AN INDEPENDENT SUPPLEMENT TO THE NATIONAL POST

MEDIA PLANET

Cancer: Cured?

FEBRUARY 2010

UNDERSTAND THE DISEASE, REDUCE YOUR RISK, AND LEARN ABOUT TREATMENT OPTIONS

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MEDIA PLANET

CANCER: CURED?

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Peter Goodhand

Live Well. Be Aware.

BY: PETER GOODHAND, CEO AND PRESIDENT CANADIAN CANCER SOCIETY

Get involved. Fight back against cancer.

Every three minutes another Canadian receives the dreaded diagnosis—cancer. Last year in Canada there were 171,000 new cases of cancer and more than 73,000 deaths. Worldwide, a staggering 12 million people will be diagnosed with cancer this year, and 7.6 million will die of the disease, according to the International Union Against Cancer.

In Canada, an estimated 40 per cent of women and 45 per cent of men will develop cancer in their lifetime.

But did you know that about half of all cancers can be prevented? That's potentially millions fewer cases of cancer every year worldwide.

February 4 is World Cancer Day, and the Canadian Cancer Society joins the International Union Against Cancer in a rallying cry to raise awareness about ways to fight back and prevent cancer. Working together is the key. It must be a team effort that includes governments, organizations, individuals, schools and industry. We all share the goal of a future where fewer people will get cancer.

What you can do

There are things you can do to help yourself, your family and all Canadians reduce the risk of cancer.

Live well

Learn more about lifestyle changes that can reduce your risk. They really can make a difference.

- Don't smoke. If you smoke, the best thing you can do for your health is to quit. Within 10 years of quitting, the overall risk of an ex-smoker dying from lung cancer is cut in half. For information on how to quit and why, visit www.cancer.ca.
- Limit your drinking. Keep it to less than one drink a day for women and less than two drinks a day for men.
- Maintain a healthy body weight. Research is showing more and more evidence that being overweight or obese contributes to many forms of cancer.
- Be sun smart. Whether it's outdoors or indoors, there's no safe way to get a tan. Protect yourself from cancer-causing UV rays by covering up and wearing sunscreen.

Be aware

Find out what you can do to stop cancer early.

- Know your body. You can find possible health problems early, including cancer. Know what is normal for you. Don't ignore any changes. Talk to your doctor.
- Get checked. Screening tests help find some types of cancer early, before you have any symptoms. Some screening tests can even find changes in your body before they become cancer.
- Know your family history. There are tests available that can identify if you are at increased risk. Let your doctor know if any close relatives have ever been diagnosed with cancer.
- The environment. Wherever possible, exposure to substances that cause cancer should be identified and eliminated by substituting safer alternatives. For more information, read our handbook The Environment, Cancer and You, available at www.cancer.ca.

Get involved

Join other Canadians in making the fight against cancer a priority. You could:

- Reduce cancer risks for the next generation by encouraging kids to eat right, exercise, not smoke and be safe in the sun.
- Fight for public policy to make healthy living easier for everyone by writing to your local, provincial or federal government to find out what they are doing to help fight cancer.
- Give your support to projects such as safe walking paths, product labelling and healthy foods in schools.
- Find out how you can help the Society fight for change by fighting against contraband cigarettes and for Community Right to Know legislation.

Please visit www.ifightcancer.ca for more information.

Research for prevention

Research is critical to finding out more about preventing cancer. Here are just some of the prevention projects we are funding:

- The risk of bladder and kidney cancer associated with environmental exposure to arsenic in drinking water
- Cigarette smoking and nicotine dependence in Canadian youth, with the goal of improving programs aimed at preventing youth smoking and helping young smokers to quit
- Genetic variations in HPV (human papillomavirus) to determine why only some women infected with the virus will develop cancer
- Potential causes of prostate cancer, including chemical exposure, lifestyle factors and genetic signatures
- Joint funding of the Occupational Cancer Research Centre which is working to identify, prevent and ultimately eliminate Ontarians' exposure to cancer-causing substances in the workplace
- Endowed research chairs in prevention in BC and Nova Scotia

We also welcome the largest-ever population study in Canada called the Canadian Partnership for Tomorrow. This long-term research study will explore how genetics, environment, lifestyle and behaviour contribute to the development of cancer. The pan-Canadian study will track 300,000 Canadians over at least 20 to 30 years. It will gather detailed information on health and lifestyle through surveys and the collection of blood and other specimens. The information will help researchers and policy-makers understand how different combinations of risk factors lead to cancer.

The study is sponsored by the Canadian Partnership Against Cancer, along with regional commitments from partner organizations in five provinces. For more information on the project, visit www.partnershipagainstcancer.ca.

> "...estimated 40 per cent of women and 45 per cent of men will develop cancer in their lifetime."

Canadian Cancer Society / Société canadienne du cancer

FIGHT BACK

By working with Canadians, the Canadian Cancer Society fights this disease on many fronts, not just prevention. We encourage Canadians to join the fight. For more information, visit: www.fightback.ca.

Or call our toll-free Cancer Information Service at 1 888 939-3333, Monday to Friday from 9 a.m. to 6 p.m.

Is There A Need For Improved Access To Critical Therapies?

BY: ANTOINE ABUGABER

Due to a pressing need to balance the desire to get new oncology drugs that have performed well in clinical trials to patients quickly, Health Canada has established the fast track approval system. In this process, the review period for a drug that has been shown to address an important medical need is reduced to six months' review instead of 18-24 months.

Pharmaceutical companies are encouraged to submit their new drugs early for approval. During the file submission review period of Health Canada, oncology drug manufacturers may be given the opportunity to allow doctors access to their new oncology drugs prior to their approval—an approval known as Special Access program (SAP).

Next to hospital costs, drug costs make up almost 18 per cent of the total Healthcare budget. As new innovative oncology drugs are discovered to benefit patients, the cost becomes significantly more expensive. While it is clear that costs must be contained, provincial formulary decisions are inconsistent and often made based on a variety of variables that differ across provinces and insurers. Differing reimbursement restrictions cause inconsistency of care and can lead to untoward consequences. As the budget is unlikely to be increased significantly over the next few years, it is time for provincial governments to re-assess the reimbursement of formulary drugs in order to prioritize which drugs are more or less essential. Re-balancing the cost distribution within the drug portfolio may allow spending for priority treatment options such as those for cancer and other serious illnesses.

Each province independently establishes reimbursement plans separately, hence provincially funded drug reimbursement plans differ widely across Canada, as do eligibility requirements. This creates an inequality and has differing impact for vulnerable groups, such as seniors, those on fixed incomes and, social assistance recipients depending on the province they reside. These inequities challenge one of the guiding principles of the Canadian health care system — that all Canadians should have similar levels of access to health care benefits.

News of the complete DNA sequencing of" lung and skin cancers "promises great improvements in our ability to cure cancer by 2020, but it comes with a hefty price tag. While therapies will be precisely targeted to the defined abnormalities found in individual patients, the future will be decided by the interaction of technological success, society's willingness to pay, future healthcare delivery systems and the financial mechanisms that underpin them. Because innovation will inevitably bring more inequality to health, it will be the job of governments to ensure health equity for all of their constituents.

Access to new innovative cancer therapies is the most significant issue that is facing cancer patients, physicians and healthcare providers. A significant amount of time, energy and resources are wasted by oncologists and healthcare providers in navigating the complex reimbursement systems in most provinces. In general, those differences will pertain to geography. Treatment options covered are generally better in the west and getting worse as you go east of Canada.

