Mar-14	01-Jun-14	01-Apr-14	01-Oct-14	01-Apr-14	01-Sep-14	01-Apr-14	23-Nov-15

As of October 22, 2018

Table 4 - Number of days from date of FDA approval to date of provincial coverage

DRUG Generic name	FDA APPROVAL DATE	BC	AB	SK	MB	ON	QC	NS	NB	NL	PEI
afatinib	July 12, 2013	446	445	430	461	403	1027	535	426	719	1200
alectinib (1st line)	November 6, 2017	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded
alectinib (2nd line)	December 11, 2015	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded
atezolizimuab	October 18, 2016	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded
ceritinib	April 29, 2014	1586	Not Funded	1569	1542	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded
crizotinib (1st line)	August 26, 2011	1558	1575	1585	1606	1561	1627	1711	1691	1620	2532
crizotinib (2nd line)	August 6, 2011	938	817	789	803	787	912	848	825	969	976
dabrafenib+ trametinb	June 22, 2017	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded
durvalumab	February 16, 2018	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded
nivolumab (2nd line)	March 4, 2015	728	761	750	740	748	749	759	790	883	Not Funded
osimertinib (1st line)	April 18, 2018	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded
osimertinib (2nd line)	November 13, 2015	1053	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded	Not Funded
pembrolizumab (1st line)	October 24, 2016	465	480	409	417	450	387	577	555	583	Not Funded
pembrolizumab (2nd line)	September 4, 2014	1246	1261	1198	1190	1231	1168	1358	1336	1364	Not Funded
pemetrexed (2nd line)	July 2, 2009	1764	1764	1705	1795	1734	1917	1734	1887	1734	2335

As of October 22, 2018

DR RAYMOND LAFLAMME

Faces of Lung Cancer Patient Story

As a well-respected scientist and founding director of the Institute of Quantum Computing at the University of Waterloo, Dr Raymond Laflamme had no problem breaking down complex problems. It was in 2016 when Raymond was diagnosed with stage 3 lung cancer, which would thrust him into an environment that was complicated, unpredictable and completely new. He rationalized the shortness of breath he was experiencing as spring allergies, he wasn't a smoker, he didn't fit the profile for lung cancer. It was his wife that pushed him to see the doctor and get a referral to a specialist. He remarks, "she saved my life by asking the right questions at that appointment".

Their children were adults and not living in the family home at the time. This was a diagnosis that had threatened their family and the support system for Raymond quickly began to build. It was another unexpected revelation for him, just how important a system of support and hope is.

Navigating the Canadian healthcare system with a cancer diagnosis is a terrifying thing and Raymond and his wife needed help to understand how to decipher the complex pathway for care. Raymond was fortunate to have a brother and sister-in-law who were medical doctors – this proved a major privilege to move through the cancer and understand what to do next. They often think about how that situation could have been different had they not had the personalized medical guidance from family. How do other Canadians do this alone, they'd ask?

Many courses of radiation and chemo were able to shrink his tumour and he was eligible for surgery. It was successful and the hope that they held onto so strongly was helping them through this extremely challenging time in their lives. Work was always a key focus for Raymond and he had remarkable achievements to show from it. Even while battling the lung cancer, he had to continue with the work he had dedicated his life to. This accelerated his optimism and at times the cancer was not dominating his thoughts.

It has been two years and Raymond is now cancer-free. He has a new perspective and is happy to be alive. He is driven to support the lung cancer community through patient awareness, advocacy, and fundraising initiatives. Most recently, Raymond finished a 125km bike ride to raise money for the local cancer centre in Waterloo, this is an achievement of hope for him.

"No one person can beat lung cancer alone. A positive support system can make a world of difference when faced with a traumatic diagnosis. Reach out and look for that support, it is there in so many forms, so accept it."

-Dr Raymond Laflamme

LUNG CANCER CANADA BELIEVES IN THE POWER OF HOPE, RESEARCH AND ADVOCACY; AND THAT GREAT ACHIEVEMENTS WILL COME WITH GREAT PARTNERSHIPS.

