ADVANCEMENTS IN **CANCER CARE**

TOGETHER WE ARE **STRONGER THAN CANCER**

Our understanding of cancer is improving every day. We have more effective prevention strategies, earlier detection tests, better treatments, and more support for people living with and beyond cancer. But there's so much more to do. We know that one in two Canadians are expected to be diagnosed with cancer in their lifetime and the number of cancer cases is predicted to be 80 percent greater in 2030 than it was in 2005. We need to take control of cancer now.

Andrea Seale
CEO,
Canadian Cancer Society

In Canada, there are thousands of talented researchers and caring medical professionals. There are health advocates, educators, and volunteers who provide essential support and fundraise for cancer care from coast to coast. And there are donors to organizations like the Canadian Cancer Society and others — people who enable the progress to happen. This collective is united by one common belief: we can take control of cancer and help Canadians live their lives to the fullest.

We know from experience that when we bring together the intellect, commitment, and bold ideas from this collective, we can make incredible strides. We have a responsibility to take a leadership role, uniting together so that the most impactful work is benefitting the most people as quickly and effectively as possible. By working together, we can save and improve more lives. Together, we are stronger than cancer.

> "We know that one in two Canadians are expected to be diagnosed with cancer in their lifetime.

Andrea Seale

Supported by Canadian Cancer Society

CANADIAN SCIENTISTS MADE A REVOLUTIONARY BREAKTHROUGH THAT SUCCESSFULLY TARGETS CANCER

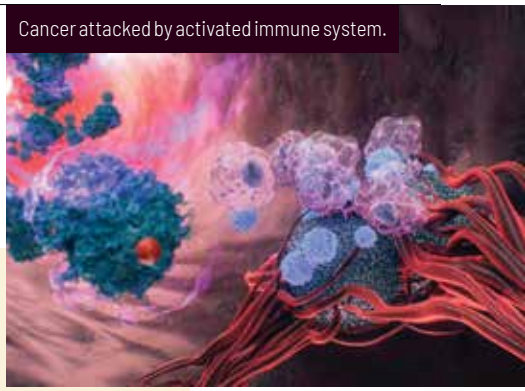
Cancer is the leading cause of death in Canada. In the past year, almost a quarter of a million new cases of cancer have been diagnosed and more than 80,000 people have died of the disease. The statistics are grim but there's hope. And while surgery, radiation, and chemotherapy offer management options for local tumours, these multimodality therapies are indolent to spread neoplasms and metastases.

Dr. Riam Shammaa
Founder & CEO,
IntelliStem Technologies

The notion of developing therapeutic vaccines against cancer is a very appealing concept that eluded scientists for years.

The scientific team of IntelliStem Technologies, a Toronto-based biotechnology company, has genetically engineered stem cells to attack cancer cells. In a recent study, IntelliStem Technologies researchers introduced those cells, named Super Sentinel Cells (SSCs), to animals' cancer cells outside their bodies. In doing so, they programmed the SSCs to find those specific cancer cells. The programmed cells were then separated from the cancer cells and injected into the animals. These SSCs showed the animals' immune systems where to find, and destroy, the cancerous cells. The success rate was unprecedented: at least 80 percent of animals who underwent this procedure survived, whereas less than 20 percent of the animals treated with dendritic cells survived.

"It was one of the happiest moments of my life," says Dr. Riam Shammaa, Founder and CEO of IntelliStem Technologies. "This is a major milestone in the history of medicine and genetic engineering. To our knowledge, this is the first time that humans have genetically engineered cells that function better than what Mother Nature gave us. The SSCs were able to train against every cancer we threw at them." Dr. Shammaa explains that, because SSCs can learn the signals and antigens of any cancerous cell, they have the capacity to attack any kind of cancer, from lung and skin cancers to prostate cancer and lymphoma.



Cancer attacked by activated immune system.

Dr. Shammaa emphasizes that one of IntelliStem's main goals is accessibility for all patients: "Our work isn't a science fiction project that's anticipated to come to fruition in the next 20 years, it's a reality and we're working hard to get the therapy to patients within the next five years."

Read the full article at **healthinsight.ca**.