Reviews of clinical and pharmacoeconomic evidence undertaken by the Common Drug Review, Quebec's Conseil du Médicament, and the Joint Oncology Drug Review are an important component of the market access process for new brand name cancer drugs. While reimbursement decisions should be made on evidence based medicine (EBM) and cost-effectiveness analysis (CEA), they also have to ensure timely access to urgently required treatments, as delays in initiating therapy have been associated with negative health outcomes.

An increasingly common option has been to restrict cancer medications to patients who meet explicit criteria upon pre-approval or "special authorization (SA.)" The SA criteria are usually a subset of the approved indications or are used for failure, intolerance to less costly treatments. To obtain SA medications, physicians have to submit an application to the drug program. Applications are generally reviewed within 2-8 weeks. This delay creates significant and unwanted stress because patients want to start treating their cancer as soon as possible. After the waiting period, the patient or physician is notified of the reimbursement decision in writing. If reimbursement is not granted, patients can be treated with an approved alternative or can opt to pay out-of-pocket for the restricted medication. Discussions with provincial governments to ease their process have been suggested, but to date, nothing of significance has made a difference provide rapid relief to patients.

In conclusion, there is an important medical need to implement a different processes to adjudicate oncology drugs required to manage urgent conditions that are life threatening. Administrators and Payers must be made accountable to ensure that appropriate reimbursement is approved in a timely manner.

As a result, decision makers should consider the following principles around each reimbursement decision: solutions must be transparent and equitable, with consistency across jurisdictions in terms of which drugs are covered, for which indication(s), and for what duration, and therapies required urgently must be immediately be made available. The economic, clinical, and human impact of decisions must be measured. Restricted drug reimbursement has generally been under investigated as to its clinical impact. Governments have not been held accountable for measuring the consequences of their very restrictive reimbursement. The increasing availability of electronic data and the ability of payers to link data resources to compare resource utilization with prescribing patterns could facilitate ongoing monitoring.

It is unreasonable to think that any one SA process will be ideal for all cancer drugs, all situations, and all patients. Things that may be considered to ensure rapid access of the drug would be providing short courses of therapy to cover the authorization period following hospital discharge, the availability of automated adjudication of urgent requests, the monitoring of SA approval rates to determine which medications to move to an open list or alternate mechanism of control, and the increased use of pre-approved oncologist prescriber specialized in a specific cancer. In terms of finding the funds to reimburse for new cancer drugs, it would make common sense to prioritize disease and treatment options between the urgent need to treat (such as cancer) or any other illness that is not life threatening.

Hopefully the implementation of some of these concepts may allow a greater number of Canadians to receive optimal treatment at an affordable cost. As a consequence, Canada may not be seen as one of the worst countries to reimburse and to treat our cancer patients with new innovative drugs, especially when compared to emerging and less rich countries.


Antoine Abugaber, President of ABUGABER CANADA Inc.

Personalized Health Care: A New Era In Cancer Treatment

For years, cancer therapies have largely been based on a wholesale approach that inadvertently destroyed healthy cells alongside cancerous ones. This not only makes it difficult to predict the outcome of the treatment, it can also cause side effects ranging from hair loss to fatigue to life-threatening infections.

BY: MARJO JOHNE

Not surprisingly, people diagnosed with cancer often enter treatment feeling anxious about how the therapy might affect their quality of life.

Today, however, a new generation of anticancer drugs is making it possible for physicians to deliver targeted treatment that kills only cancerous cells, resulting in improved outcomes and reduced or milder side effects.

At the same time, new breakthroughs in diagnostics and biomarker testing are ushering in the next level of cancer care: personalized treatment. By analyzing the biology of each person's cancer, physicians will be able to determine which patients will benefit most from a targeted cancer drug.

This is the future of cancer treatment, and today we're walking on the threshold of that future.

"Personalized cancer care is an exciting development that we're seeing in various areas of oncology," says Marc Zarenda, scientific director at the Canadian headquarters of AstraZeneca, a global pharmaceutical company whose product portfolio includes cancer drugs. "For example, at AstraZeneca we're currently testing a drug for ovarian and breast cancer just in women who have a mutation in the BRCA gene."

AstraZeneca is by no means the only company moving towards personalized cancer care, adds Mr. Zarenda. "All the pharmaceutical companies that make cancer drugs are heading in this direction," he says.

Lung cancer treatment gets personal

Personalized health care is becoming a reality for many lung cancer patients, thanks to a class of drugs called tyrosine kinase inhibitors, or TKIs for short. TKIs, including Iressa (gefitinib) and Tarceva (erlotinib) target and block the activity of epidermal growth factor receptors (EGFRs), which are proteins found on the surface of cancer cells.

While investigating TKIs, researchers discovered that tumours in some patients shrank much more dramatically than in others. Most of the patients that experienced this positive response never smoked, were women, were of Asian ethnicity, or had adenocarcinoma, a kind of cancer that develops in cells lining the lungs.

A closer look revealed that some people in this group had a mutation or change in the EGFR receptor. By some estimates, about 10 per cent of non-Asian and 40 per cent of Asian NSCLC patients will have the EGFR mutation. Of this group, a recent study suggests that about 70 per cent will likely respond to a TKI when taken as a first-line therapy.

So what does all this mean for lung cancer patients who have been approved for TKI treatment?

Delayed recurrence and improved quality of life

Currently, a large majority of patients diagnosed with advanced lung cancer are treated with chemotherapy. With the addition of T KIs to the arsenal of lung cancer treatments, and the availability of a new diagnostic test in the near future, doctors will be able to test patients for the E GFR mutation and, based on the results, make a choice between chemotherapy or a T KI.

So far, emerging research has shown that a drug, Iressa, recently approved by Health Canada for the first-line treatment for locally advanced or metastatic non small-cell lung cancer in EGFR mutation-positive patients, can delay the recurrence of cancer longer than standard chemotherapy in this group of patients. Iressa is the first and only treatment approved for this use.

Tarceva is an alternative approach for lung cancer patients who have already been given chemotherapy, but the chemotherapy has stopped working.

"What Iressa does is delay recurrence of the cancer and improve the quality of life of lung cancer patients with the EGFR mutation," says Mr. Zarenda. "Patients with the EGFR mutation may feel they have a good chance of benefitting from Iressa."

The benefits of TKIs go beyond cancer patients. The pills can be taken at home, easing the demand on hospitals and on health system resources.

Realizing the potential of personalized healthcare

Driven by the emergence of targeted drugs such as TKIs, the personalized healthcare model offers significant potential benefits to patients, doctors, insurance companies and public health systems. Personalized care ensures treatments are targeted for the best results and deliver good value for money. For regulators, this model offers opportunities to improve scientific understanding and ensure that new medicines deliver an optimal balance between benefit and risk in relation to the severity of the disease.

But to realize the full potential of personalized health care, standardized molecular diagnostics need to be in place so the right drug for the right patient can be identified. Government funding for these tests and for targeted drugs also needs to be established to ensure personalized care is accessible to everyone.

Currently, however, health funding is not keeping pace with innovations in personalized health care. Many diagnostic tests are not covered by the provinces, including tests for EGFR mutation. AstraZeneca will be paying for EGFR mutation testing on an introductory basis for eligible patients. Details of the program are being finalized and will be communicated shortly.