Dr Raymond Laflamme
Waterloo, ON

PART 4

CONCLUSION

A MESSAGE FROM LUNG CANCER CANADA
#DRIVINGHOPE

We recognize the progress and celebrate our achievements that have propelled us into a new world of lung cancer. Canada continues to lead in so many ways and as the national voice for patients, it is Lung Cancer Canada's duty to push us to do more, since there is so much to be done. It is a fact that survivorship has improved dramatically in the past decade and research is creating targeted treatment pathways and diagnostics never imagined. With so much progress, we cannot stop as there are major hurdles yet to overcome in terms of stigma, approval times for innovative medicines and access to screening and life-saving medicines for all Canadians. As a community with hope in hand, we need to constantly drive important discussions that can save and extend life for those with lung cancer – it is our duty!

Stigma still circles the lung cancer narrative, despite story after story of Canadians who never smoked being diagnosed with lung cancer. Lung cancer is not simply a smoking disease and breaking down that notion can save lives. Those who have lungs can get lung cancer.

Diagnostics and molecular testing are a main pillar of hope for all of us. Tests that target treatments save time and ultimately improve a patient's chance of survival. It is unfair for any Canadian not to have access to consistent care that can not only impact the physical disease but also quality of life while moving through the cancer stages. Nurse navigation programs have excelled and proven that an improved patient experience benefits both patients and the medical team alike. Programs like these combined with the latest advancements in treatment mean hope.

"For the lung cancer community, it is not in our nature to be complacent with the disease," says Dr Paul Wheatley-Price. "There is a relentless spirit that needs to be acknowledged since it has brought us to this landmark moment in lung cancer where we can see such optimism in the future."

Clinical updates at the World Lung Conference that was held in Toronto this past fall have fueled hope for so many. Data clearly shows how innovative treatments are saving lives, providing a glimpse into the new frontier of precision-based medicine. The challenge though is when there is compelling data on new drugs, but they are not yet approved in Canada and therefore creates a false sense of hope. Dr Wheatley-Price comments, "access is a key area for Lung Cancer Canada and we will continue to push the regulatory agencies in our effort to improve the lives of Canadians with lung cancer. The hope is there and together we can make changes."

The voice of the lung cancer collective needs to be loud. Why? As the largest cancer killer in Canada, it is still the most underfunded in so many areas. The division of resources, attention, and even compassion are not aligned with the severity of this disease. Advancing the discussion around the key lung cancer issues in Canada to a new altitude benefits everyone – there is no loser when you beat lung cancer!

"My lung cancer journey presented me with a unique opportunity. After providing care for over 30 years, I could now experience first-hand, the true patient experience. First, it was about the stigma of lung cancer. I understood the role stigma plays in the challenge for lung cancer patients, but experiencing it was a very different story. I felt the need to justify my disease as a non-smoker who didn't fit any of the statistics. Little compassion. A constant need to explain the situation where I felt kindness should supersede any pre-conceived notions about lung cancer. It was unexpected for me."

- Dr Marcelo Kremenchutzky

PART 5

WHO WE ARE

LUNG CANCER CANADA
#LCC

Lung Cancer Canada is a national charitable organization that serves as **Canada's leading resource for lung cancer education, patient support, research and advocacy.** Based in Toronto, Ontario, Lung Cancer Canada has a wide reach that includes both regional and pan-Canadian initiatives. Lung Cancer Canada is a member of the **Global Lung Cancer Coalition** and is the **only organization in Canada focused exclusively on lung cancer.**

Lung Cancer Canada's mission is three-fold: **1)** to **increase public awareness of lung cancer**, 2) to **support** and **advocate** for lung cancer patients and their families, and 3) to provide **educational resources** to patients, family members, healthcare professionals, and the general public.