Sponsored by INTELLISTEM

CURE FOUNDATION: POWERING THE FIGHT AGAINST BREAST CANCER SINCE 1997

For close to 25 years, the CURE Foundation has empowered Canadians to make a real difference in the fight against breast cancer by investing in programs for prevention and early detection, improving treatment, and supporting patients and their families.

Its flagship fundraising event, National Denim Day, mobilizes Canadians in their workplace or school to wear jeans and the pink ribbon and to donate to the Foundation on the Tuesday after Mother's Day. This year's event takes place on May 12, with plans to include over 400,000 participants across the country.

CURE Foundation founder Diane Proulx-Guerrera and husband Salvatore Guerrera.

Organizations can still sign up by contacting CURE and ordering their participation kit.

CURE was founded by breast cancer survivor Diane Proulx-Guerrera, who found a lump in her breast while in the shower. She was 38 years old, with two children. After going through surgery, radiation, and chemotherapy, she was declared in remission and she and her family decided to create something concrete that would enable them to give back and bring hope to those impacted by breast cancer. In 2018, she and her husband, Salvatore Guerrera, were appointed members of the Order of Canada.

CURE's work is targeted in three main areas: prevention, treatment, and support. It encourages women to take their breast health into their own hands by checking themselves regularly and invests in breast cancer detection equipment in hospital centres across Canada. The Foundation funds innovative research aimed at improving treatment, and supports community programs and services for patients and families living with the impacts of a breast cancer diagnosis.

Robyn Dalton,
CURE Foundation Executive Director

To learn more or to sign up your organization for National Denim Day, visit **curefoundation.com**.

Sponsored by CURE

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TARGETED CANCER VACCINES: ONE OF MANY MADE-IN-CANADA INNOVATIONS

In our fast-paced world, few things are advancing as rapidly as cancer research, and some of the most innovative science in the field is being done right here in Canada. At The Ottawa Hospital, advances in personalized treatments, targeted therapies, and immuno-oncology in particular are making major waves in the global cancer community.

The Ottawa Hospital's Director of Cancer Research, Dr. Rebecca Auer, is a practicing cancer surgeon and inspired research scientist. Having studied at the University of Toronto and Queen's University in Kingston, Dr. Auer pursued a fellowship in surgical oncology at the Memorial Sloan Kettering Cancer Center in New York before being recruited back to join, and eventually lead, The Ottawa Hospital's cutting-edge cancer research team. Today, she's focused on bringing diverse, novel treatments safely and efficiently from laboratory to bedside.

Dr. Rebecca Auer
Director of Cancer Research, The Ottawa Hospital

Pioneering new ideas and breathing life back into old ones

"There have been a number of major breakthroughs in cancer," says Dr. Auer, who's also an associate professor at the University of Ottawa. "Some of the biggest advances have been in biotherapeutics, particularly engineering viruses and cells as tools to kill cancer. This research is intrinsically connected with immunotherapy because these techniques are heavily focused on recruiting the patient's immune system to help fight the cancer."

The idea of using the immune system to fight cancer, or even vaccinating against cancer itself, isn't new. Our immune system is our most valuable ally in the pursuit of good health, and cancer researchers have been seeking to harness that power since the early 20th century. But, in practice, the idea has faced one fundamental hurdle for decades. "The difference between cancers and viruses, from the perspective of your immune system, is that cancers ultimately come from within you," says Dr. Auer. "Our immune system learns very early on not to attack our own tissue, which is challenging because cancer cells look a lot like normal tissue."

From an engineered virus to a personalized cancer vaccine

It was while testing a novel virus in mice — a virus that had been engineered to selectively kill cancer cells while leaving normal cells intact — that Dr. Auer's team noticed an immunogenic response. Once the virus started infecting the cancer cells, the immune system was getting in on the action to finish the job. "Further experiments confirmed that this acts as a lasting vaccine against that specific cancer," says Dr. Auer. "As a surgeon, my first thought was that I take out tumours all the time. Why couldn't I take out a tumour, allow the virus to replicate in the cancer cells, and then give that back to the patient as an infected cell vaccine?"

Now, with the newest version of the therapy, that's exactly what Dr. Auer and her team aim to do. By combining the engineered virus with the patient's own cancer cells, the vaccine acts as a triple threat. First it kills the cancer cells directly, then it boosts the immune system's natural response with a protein called interleukin-12, before finally training the immune system to recognize and fight the patient's specific cancer should it try to return in the future.