"Testing for the genetic constitution of tumors, whether or not, for example, they have the specific mutation that is targeted by the drug, would reduce health care system costs by an enormous factor," says Dr. William Hryniuk, past chair of the Cancer Advocacy Coalition of Canada." Yet, "the pathology or other laboratories which could do these tests are inadequately funded from province to province." Thus, when a new drug comes out, provincial government funding for it may be granted but the tests to determine who will benefit, and who will not, are rarely funded at the same time.

But despite these challenges, the future for personalized healthcare looks promising as it gains momentum from the discovery of breakthrough drugs, such as TKIs.

"The emergence of TKIs has thrown out a challenge to pharmaceutical companies to start developing more targeted cancer drugs," says Mr. Zarenda. "With all the recent advances in genetics research, pharmaceutical companies today have a greater ability than we've ever had in the past to develop more targeted drugs and, in the process, to establish personalized health care as the new paradigm for fighting cancer."

By the numbers

23,400: The estimated number of Canadians who will have been diagnosed with lung cancer in 2009

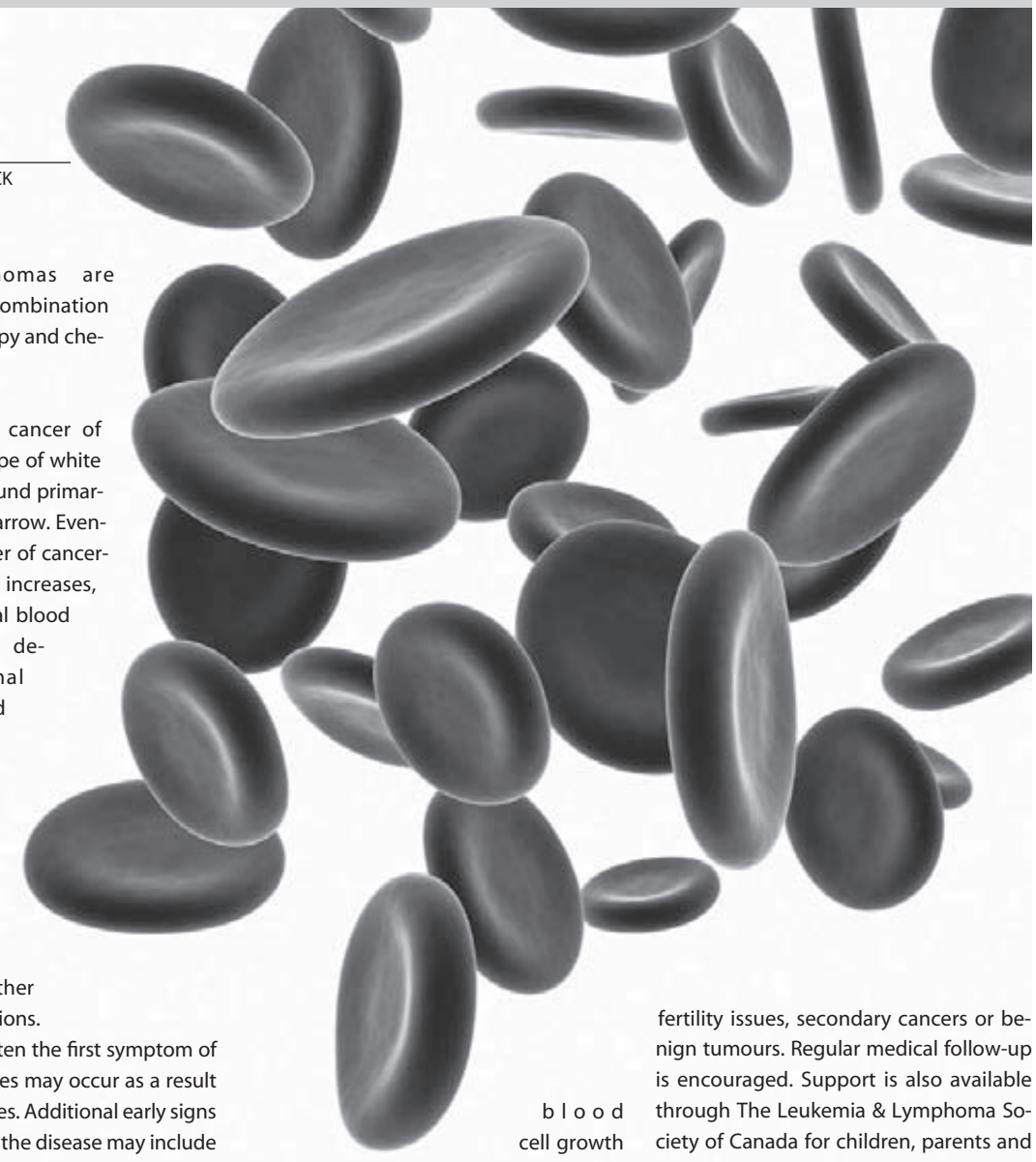
20,500: The number of Canadians estimated to have died of cancer in 2009 13 per cent—The five-year survival rate for men with lung cancer 18 per cent—The five-year survival rate for women with lung cancer

Lung cancer is the leading cause of cancer deaths in Canada. One in 13 men and one in 18 women are expected to die of this disease.

Blood Cancers

There are over 70,000 Canadians currently living with a blood cancer such as leukemia, Hodgkin lymphoma, non-Hodgkin lymphoma, myeloma and myelodysplastic syndromes. Every 35 minutes a Canadian is diagnosed; every 73 minutes, someone dies from one of these diseases.

BY: LORNA WARWICK



Blood cancers are grouped together because they all originate in the bone marrow or lymphatic tissues. The diseases result from a genetic injury to the DNA of a single cell, which becomes abnormal (malignant) and multiplies continuously. The accumulation of malignant cells interferes with the body's production of healthy blood cells. Each type of blood cancer is explained below.

It is important to know anyone can get blood cancer. The causes of most blood cancers are unknown. Some blood cancers are caused by extraordinary doses of radiation, certain cancer therapies or chronic exposure to benzene. Benzene is found in certain industrial settings, but regulation has reduced workplace exposure. Tobacco smoke is now the most common known cause of benzene exposure.

Leukemia

Leukemia is a cancer of the bone marrow and blood. It is categorized into four types: myelogenous or lymphocytic (which indicates the type of blood cell involved), each of which can be acute or chronic. Acute leukemia progresses rapidly resulting in the buildup of useless cells in the marrow and blood. As a result, the marrow often stops producing enough normal red cells, white cells and platelets. Anemia develops in virtually everyone with leukemia. Chronic leukemia progresses more slowly.

Signs of leukemia may include easy bruising or bleeding, paleness or fatigue, recurring minor infections or poor healing of minor cuts, mild fever or night sweats.* Some people with chronic leukemia may not have major symptoms and are diagnosed during a routine medical examination.

People with acute leukemia usually need to begin chemotherapy treatment right away. Sometimes, chemotherapy alone is enough for long-term remission. Other patients will require a stem cell transplant.

Chronic Myelogenous Leukemia (CML) is usually treated with an oral drug that blocks the cancer gene. This works as long as the patient continues to take the medication but it is not a cure. The only way to cure CML is with a stem cell transplant but there are a number of risks associated with transplantation. Chronic Lymphocytic Leukemia (CLL) doesn't always require immediate therapy. Many people live for long periods without treatment. Treatment options for CLL are limited.