Lung Cancer Canada also offers a **variety of resources** to educate and support patients and their families. These include: **1)** our **website**, which serves as a trustworthy and timely source of lung cancer information and news; 2) our **newsletter**, Lung Cancer Connection, which explores topics of interest to the entire lung cancer community; 3) our **Resource Library**, which allows patients and their families to access specialized information; and 4) our **social media presence**, as well as the **discussion forums** and **patient stories** on our website, which offer lung cancer patients and families the opportunity to **connect and offer support to one another**.

"Many of us are under the impression that every day should just be good, when this is not the case at all. Life can be extraordinary, but we must anticipate and learn from the challenges, this is where we find the strength and hope to take it on."

- Dr Marcelo Kremenchutzky

AS A TIRELESS ADVOCATE FOR THE LUNG CANCER COMMUNITY, DR MARCELO KREMENCHUTZKY CHANGED SO MANY LIVES. BEFORE THE COMPLETION OF THE 2018 FACES OF LUNG CANCER REPORT, DR KREMENCHUTZKY'S PASSED AWAY. HIS INSPIRING WORDS AND PERSPECTIVES AS A PATIENT AND A PHYSICIAN WILL CONTINUE TO CHANGE THE LUNG CANCER NARRATIVE AND IMPROVE THE SITUATION FOR SO MANY CANADIANS TOUCHED BY LUNG CANCER.

WWW.LUNGCANCERCANADA.CA

REFERENCES

1. http://www.cancer.ca/~/media/cancer.ca/CW/cancer%20information/cancer%20101/Canadian%20cancer%20statistics/Canadian-Cancer-Statistics-2018-EN.pdf?la=en

2. http://www.cancer.ca/en/cancer-information/cancer-type/lung/statistics/?region=on

3. Antonia 2017, et al; (NCT02125461) A Global Study to Assess the Effects of MEDI4736 Following Concurrent Chemoradiation in Patients With Stage III Unresectable Non-Small Cell Lung Cancer (PACIFIC)

4. Kerr KM, Nicolson MC. Non-small cell lung cancer, PD-L1, and the pathologist. Arch Pathol Lab Med. 2016;140:249–54. doi: 10.5858/arpa.2015-0303-SA.

5. Reck M, Rodríguez-Abreu D, Robinson AG, et al. Pembrolizumab versus chemotherapy for PD-L1–positive non–small-cell lung cancer. N Engl J Med. 2016;375:1823–33. doi: 10.1056/NEJMoa1606774

PHOTO CREDITS

Dr Marcelo Kremenchutzky with his family – Heather MacEachern Tarasick (HRM Photography)
Lorne Cochrane – Darwin Mulligan Photography
Roz Brodsky – Howard Brodsky
Anne Marie Cerato with her nurse Nicole Perera-Low – Christina Amaral
Andrea Redway – Joelle Perrier
Jennifer McGrady – Tom McGrady
Raymond LaFlamme – Institute of Quantum Computing (IQC)
Elder Elmer Courchene – Courtesy of the Assembly of First Nations
Heather Hogan – Meg King
Diane Colton – Paula Hager

LUNG CANCER CANADA BOARD OF DIRECTORS

President
Dr Paul Wheatley-Price
Medical Oncologist
Ottawa Hospital Cancer Centre
Ottawa, ON

Treasurer
Maria Amaral
Caregiver Advocate
Toronto, ON

Secretary
Sumbul Ali
Sun Life Assurance Co.
Toronto, ON

DIRECTORS
Roz Brodsky
Lung Cancer Survivor
Patient Advocate and
Dog Rescuer
Thornhill, ON