> "Some of the biggest advances have been in biotherapeutics, particularly engineering viruses and cells as tools to kill cancer.

Canadian research saves Canadian lives

The first human trials of the infected cell vaccine are expected by 2021, beginning with treatments for leukemia and other blood cancers, as well as cancers that spread in the abdominal cavity. It behooves and benefits Canadians to diligently foster a system where these advances and clinical trials continue to take place here within our borders.

"Having this research done in Canadian centres like The Ottawa Hospital gives Canadian patients access to novel therapeutics years earlier than they would have had them otherwise," says Dr. Auer. "It also gives our clinicians an opportunity to understand and gain experience with these treatments well before they become the standard of care. And finally, it supports the innovative work of our amazing Canadian scientists who are international leaders in the discovery of novel biotherapies."

D.F. McCourt

PROBING THE PROSTATE: WHAT EVERYONE SHOULD KNOW ABOUT **THE MOST COMMONLY DIAGNOSED CANCER IN CANADIAN MEN**

Prostate cancer is the most commonly diagnosed cancer among men in Canada. In fact, as many as one in nine men will be affected in their lifetime in North America. The good news? Prostate cancer mortality has decreased over the last two decades due to advances in screening, diagnosis, and treatment options.

There are several risk factors associated with the development of prostate cancer, including age, family history, high-fat diets, and being of African American descent. Detecting the disease early, identifying and monitoring men at risk, and providing the appropriate level of observation for indolent disease or treatment for more aggressive forms are key factors in reducing the impact of prostate cancer.

Both disease awareness and the use of diagnostic tools have contributed to improved intervention and more accurate detection. Prostate cancer can be present for many years before symptoms appear, so it's important to have tools to both detect the disease and understand how aggressive it is before determining next steps.

Prostate-specific antigen (PSA) testing is an important tool used for diagnosis and disease monitoring. It's often used in conjunction with a digital rectal exam (or DRE). In order to confirm diagnosis, the gold standard is to perform a prostate biopsy and examine cells for signs of cancer.

Advancements in diagnostic tools lead to better outcomes

What most people may not be aware of is the array of other tools already used to provide further information at various stages. Multiparametric MRI is an imaging technology that's increasingly used to support diagnostic decisions. New prostate cancer biomarker tests like SelectMDx help health care practitioners determine which men require invasive diagnostic procedures like a biopsy. For any of the tests mentioned, men should have a conversation with their physician about what makes sense to include for their individual needs.

According to Dr. Alexandre Zlotta, director of Uro-Oncology at Mount Sinai Hospital, "Pinpointing men at risk of harbouring an aggressive form of the disease and minimizing the number of biopsies in men with the indolent form is an important unmet need. We are now moving away from a "one size fits all" toward a more personalized, smarter prostate screening approach, keeping the benefits while reducing the harms."

The last two decades have seen major progress in outcomes for prostate cancer patients. Advances in molecular diagnostics, imaging, artificial intelligence, and other tools continue to be developed, and the next decade holds promise to continue this trend.

Read the full article at **healthinsight.ca**.

Sponsored by LifeLabs

ADVANCEMENT IN **SKIN CANCER**

The Save Your Skin Foundation is a national patient-led not-for-profit organization dedicated to the fight against all skin cancers.

Natalie Richardson
Managing Director, Save Your Skin Foundation

MP ***What's the most significant advancement in the last year?***

NR Previously, patients had to wait until their melanoma had advanced to stage 4 to be eligible for immuno-oncology and targeted therapies. Now, provinces have started to approve these treatments for patients at an earlier stage.

MP ***What cutting-edge research provides hope for the future of cancer treatment and care?***

NR Ocular melanoma represents less than 5 percent of all melanoma cases, but is rapid and aggressive, accounting for 9 percent of melanoma deaths. Outcomes for those with metastatic disease are dismal due to a lack of effective therapies. However, increased awareness and new research, including liver-directed therapies, are finally providing some hope for these patients.