Lymphoma

Lymphoma originates in the lymphatic system, part of the body's immune system which defends against infection. The lymphoma cells pile up and form masses that gather in the lymph nodes or other parts of the lymphatic system.

There are two main types of lymphoma: Hodgkin lymphoma (also called Hodgkin's disease) and non-Hodgkin lymphoma. Hodgkin lymphoma has large, malignant cells called Reed-Sternberg cells, named for the scientists who first identified them. Non-Hodgkin lymphoma (NHL) represents a diverse group of diseases.

There are a few risk factors which increase your chance of developing lymphoma including: history of confirmed infectious mononucleosis; people infected with HTLV or HIV; Epstein-Barr virus infection; and having a sibling with the disease. There is a higher incidence of NHL in farming communities. Studies suggest that specific ingredients in some herbicides and pesticides are linked to lymphoma. The number of lymphoma cases caused by such exposures has not been determined.

Painless swelling of one or more lymph nodes in the neck, armpit or groin is a common early sign of lymphoma but enlarged lymph nodes may be the result of inflammation in the body and are not always a sign of cancer. Other signs and symptoms of lymphoma may include recurring high fever, persistent cough and shortness of breath, night sweats, itching and weight loss*.

Most lymphomas are treated with a combination of radiation therapy and chemotherapy.

Myeloma

Myeloma is a cancer of plasma cells (a type of white cell) which are found primarily in the bone marrow. Eventually, the number of cancerous plasma cells increases, disrupting normal blood cell production, destroying normal bone tissue and causing pain. Myeloma disrupts the ability to produce antibodies, so Myeloma patients are susceptible to infections and other serious complications.

Bone pain is often the first symptom of myeloma. Fractures may occur as a result of weakened bones. Additional early signs and symptoms of the disease may include anemia, recurrent infections or numbness or pain in the hands and/or feet (caused by a condition called "peripheral neuropathy")*. People with myeloma may have no symptoms.

Myeloma can be treated with a number of therapies, including drug therapy, chemotherapy or stem cell transplant. The goal of therapy is long periods of remission and better quality of life while living with the disease.

Myelodysplastic Syndromes (MDS)

Myelodysplastic syndromes (MDS) are a group of diseases of the blood and marrow, with varying degrees of severity, treatment needs and life expectancy.

MDS starts with a change to a normal stem cell in the marrow, resulting in an increased number of developing blood cells called 'blasts' which die before they can be released into the blood. Normally, blasts make up less than five percent of all cells in the marrow. A patient is diagnosed with MDS patients if blasts make up more than five percent of the marrow cells.

Treatment includes a watch-and-wait strategy, transfusion, administration of blood cell growth factors, drug therapy, or chemotherapy. Today, the only potentially curative therapy is high-dose chemotherapy with stem cell transplantation but this has a number of risks associated with it.

Children and Youth

Blood cancers account for almost half of childhood cancers. While the survival rates for children and youth are much better than for adults, there are many long-term or late effects of chemotherapy and radiation that may develop. These can appear many years after treatment and may include learning disabilities, compromised cardiovascular systems, emotional issues, fertility issues, secondary cancers or benign tumours. Regular medical follow-up is encouraged. Support is also available through The Leukemia & Lymphoma Society of Canada for children, parents and educators to ensure optimal quality of life post-cancer.

In depth information on blood cancers as well as support available for patients and caregivers can be found at www.lls.org/canada or by contacting your local office of The Leukemia & Lymphoma Society of Canada.

*Some signs or symptoms of blood cancers are similar to other more common and less severe illnesses. The best advice for any person troubled by symptoms such as a lasting, low-grade fever, unexplained weight loss, tiredness or shortness of breath is to see a healthcare provider.

> "The diseases result from a genetic injury to the DNA of a single cell, which becomes abnormal (malignant) and multiplies continuously…"

Canadian Breast Cancer Foundation:

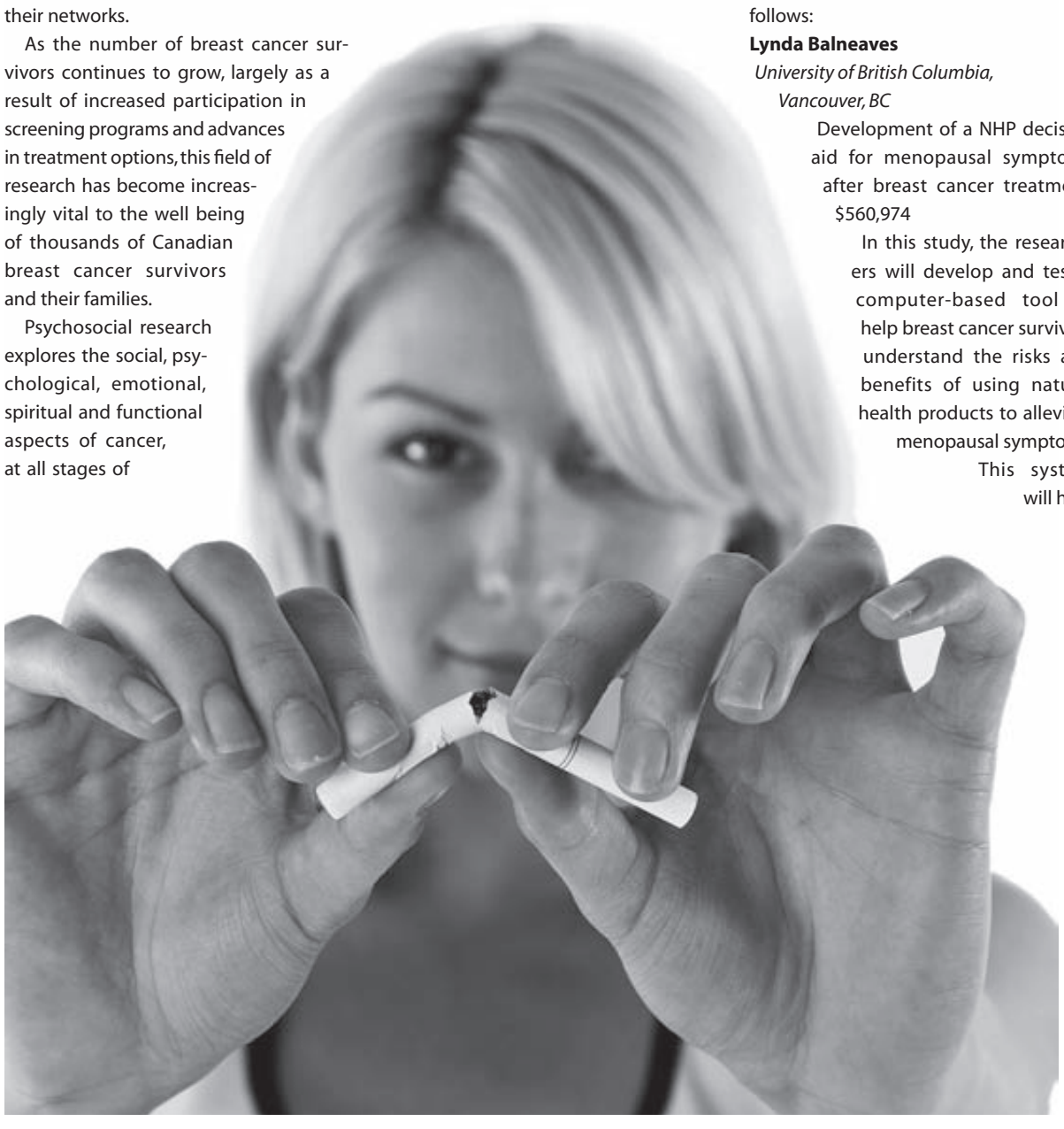
Creating a Future Without Breast Cancer™

Since its inception in 1986, the Canadian Breast Cancer Foundation has invested over $170 million to collaboratively fund, support and advocate for relevant and innovative breast cancer research, meaningful education and awareness programs, early diagnosis and effective treatment, and a positive quality of life for those living with breast cancer.