Anne Marie Cerato
Lung Cancer Survivor
Patient Advocate
Toronto, ON

Dr Cheryl Ho
Medical Oncologist
BC Cancer Agency
Vancouver, BC

Dr Rosalyn Juergens
Medical Oncologist
Juravinski Cancer Centre
Hamilton, ON

Dr Natasha Leighl
Medical Oncologist
Princess Margaret Hospital
Toronto, ON

Lorraine Martelli
Nurse Practitioner
Hamilton Health Sciences
Hamilton, ON

Elizabeth Moreau
Caregiver Advocate
Ottawa, ON

Joel Rubinovich
Chartered Accountant
Toronto, ON

Dr Zhaolin Xu
Pathologist
QEII Health Sciences Centre
Halifax, NS

MEDICAL ADVISORY COMMITTEE

Chair
Dr Rosalyn Juergens
Medical Oncologist
Juravinski Cancer Centre

Members
Dr Normand Blais
Medical Oncologist
Hôpital Notre Dame du CHUM

Dr Nicole Bouchard
Respirologist
Sherbrooke University Hospital

Dr Quincy Chu
Medical Oncologist
Cross Cancer Institute

Dr David Dawe
Medical Oncologist
CancerCare Manitoba

Dr Cheryl Ho
Medical Oncologist
BC Cancer Agency

Dr Diana Ionescu
Pathologist
BC Cancer Agency

Dr Stephen Lam
Respirologist
BC Cancer Agency

Dr Natasha Leighl
Medical Oncologist
Princess Margaret Hospital

Dr Donna Maziak
Thoracic Surgeon
The Ottawa Hospital

Dr David Palma
Medical Oncologist
London Health Sciences Centre

Dr Jeffrey Rothenstein
Medical Oncologist
Lakeridge Health

Dr Stephanie Snow
Medical Oncologist
QEII Health Sciences Centre

Dr Yee Ung
Radiation Oncologist
Sunnybrook Health Sciences Centre

Dr Paul Wheatley-Price
Medical Oncologist
Ottawa Hospital Cancer Centre

Dr Zhaolin Xu
Pathologist
QEII Health Sciences Centre

Dr Sunil Yadav
Medical Oncologist
Saskatoon Cancer Centre

HONORARY BOARD MEMBERS

Catherine Black
Dr Gail E Darling
Dr Peter Ellis
Dr WK (Bill) Evans
Dr Margaret Fitch
Ralph Gouda (Founder)
Dr Michael Johnston
Peter F MacKenzie
Morton Sacks
Dr Frances Shepherd
Dr Yee Ung (Founder)
EK (Ted) Weir
Magdalene Winterhoff (Founder)

ACKNOWLEDGMENTS

Lung Cancer Canada would like to thank the Medical Advisory Committee and other experts for their support in the creation of this report. Special thanks to Dr Stephen Lam, Dr Zhaolin Xu and Dr Paul Wheatley-Price for their knowledge and input. A very special thank you to Alana Korsunsky for sharing Betty Rice's story. To Raymond LaFlamme, Andrea Redway, Elder Elmer Courchene and Jennifer Smylie thank you for sharing your stories. To the family of Dr Marcelo Kremenchutzky thank you for sharing him with us. It is for you that we continue the fight!

LUNG CANCER CANADA

AWARENESS. SUPPORT. EDUCATION.

330 Bay St., Suite 310,
Toronto, Ontario, M5H 2S8

416.785.3439 (Toronto)
1.888.445.4403 (Toll free)

www.lungcancercanada.ca
info@lungcancercanada.ca

Charitable Registration Number: 872775119 RR0001

Lung Cancer Canada is a national charity and the only one dedicated solely to lung cancer. It relies on donations to offer programs and services, such as this booklet, to patients and their families.

Donations are greatly appreciated and a tax receipt is issued for a donation of $20 or more. Donations can be made online at **www.lungcancercanada.ca**, or by calling the numbers above.

This report was made possible through the generous support of Astra Zeneca Canada, Boehringer Ingelheim Canada, Bristol-Myers Squibb Canada, Ethan Pigott, Merck Canada, Pfizer Oncology / EMD Serono, Roche Canada, Abbvie and Titan Creative. Without your help, this project and endeavor would not have been possible. THANK YOU!

LUNG CANCER CANADA

AWARENESS. SUPPORT. EDUCATION.

330 Bay St., Suite 310,
Toronto, Ontario, M5H 2S8
416.785.3439 | **1.888.445.4403**
www.lungcancercanada.ca