MP ***What else do you think Canadians should be aware of when it comes to awareness, diagnosis, or treatment of skin cancer?***

NR It's important for people to recognize just how prevalent skin cancer is. There are 80,000 new cases of skin cancer diagnosed in Canada every year. That's more than lung, prostate, breast, and colon cancers combined! It's so important for people to understand the seriousness of this disease, and that it's not "just skin cancer".

Read the full interview at **healthinsight.ca**.

Sponsored by save your skin FOUNDATION

MYELOMA: MOVING CLOSER TO A CURE

Martine Elias
Executive Director, Myeloma Canada

Myeloma is the 2nd most common form of blood cancer. Every day, 9 Canadians are diagnosed, yet the disease remains relatively unknown. New and innovative treatments are enabling people with myeloma to live longer and better, and a cure is closer than ever.

When Myeloma Canada was founded in 2005, there was 1 approved drug in Canada to treat myeloma, the prognosis was 3 to 5 years at most, and research was limited. Through research, advocacy and uniting the Canadian myeloma community, we've seen unparalleled advancements. Today there are 8 approved drugs, with 4 in 2016 alone! This trend is continuing at an unprecedented rate.

Thanks to ground-breaking developments and innovations in myeloma treatment (i.e., proteasome inhibitors, immunomodulatory agents, and monoclonal antibodies), life expectancy for myeloma patients has close to doubled. There's been an explosion in clinical trials with novel therapies as well as new immunotherapy and biotechnology treatments like CAR T-cell therapies and T-cell engagers.

Research and funding are essential to maintain this momentum. A cure is close. Let's find it.

Martine Elias

For more information visit **myeloma.ca** or call **1-888-798-5771**.

Sponsored by MYELOMA CANADA

CANADIAN INNOVATION AND COLLABORATION THE SOURCE OF NEW OPTIMISM IN CANCER RESEARCH AND CARE

The future is tough to predict — especially in the field of cancer research. But today, as we enter a new decade, we're seeing the culmination of many breakthroughs and trends in cancer research from the past half century, allowing us to be increasingly optimistic about the future of cancer care.

While the 20th century was all about discovering more about the biology of cancer and how it develops, the 21st century has been about applying that knowledge in new ways that will have ever greater impacts for patients.

Today, a convergence of fields such as mathematics, imaging, and cancer biology, combined with big data and technologies such as artificial intelligence and next-generation genomic sequencing, has aided us in developing more targeted and less invasive tools for diagnosing and treating cancer.

Dr. Laszlo Radvanyi
President & Scientific Director,
Ontario Institute for Cancer Research

At the Ontario Institute for Cancer Research (OICR), we're working with partners to advance these innovations to the clinic. In Canada, OICR is leading or participating in collaborative initiatives like the Canadian Partnership for Tomorrow Project, the Canadian Cancer Clinical Trials Network, and the Marathon of Hope Cancer Centres. All these projects will have a tremendous impact for Canadian patients.

Our international collaborations are also showing incredible promise. As leading members of the Pan-Cancer Project, OICR researchers joined with researchers around the world to develop major new insights into how cancer evolves, as well as new tools in the fight against cancer.

Projects like these were unimaginable even two decades ago. But now they're commonplace, opening new avenues for research and new optimism about the future of cancer care.

This new optimism is due to decades of investment in Canada's research infrastructure, the talent and ingenuity of Canadian scientists and clinicians, and the willingness of Canadian patients to participate in cancer research. Working together, we'll ensure that today's breakthroughs are tomorrow's solutions for patients.

Dr. Laszlo Radvanyi

For more information, visit **oicr.on.ca**.

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FROM CANCER SURVIVOR TO CANCER THRIVER

> "Today, 63 percent of Canadians survive at least five years after a cancer diagnosis — a number that's improving every year.

Not long ago, having cancer was considered a death sentence by many. Today, 63 percent of Canadians survive at least five years after a cancer diagnosis — a number that's improving every year. With almost half of us expected to be diagnosed with cancer in our lifetime, more and more of us are living with cancer.*

Dale Boidman of Montreal describes herself as a "two-time breast cancer thriver." But Dale has been both a patient and a caregiver. Her husband Nat was diagnosed with bladder cancer in 2012. They're both survivors today, but it hasn't been easy.

"Keeping the relationship strong, while worrying about how your partner is feeling or coping, and getting involved from the outset to make a difference is how I've chosen to act," says Dale.