Quality of life research, also known as psychosocial aspects of breast cancer, has been made a priority by the Canadian Breast Cancer Foundation. To address this, the Foundation funds research that focuses on a whole-person approach to cancer care, addressing a range of human needs that can improve quality of life for affected individuals and their networks.

As the number of breast cancer survivors continues to grow, largely as a result of increased participation in screening programs and advances in treatment options, this field of research has become increasingly vital to the well being of thousands of Canadian breast cancer survivors and their families.

Psychosocial research explores the social, psychological, emotional, spiritual and functional aspects of cancer, at all stages of the disease from prevention to bereavement. Psychosocial factors exert powerful effects on health-related behavior, response to treatment, and quality of life. This work is expected to contribute new cutting-edge knowledge and help develop innovative new programs that enhance quality of life for those touched by this disease. Leaders in the field have commended the Foundation for its dedication towards quality of life funding as a vital aspect of the breast cancer journey.



Recently, the Foundation awarded a total of $2.4 million to five research teams in the Canadian Breast Cancer Research Alliance/Canadian Breast Cancer Foundation Special Research Competition on Psychosocial Aspects of Breast Cancer, as follows:

Lynda Balneaves
University of British Columbia, Vancouver, BC

Development of a NHP decision aid for menopausal symptoms after breast cancer treatment: $560,974

In this study, the researchers will develop and test a computer-based tool to help breast cancer survivors understand the risks and benefits of using natural health products to alleviate menopausal symptoms. This system will help women become active and informed participants in the treatment decision-making process surrounding the use of natural health products following breast cancer.

Joan Bottorff
University of British Columbia, Okanagan, BC

Chris Richardson
University of British Columbia, Vancouver, BC

Supporting Tailored Approaches To Reducing Tobacco (START)—decreasing breast cancer incidence: $307,035

Young women who smoke or are exposed to secondhand smoke are at increased risk of developing breast cancer later in life. In this study, public-health messages, aimed at aboriginal and non-aboriginal adolescent girls and boys, will be designed and evaluated for their ability to promote smoke-free lifestyles. Successfully educating adolescent girls and boys about the breast cancer risk related to smoking and secondhand smoke at this early age could contribute to lowering the incidence of breast cancer.

Tavis Campbell and Linda Carlson
University of Calgary, Calgary, AB

An objective comparison of cognitive behavioral therapy and mindfulness-based stress reduction for the treatment of insomnia in breast cancer survivors using wrist actigraphy: a randomized noninferiority trial: $449,703

This study will investigate the effect of two psychosocial programs on insomnia symptoms in women with breast cancer. Mindfulness-Based Stress Reduction (MBSR) teaches meditation and yoga and has shown promise for reducing sleep disturbance. MBSR will be compared to an already established treatment, Cognitive-Behavioural Therapy for Insomnia (CBT-I), to determine whether it produces similar effects with the added benefit of reduced stress and mood disturbance. Disrupted sleep can affect women in all stages of their cancer treatment and into survivorship, which can have a negative impact on overall quality of life. Establishing the degree of efficacy of both treatments will provide more options for patients and work towards the alleviation of a serious health risk.

Karen Fergus
York University, Toronto, ON

A multisite randomized controlled trial of couplelinks.ca: the first online intervention for young women with breast cancer and their male partners: $457,084

This study will assess the effectiveness of an innovative online course geared to the unique needs and concerns of young couples affected by breast cancer. The ultimate impact of the study will be the creation of an accessible, cost-effective tool that could help improve the quality of life of young couples coping with breast cancer, regardless of geographic location.

Joanne Stephen
BC Cancer Agency, Vancouver, BC

A randomized controlled trial testing efficacy of professionally-led online support groups for young Canadian breast cancer survivors: $582,995

In this study, researchers in several provinces will evaluate two online support group options (professionally-led and peer-led) to determine whether they help to improve the women's mood, feelings of loneliness, confidence and overall life satisfaction. It is hoped that these support groups will also help women re-engage in valued activities and commitments.

> "…breast cancer survivors continues to grow, largely as a result of increased participation in screening programs…"

Coping With Breast Cancer:

Understanding The Shocking News

BY: BREAST CANCER SOCIETY OF CANADA

Learning that you or someone close to you has been diagnosed with breast cancer is an emotional, confusing and frustrating experience. The entire process will test you in every way imaginable, even knowing that, when caught early, survival rates are extremely positive.

Breasts have sexual as well as nurturing connotations, and many women feel that being diagnosed with breast cancer will change their femininity, their identity. For those who undergo a mastectomy, there is concern about how their partner may respond to their new look. Although physical changes may be a part of the breast cancer journey, there may be great anxiety that affects women emotionally.

The first step in the coping with breast cancer process is perhaps the most important one: accept help and encouragement from family and friends. Surround yourself with their love and affection, communicating your true feelings. Every type of support you receive will help carry you through many other aspects of your journey, whether it's a hug, dinner, drive to an appointment or letter of encouragement.

Be informed about the particular breast cancer in question, treatments available and next steps. Learning what to expect will be emotionally and physically rewarding, reducing your anxiety. Some of the information you receive will be daunting, but you don't need to go through it alone. Rely on your circle of supporters' encouragement to carry you through.

Never forget to enjoy your body. Love it and love your life—everything about it. This can be extremely difficult, but by loving yourself, you're strengthening every aspect of your life. Do this by eating properly, exercising, staying positive, and savouring the little things.

Also remember that thousands of Canadian women are diagnosed with breast cancer every year—you're not alone. Join a breast cancer support group, whether it's in your community or online. These are tremendous sources of information, with many who are travelling a similar path.

Lastly, remember that all women cope differently. And all families and friends react differently. Although there's no single path that one can take, following in the footsteps of those who have taken similar paths will help carry you through.

Breast cancer is complicated and its cure won't be found easily. But by becoming informed, detecting it early and continuing research into its causes and effects, survival rates will continue to rise. To learn more about breast cancer or to make a donation to the cause, visit www.bcsc.ca/info.

The Breast Cancer Society of Canada is a charitable national organization dedicated to funding Canadian breast cancer research into the detection, prevention, treatment and to ultimately find a cure for the disease that women fear most.

> "Never forget to enjoy your body. Love it and love your life—everything about it."

The Breast Cancer Basics:

Every Woman Should Know

BY: BREAST CANCER SOCIETY OF CANADA

Breast cancer is an oft-misunderstood disease that one in nine Canadian women are diagnosed with. There are several types of breast cancer, depending on where in the breast tissue the tumour begins to grow, but most begin within the ducts used to secrete milk for breastfeeding.