As an active board member of Bladder Cancer Canada (BCC), Dale has worked hard to support her husband's cancer journey and to help others. "I strive to promote BCC's goals of raising awareness for bladder cancer, supporting patients, and funding research," she says. "I've witnessed first-hand the success that participation and fund raising can have."

**Canadian Cancer Statistics 2019, Canadian Cancer Society*

CANADA IS HOME TO ONE OF THE **TOP 5 CANCER RESEARCH CENTRES IN THE WORLD**. HERE'S WHY THAT MATTERS

Ever since the 1950s, when Dr. Vera Peters demonstrated that patients with early Hodgkin's disease could be cured with radiation therapy, Toronto's Princess Margaret Cancer Centre has been a beacon of groundbreaking cancer research and care. Today, the pace of discovery at the Cancer Centre is only accelerating as new technologies allow researchers and clinicians to understand aspects of cancer that were previously unknown.

Senior scientist Dr. Daniel De Carvalho, originally from Brazil, is one of many researchers at the Cancer Centre harnessing the latest technology to revolutionize our understanding of cancer and reshape the paradigm of cancer diagnosis and care.

"We're in a moment of rapid transformation in our understanding of cancer," says Dr. De Carvalho. "How we approach cancer research in the coming decades — increasing our knowledge about how to prevent it, how to detect it early, and how to intercept it before it becomes an advanced disease — will define the outcomes of cancer care for generations."

Early cancer detection means better cancer outcomes

Dr. De Carvalho's research is focused on early cancer detection. Novel cancer treatments are being developed every year, but the new therapies and the old almost universally share one thing in common: the earlier treatment begins, the better the outcome.

"For many cancer types, most patients are diagnosed at late stages," says Dr. De Carvalho. "This gives time for the disease to spread and become more heterogeneous, allowing the cancer to become more difficult to treat. When the cancer is diagnosed at an early stage, the chance of a cure can be much higher."

Using advanced tools like DNA sequencing and machine learning, Dr. De Carvalho's team has developed a new liquid biopsy procedure that detects previously imperceptible epigenetic markers unique to cancer cells. Finding these markers in a conventional blood sample is a classic needle-in-a-haystack problem. By leveraging artificial intelligence, the team has been able to not only pick out the marked cells within the great wash of unmarked cells, but also identify the area of the body from which they originate.

"My research focus is on using an epigenetic mark called DNA methylation to identify if small pieces of DNA circulating in the blood come from normal cells or from tumour cells," explains Dr. De Carvalho. "In my group at The Princess Margaret, we developed a technology to capture all the DNA molecules tagged with these epigenetic marks from a blood sample, so we can read these epigenetic tags using DNA sequencing technology. Then, we trained a computer program to learn these patterns and identify if each blood sample contains DNA from a tumour or not, and, if it gives a positive result, where the tumour is located."

> "We're in a moment of rapid transformation in our understanding of cancer. Research in the coming decades will define cancer care for generations.
> *— Dr. De Carvalho*

A blood test for cancer is revolutionary. And it's just the tip of the iceberg

This innovation is a potential game-changer, allowing multiple types of cancer to be diagnosed and located through a simple blood test both earlier and more effectively than using existing diagnostic tools. Dr. De Carvalho's liquid biopsy technology must undergo further testing and validation before it can be put into clinical use, but the results so far are extremely encouraging.

As Dr. De Carvalho's research makes it through this phase of the bench-to-bedside pipeline, there are many other concurrent cancer research initiatives at The Princess Margaret at various stages, from basic research to clinical trial. Just as Dr. Peters' discoveries changed the landscape of Hodgkin's disease treatment 70 years ago, more recent research at Princess Margaret Cancer Centre has been transforming the standard of cancer care worldwide. In the last decade alone, The Princess Margaret's scientists and clinicians have pioneered advancements in targeted anticancer drugs, radiotherapy, chemotherapy, stem cell science, and even mental health management for cancer patients.

Dr. Daniel De Carvalho
Senior Scientist, Princess Margaret Cancer Centre

KEY DISCOVERIES AND INNOVATIONS AT THE PRINCESS MARGARET

1950s

Dr. Vera Peters' groundbreaking work shows that patients with early Hodgkin's disease, then considered incurable, could be cured if given extended field radiotherapy.

1961

Dr. James Till and Dr. Ernest McCulloch discover stem cells and how they function, which changes the course of cancer research.

1971

The Princess Margaret bone marrow transplant unit performs the first allogeneic transplant — transplants between unrelated donors.

Princess Margaret Cancer Centre.

The road to a healthier Canada, and world, is paved with well-funded cancer research

Looking to the future, Princess Margaret Cancer Centre has a broad mandate for new science, with multiple promising areas of focus. Stem cell research, for example, promises a powerful new avenue of insight into how cancer operates and develops, as well as offering potential new therapies. Immunotherapy — an area in which The Princess Margaret is a leader internationally — recruits the body's own immune system as an ally in the fight against cancer. Genetics and epigenetics, as in Dr. De Carvalho's research, are allowing us to understand cancer, in all its many forms, far better than ever before, leading to new diagnostic tools and more targeted treatments. And, as a final example, smart cancer care is about transforming the way we think about cancer care entirely, so we can allocate resources intelligently and provide the best care and quality of life for the most patients, nationwide.

For these and other important research initiatives to advance, a robust mix of public funding and private philanthropy is necessary to provide the foundation on which our nation's advanced cancer research centres can build a healthier tomorrow. Philanthropy has undoubtedly positioned The Princess Margaret as one of the top 5 cancer research centres in the world.

Made-in-Canada cancer science, global cancer care

The return on investment for Canadians when sufficient resources are available to keep developing this science here at home is profound and multifaceted.

"Developing novel technology locally has multiple benefits to Canadians," says Dr. De Carvalho. "First, it allows Canadians to have faster access to novel diagnostic tools and new therapies. Moreover, it allows the development to focus on Canadian needs, such as public health care versus private health care and accessibility to remote communities. Further, having Canadian and global scientists trained here developing their own technical and scientific expertise can create an invaluable innovation ecosystem that will help the Canadian economy to thrive, now and into the future."

The very fact that Dr. De Carvalho — along with medical and research trainees from over 70 institutions from around the world — has chosen to conduct his science at The Princess Margaret makes the case for well-funded Canadian research institutions clear and tangible. By maintaining state-of-the-art research facilities within our borders, we're able to attract top scientists and clinicians from around the world, and give our homegrown innovators a powerful incentive to stay. And the reach of these innovations is enriched through research partnerships with over 200 institutions worldwide, benefiting all global citizens and further cementing Canada's role as an international leader in cancer research.

"Princess Margaret Cancer Centre is one of the top 5 cancer research centres in the world," says Dr. De Carvalho. "It's ahead of most other places, with world-leading science and high-profile scientists. We're a comprehensive cancer centre, treating over 200 types of cancers, including the rarest ones, so we have clinicians who are interested in the science and scientists who are interested in the clinical questions and we talk to each other daily. In fact, roughly 17 percent of Princess Margaret patients are participating in clinical trials, versus an average of 5 percent at other major cancer centres in North America. This translates into rich learning that can affect the future standard of cancer care worldwide."

When we help great research institutions like Princess Margaret Cancer Centre to thrive, we provide an unparalleled venue for the scientific collaboration and achievement that have been progressively improving Canadian and global cancer care for decades, and will continue to do so in the decades to come.

D. F. McCourt

For more information or to donate, visit **thepmcf.ca**.

Sponsored by

The Princess Margaret Cancer Foundation UHN

2005

Dr. Norman Boyd identifies breast density as a major risk factor for breast cancer, and later demonstrates that it's highly inheritable.

2013

Dr. Tak Mak identifies a new anticancer target called PLK4, which plays a crucial role in the process of cancer cell division. Health Canada and the U.S. FDA provide clearance to advance a first-in-class cancer drug to Phase I clinical trials.

2015

Stem cell scientists, led by Dr. John Dick, identify a new view of how human blood is made. Different kinds of blood cells form quickly from the stem cell and not further downstream as traditionally thought.

2017

Dr. Daniel De Carvalho discovers a mechanism to mimic a virus and potentially trigger an immune response to fight colorectal cancer stem cells like an infection.