But what causes breast cancer? This is difficult to answer because there is no single cause that doctors know of. Research has shown that there are several factors that work together to increase the risk of breast cancer—a relationship that still is not fully understood.

Some of the factors that have shown to increase the risk of breast cancer include:

Age: being over 50 years old.

Family history: a close family member may have inherited a mutated gene linked to the development of breast cancer. Please note that most breast cancer patients have no family history.

Reproductive history: links to the level of hormones a woman receives during her lifetime. Having your first period before the age of 12, having no children, or having your first child after the age of 30 can increase your risk.

Obesity: estrogen, which is linked to breast cancer development, is stored in fatty tissue. The greater amount of fat, the greater risk that it will affect your endocrine system (which secretes hormones) and breast tissue. Healthy physical activity helps to reduce obesity.

Diet/Nutrition: it's important to eat a well-balanced diet with fruits and vegetables as well as low-fat and high-fibre foods.

Alcohol: do not consume more than a moderate amount of alcohol.

Environmental factors: although research is inconclusive, much more research is needed to study our air, water and food and their effects.

Exposure to radiation: high doses at a young age (much higher than a mammogram) have been shown to be a factor in developing breast cancer later in life.

Hormone Replacement Therapy/Birth control pills: linked to the level of hormones a woman receives. The connection between these and breast cancer is still inconclusive.

Keep in mind that many women and men are diagnosed with breast cancer who do not exhibit the risk factors listed above. That's why it's important to detect tumours early—when they're small and treatable.

Here are three things you can do to detect breast cancer early: book a mammogram, especially if you're older than 40 (earlier if your family has a history with breast cancer); routinely complete breast self exams and seek medical advice if you discover changes; or, if you would like the advice of professionals, undergo a clinical breast exam.

Although an abnormal lump is often thought of as the only physical detection of breast cancer, there are many other physical changes, such as fluid leaking from the nipple, unusual dimpling around the nipple and changes in the skin texture of the breast—similar to an orange.

Breast cancer is complicated and its cure won't be found easily. But by becoming informed, detecting it early and continuing research into its causes and effects, survival rates will continue to rise. To learn more about breast cancer or to make a donation to the cause, visit www.bcsc.ca/info.

The Breast Cancer Society of Canada is a charitable national organization dedicated to funding Canadian breast cancer research into the detection, prevention, treatment and to ultimately find a cure for the disease that women fear most.

> "Keep in mind that many women and men are diagnosed with breast cancer who do not exhibit the risk factors…"

Colorectal Cancer Preventable, Treatable and Beatable!

BY: BARRY STEIN

Colorectal cancer is a disease in which cancerous growths (tumours) develop in the tissues of the colon and/or rectum. The disease can arise from either precancerous polyps (a benign tumour of mucous membranes) protruding from the colon wall or adenocarcinoma (malignant tumour) arising in the lining of the colon or rectum.

Though highly preventable and curable if caught early, it is the second-leading cause of cancer death in Canada, with approximately 22,000 Canadian having been diagnosed last year alone, and sadly 9,100 men and women succumbed to the disease.

Colorectal polyps and early colorectal cancers usually cause no signs or symptoms. Full-blown colorectal cancer, on the other hand, may present the following symptoms:

- Rectal bleeding or bloody stools
- Change in bowel habits or stools that are narrower than usual
- Abdominal discomfort such as bloating, fullness, or cramping
- Diarrhea, constipation or a feeling that the bowel does not fully empty
- Unexplained weight loss
- Constant fatigue or anemia
- Vomiting

According to the findings published by the World Cancer Research Fund, the overall risk of developing colorectal cancer (crc) can be reduced by engaging in regular physical activity and exercise; maintaining a healthy weight; eating a high-fiber diet rich in fruits and vegetables, beans, nuts and whole grains; consuming calcium-rich foods; limiting red meat consumption and avoiding processed meats; limiting alcohol consumption and no smoking. By adopting these healthy lifestyle recommendations in combination with crc screening, the Colorectal Cancer Association of Canada (CCAC) maintains that the mortality rate from this disease should drop substantially over the next ten years.

The CCAC is Canada's leading non-profit organization dedicated to increasing awareness and education of crc, supporting patients and caregivers, and advocating for primary prevention and population-based provincial screening programs as well as equal and timely access to effective treatments. The CCAC prides itself on its first-class website furnishing patients with a wealth of contextual information coupled with erudite knowledge. In an effort to reduce crc-related mortality, the CCAC strives to "promote primary prevention and screening and ensure that those patients already touched by the disease are afforded every chance possible to find a cure and prolong their lives," maintains Barry D. Stein, president of the CCAC. "Primary prevention, through the adoption of a healthy lifestyle, screening and timely access to effective treatments are the hallmarks of what will improve patient outcomes," Stein said.

However, ensuring that Canadians across the country access a standard of care screening program, necessitates the integration of a population-based crc screening program in every province. Stein adds: "Those provinces that have not as yet committed to bringing in a screening program, must address this problem with urgency if we are to save lives." The CCAC applauded New Brunswick's recent decision to implement their crc screening program and implores those provinces lacking an existing program to contribute by providing a screening program that will ensure nation-wide screening. Additionally, the CCAC is calling upon the Canadian Medical Association and all family practitioners to promote screening through either Fecal Occult Blood Test (FOBT) or Fecal Immunochemical Test (FIT) at the very least as part of a bi-annual health check up for all men and women fifty years of age and older.

In an effort to increase the profile of crc screening in Canada as well as promote the message of primary prevention, the CCAC has most recently launched two initiatives, The Giant Colon Tour and their Public Service Announcement (PSA) Contest. An astounding forty feet in length and eight feet high, The Giant Colon is a multimedia walk through exhibit designed for all ages featuring all pathologies arising from the human colon, including crc, and will be touring the country on a regular basis. The PSA contest promises to invoke more awareness of crc and how it may be prevented by requesting that contest participants submit an entry consisting of a video or print image which has as its subject matter awareness or prevention of crc.

The advent of new targeted therapies finding their way into treatment regimens for crc patients with metastatic disease, belongs to the CCAC's mandate which calls for equal and timely access to effective treatments across the nation. While forming the standard of care therapies for advanced disease in many other countries, provincial governments in Canada have been debating the coverage of life-prolonging biologics such as bevacizumab (avastin), vectibix (panatumumab) and cetuximab (erbitux). The CCAC's position regarding effective therapies has been clear and unwavering: all patients, regardless of their geographical location, should be afforded the benefit of long term survival through timely and equal access. Despite CCAC's success in helping to secure public funding of avastin in a number of provinces, the campaign must continue to assist those patients in PEI and Manitoba that do not have publicly funded access to avastin, as well as assist in securing public funding for vectibix and erbitux in those provinces that do not currently provide access.

Should you wish to access information on CCAC's website or contact them, please visit www.colorectal-cancer.ca or 1.877.50 COLON (26566)

A Man And His Cause

BY: BARRY STEIN

The Colorectal Cancer Association of Canada (CCAC), the country's leading non-profit organization dedicated to increasing awareness of colorectal cancer, supporting patients and advocating for a national screening policy and equal and timely access to effective treatments across the country, is looking back on the year's accomplishments and the many great improvements made to colorectal cancer care and prevention in Canada with pride. And the man who has spear-headed every one of these efforts is himself a former stage IV colorectal cancer patient, Barry D. Stein, president of the CCAC.

Stein, a graduate of McGill University, has been an accomplished lawyer in Quebec since 1981. In 1995, he was fraught with a diagnosis of colon cancer which was subsequently discovered to have spread to his liver and lungs. Horrified at the prospect of an ever-expanding waiting list for liver surgery and the unavailability of certain treatments in Canada at the time, Stein was compelled to seek health care outside of Canada to battle his disease at great cost. Fortunately, Stein was reimbursed for the majority of funds paid out to U.S. hospitals after a long legal battle that resulted in a judgment of the Quebec Superior Court in 1999. This judgment remains as a leading precedent in Canada for the reimbursement of out of country health care. Stein explains, "The government was legally bound to pay for the procedure since the standard of care that was medically required was not available in Canada in a timely manner."

Stein endured countless procedures, surgeries, therapies and emotional whirlwinds which he credits with not only saving his life, but enriching and equipping him with the tools to actively and judiciously represent the interests of colorectal cancer patients; the inevitable consequence of which was the inception of the Colorectal Cancer Association of Canada. The CCAC was founded in 1998 and Stein assumed stewardship as its president in 1999. The largest organization of its kind in Canada, its slogan is "Colorectal Cancer is Preventable, Treatable and Beatable," largely springing from the power and potentially preventive effect a national screening program can have over the evolution of the disease. Over the past few years, there have been exciting changes to the state of colorectal cancer prevention and treatment in Canada. The implementation of colorectal cancer screening programs in many provinces across the country in many cases resulted from the initial efforts of Stein and his national strategy through the CCAC to promote colorectal cancer awareness and the need for such programs.

Access to effective medications has also seen recent progress with the public funding of biologics such as avastin in the majority of provinces, despite hefty price tags and admittedly a cost containment focus assumed by respective provincial governments. Providing equal and timely access to the most effective treatments within the treatment guidelines has been an unwavering mandate for Stein and the CCAC, whose commitment to saving, prolonging and improving the quality of patients' lives is surpassed by none. Since the advent of targeted therapies designed to prolong the lives of colorectal cancer patients and improve their quality of life, Stein has emphasized the importance of shifting from a cost containment approach in the medications approval process to providing patients with better access to effective treatments that provide hope where none existed before.

Stein works to inform key decision-makers both in Canada and internationally of the concerns associated with colorectal cancer prevention and care. He interacts with politicians and officials through roundtable discussions, press conferences, and educational events and lobbying aimed at promoting change and effective policy. Because of Stein, the CCAC remains at the forefront in the accessibility of colorectal cancer treatment and management ensuring patients' needs are heard and met. The organization is proud to participate in health forums and conferences, distribute educational material, hold free information sessions, and produce public service announcements for television, radio and print. Support groups across the country are offered, connecting patients, survivors and caregivers, one of which is led by Stein himself in Montreal.

Barry Stein was an ordinary man who was silently flung into an extraordinary set of circumstances from which he was able to achieve, and continues to achieve, remarkable results for the good of others afflicted with one of the deadliest diseases known to man. Many colorectal cancer patients can now avail themselves of therapies and opportunities designed not only to prolong their lives, but improve the quality of their life as well. And in some cases, patients can now achieve long term remission or even qualify for a cure in the surgical setting resulting from Stein's efforts to secure public funding of medications such as avastin. The world is a much better place because of Stein and colorectal cancer patients owe him a world of gratitude for which he humbly would replace with and prefers gratification. For gratitude is no substitute for gratification when awarded with the privilege of serving others.

The Lung Flute

The future of cancer treatment looks at creating specialized treatment for individuals so as to minimize the side effects of the medication. One of the deciding factors that specialists use to determine the best course of treatment are biomarkers. Take the example of the lungs - bio-markers can be found in the sputum that lies in the bottom of the lungs. Traditionally, there are two ways to extract this sputum a) a self induced coughing fit or b) inhaling a hypertonic saline vapour that induces a deep cough which brings up sputum. While effective, this method can cause severe discomfort.

A recent innovation is the lung flute, a patented, FDA approved device developed by Medical Acoustics of Buffalo N.Y. With this device, the subject blows into this simple plastic device that creates low-frequency sound waves.

These acoustic sound waves vibrate throughout the chest cavity and reduce the viscosity of deep lung mucus deposits in the lungs, allowing the cilia in the lungs to more easily move these deposits from the lungs to the throat where the sputum can be expectorated without discomfort.

Advanced Colorectal Cancer: Commonly Asked Patient Questions

If you have been diagnosed with advanced (or stage IV) colorectal cancer it means that it has spread beyond the colon and rectum to the pelvis, abdominal cavity, lymph nodes, liver or lung. Breakthroughs in research and technology have created treatment choices and brightened the outlook for longer survival times and a good quality of life.

Dr. Mark Vincent, a medical oncologist at the London Regional Cancer Program and Associate Professor at the University of Western Ontario, encounters patients with stage IV colorectal cancer weekly and part of his role is to translate scientific research into clinical practice and help patients understand what the disease progression means and what their treatment choices are.

Q: My cancer has spread and the chemotherapy treatment I am taking is not working. What does this mean?

A: Most patients with advanced colorectal cancer will have previously had surgery to remove the primary tumour and possibly radiation to kill any remaining cancer cells in the area around the original tumour. In addition, patients may have had chemotherapy to try to stop the cancer from coming back. This is referred to as curative intent chemotherapy. Unfortunately this treatment doesn't always work and in some cases the cancer will come back and spread beyond the colon and rectum. If the cancer returns, chemotherapy is given with the intention of prolonging survival. If the second round of chemotherapy fails, you will move on to the next stage: targeted treatment.

Q: How does targeted treatment work?

A: Targeted treatment is different than traditional chemotherapy which kills both the cancer cells and also some healthy cells. Targeted therapy is more selective and stops the malignant cells from reproducing while being less damaging to healthy cells. Monoclonal antibodies are a targeted therapy and an important weapon to fight advanced colorectal cancer that was added to our medical arsenal about six years ago. Your doctor will select the best combination of monoclonal antibody with or without chemotherapy. The goal is to shrink the tumours, prolong survival time and delay the cancer's progression. In some cases, patients whose tumours can be operated may receive targeted therapy to shrink tumours before surgery.

Q: I have heard about combination therapy. What does this mean and is it for everyone?

A: In combination therapy, monoclonal antibodies (targeted therapy) are given in combination with other chemotherapeutic agents. Combination therapy targets your cancer's genetic make-up and the part of your body where the cancer has spread. Clinical trials have tested various therapeutic agents and found that there is greater tumour shrinkage and delayed cancer progression when chemotherapy is used together with a monoclonal antibody. The benefit of combination therapy is that it makes the cancer cells more susceptible to the chemotherapy and at the same time the targeted therapy blocks the driver of the cancer and stops it from growing, giving the patient the benefit of both treatments.

Q: Am I a candidate for targeted treatment?