SURVIVING PROSTATE CANCER BEGINS WITH ONE CANDID CONVERSATION

While only men have a prostate gland, prostate cancer can affect us all. It's the most commonly diagnosed cancer in Canadian men, impacting not only the patient, but also their loved ones. The good news is that advancements in prostate cancer screening are making it easier than ever to detect cancers before they become dangerous. Simultaneously, treatment options for men with more advanced stage disease are also expanding and improving.

"On average, 62 men are expected to be diagnosed with prostate cancer in Canada each day and 11 will die," says Dr. Stuart Edmonds, Executive Vice President of Mission at the Canadian Cancer Society (CCS). "That's the magnitude of the issue we're dealing with."

Dr. Edmonds was previously Vice President, Research, Health Promotion, and Survivorship at Prostate Cancer Canada. As of this year, however, Prostate Cancer Canada has amalgamated with the CCS in a move that looks to dramatically increase the capabilities of both organizations with increased investment in the services and support provided to patients, health care providers, and researchers. "The amalgamation is about creating a more efficient fundraising environment that directs more money to the research and programs that benefit people affected by cancer," says Dr. Edmonds. "It's really built on the successes of the Canadian Cancer Society's merger with the Canadian Breast Cancer Foundation that happened in 2017."

Dr. Stuart Edmonds
Executive Vice President, Canadian Cancer Society

Cancer survival depends on early detection

With survival for localized early stage prostate cancer at nearly 100 percent, an important focus among organizations like the CCS is ensuring that cancers are diagnosed early enough to treat effectively. "By the most recent cancer statistics in Canada, 8.6 percent of men overall will have metastases at the time of diagnosis," says Dr. Urban Emmenegger, Medical Oncologist at Sunnybrook Health Sciences Centre's Odette Cancer Centre. "That goes up to 25 percent in men aged between 80 and 90. This definitely ties into the conversation about screening. There's concern that if we do less screening, then the rate of metastatic prostate cancer diagnoses might go up. And metastatic prostate cancer is an incurable condition, while localized prostate cancer is a highly treatable condition."

Dr. Urban Emmenegger
Medical Oncologist, Sunnybrook Health Sciences Centre's Odette Cancer Centre

Fortunately, for the men whose cancer is detected later, prospects are improving as well. "We're fortunate to have multiple efficacious treatment options now, even for men with more advanced disease," says Dr. Emmenegger. "In addition to androgen (hormone) deprivation therapy, we also have chemotherapy, palliative radiation therapy, and new oral medications. The majority of patients are able to go on with their lives. They can travel, they can remain active, and they can maintain an overall pretty high quality of life."

> "What we're seeing more and more is that the PSA test is the best way to start the process of identifying prostate cancer.

Effective screening depends on comprehensive funding and open dialogue

Screening for prostate cancer is an evolving process. The most important screening tool right now is the prostate-specific androgen (PSA) test, which is a simple blood test that can reliably detect potentially cancer-related stress in the prostate. Suspicious PSA tests are then followed by more confirmatory tests like biopsies and MRIs.

Though the PSA test isn't covered by public insurance in all provinces, doctors are increasingly recommending its use. "What we're seeing more and more is that the PSA test is the best way to start the process of identifying prostate cancer," says Dr. Edmonds. "It's really vital that men have a conversation about the PSA test with their doctors starting at age 50."

Unfortunately, that conversation is one that too many men are putting off until it's too late. Prostate cancer may be an uncomfortable topic to discuss, but it's essential that we break the stigma and talk openly. "Because prostate cancer is a below-the-belt disease, it can have health implications that are significant to our perceived or socially constructed ideas of masculinity, like erectile dysfunction and incontinence," says Dr. Edmonds. "These are things that men really want to avoid, but also want to avoid talking about. In many ways, the prostate cancer world is 30 or 40 years behind the incredible work that has been done in breast cancer. The openness that people feel in talking about breast cancer really doesn't exist yet when it comes to prostate cancer."

Dr. Edmonds' recommendation is that all men begin talking to their physician about prostate cancer screening by age 50. And, if you have a family history of prostate cancer or belong to a higher-risk group, he recommends starting that conversation by 45. Right now, thousands of Canadian men are dying each year of prostate cancer. An open and destigmatized dialogue is the key to saving those lives.

D.F. McCourt

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ONCOLOGY

This is what statistical significance means to us

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