A: There are subtle and complex factors that determine if a patient will respond to targeted treatment. The process involves matching the best available treatment to a tumour's genetics because the effectiveness of these therapies is tied to genetic markers. The major factor that will determine a patient's response to monoclonal antibody treatment is the presence or absence of a genetic mutation of the KRAS gene. Clinical trials show that targeted therapies have a positive effect on patients with tumours where the KRAS is not mutated (wild type or normal) resulting in significantly increased response rates and decreased risk of tumour progression. Monoclonal antibody treatment (targeted therapy) will not work if the KRAS gene is mutated. The ability to predict a patient's response is an important advance in our understanding of targeted treatment for advanced colorectal cancer.

Q: What does the future hold for targeted treatments?

A: Unlocking the secrets of the genetic code such as the KRAS mutation's impact on the effectiveness of targeted therapy offers encouraging news for patients and opens a new frontier in scientific research that can greatly benefit clinical practice. As researchers and clinicians learn more about the genes that are responsible for cancer, they will be able to customize targeted therapies to each patient's genetic profile. Knowing that a genetic mutation is present will help predict the treatment outcomes in metastatic colorectal cancers and has already helped oncologists in clinical practice to take early steps toward individualized treatment of this disease.

> "Targeted treatment is different than traditional chemotherapy which kills both the cancer cells and also some healthy cells."

Definitions

Monoclonal antibodies: lab-created substances that stick to and destroy targeted cells. Monoclonal antibodies shut down angiogenesis, by regulating vascular endothelial growth factor (VEGF) and interfering with cancer cell growth by binding to and inhibiting their VEGF receptors.

Angiogenesis: a process whereby tumours grow new blood vessels to receive nutrients necessary to survive.

VEGF: the substance that controls angiogenesis.

Did You Know?

- Every day scientists learn and understand more about cancer, especially as improved and highly sophisticated technologies are emerging in clinical cancer research such as genomics/proteomics.
- As a result, more information is known about the cell and how the human body works, accelerating discoveries in clinical cancer research, which translates into more promising and effective drugs.
- As we enter the dawning era of personalized medicine (matching the right patient with the right drug to predict the best course of treatment), cancer is the first area that will benefit.

FAST FACTS

- In 2009, an estimated 22,000 Canadians were diagnosed with colon cancer.
- Nearly 80 per cent of people diagnosed with colon cancer have no family history of the disease.
- Last year alone, colorectal cancer killed 4900 men, and 4200 women, second only to lung cancer.
- Colorectal cancer almost always develops from a benign polyp and can be prevented by screening and removing it.
- Colorectal cancer is 90 per cent preventable and has a 90 per cent cure rate when detected and treated early.

THE GIANT COLON TOUR
Free Entry
Coming to a city near you!

North Bay	North Gate Shopping Centre	January 12-13
London	White Oaks Mall	January 16-17
Windsor	Devonshire Mall	January 19-20
St. Catherines	Pen Centre Mall	January 22-23
Brampton	Bramalea City Centre Centre	January 24-25-26
Kingston	Cataraqui Town Centre	February 3-4
Waterloo	Waterloo Town Square	February 6-7
Gatineau	Hilton Hotel (Lac Leamy Hotel)	February 19-20-21
Sudbury	New Sudbury Centre	February 24-25
Thunder Bay	Inter City Mall	February 28, March 1-2

Please refer to our website www.colorectal-cancer.ca for postings on additional locations.

For more information:
1·877·50·COLON (26566)
www.colorectal-cancer.ca

Colorectal Cancer Association of Canada

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Get Screened!

The Expanded Benefits Of Modern Surgical Technology

BY: SHONA RAMCHANDANI

When you hear the word "surgery," what do you think about? Something out of Grey's Anatomy or E.R. involving doctors in scrubs, an operating room, and, perhaps, lots of blood? To most people, the word "surgery," especially major surgery, denotes time off work, time in a hospital and possibly, some serious pain.

Well, that may soon no longer be the case. Medical technology is always progressing, meaning that Canadians today must be educated to make informed choices when they see a doctor or choose a medical establishment. For example, in a mere ten years, Intuitive Surgical © has revolutionized the medical landscape through its innovative robot-assisted surgery technology, called the da Vinci Surgical System. The unique da Vinci robotic surgery tool (named after Leonardo da Vinci himself, because of his keen interest in human anatomy as well as in early versions of the robot) is designed to offer "surgeons superior visualization, enhanced dexterity, greater precision and ergonomic comfort for the optimal performance of [minimally invasive surgery]."

Instead of conducting a surgery in the traditional manner, the surgeon no longer directly contacts the body, but is able to control the robotic arms of the da Vinci machine to actually complete the surgery. This allows the surgeon to have more control over the procedure taking place, while at the same time limiting any imprecise movements that may be inadvertently caused by the human hand. In addition to this, the surgeon is able to make use of tiny holes through which even major surgeries can take place, thus reducing the need for some types of open surgery. Yet the "look and feel" of open surgery is maintained by the use of tiny real-time cameras (called laparoscopic cameras) to better study the internal organs as the surgeon completes the surgery. What is different about da Vinci cameras is that they are in high definition and 3D, allowing the surgeon to carefully visualize the tissue in order to minimize the impact of the surgery on the patient.

The surgeon sits at the surgeon console, which controls the robotic arms of the da Vinci machine which actually enter the patient's body. Observers have often claimed that this appears as if the surgeon is playing a video game, as he/she is positioned in such a manner that they are able to focus on the video feed from the cameras, while their fingers operate much like they would in a traditional surgery. In fact, the latest da Vinci offers four robotic arms that can be manipulated by the surgeon, allowing him/her the option of single-handedly completing surgeries that previously required two surgeons. In addition, flexible and versatile EndoWrist® instruments used in the robotic arms also have a realistic wrist-like function, permitting the surgeon maximize dexterity in the operation.

Ultimately, there are many benefits offered by robot-assisted surgeries like these, both for patients, and for the doctors serving them. For patients, many of the more invasive surgeries such as cardiac surgery or a hysterectomy, can now be achieved through several small 2-3 cm holes. This greatly reduces recovery time, scarring and blood loss, as well as the time spent by a patient in pain or discomfort due to the smaller impact on the body of this type of surgery. However, cautions Dr. Goldenberg, an expert on robotic surgery and chairman of Urology at University of British Columbia, it is important to remember that this is still major surgery performed through small incisions, and there are still potential risks involved. However, "There is no question that, in most cases, recovery is faster and when all things go well, it is a fantastic procedure," he shares.

Doctors are able to successfully complete more minimally invasive surgeries, simplify complex surgical procedures by causing less bleeding, increase the range of possible procedures in difficult patients, and also to reduce their levels of fatigue.

The da Vinci Prostatectomy procedure is currently the fastest-growing treatment for prostate cancer, which is the second leading cause of cancer-related death in men.

Maximizing The Benefits Of Breast Exams

BY: SHONA RAMCHANDANI

Most women today are aware of the risks of developing breast cancer, and can take preventative measures by ensuring regular mammograms after the age of 40. Mammograms consist of a detailed, low-dose X-ray of the breast, using a mammography machine to examine breast tissue.

Today, the use of Magnetic Resonance Imaging (MRI or MR) has enhanced the level of detail available to radiologists and technologists screening for breast cancer, when used in addition to mammograms. This technology is recommended by the National Cancer Institute for women who are at a higher risk of being diagnosed with breast cancer, such as having a history of breast cancer in themselves or their families, increased body weight or alcohol use, age and other factors.

According to radiologyinfo.org, "Detailed MR images allow physicians to better evaluate various parts of the body… that may not be assessed adequately with other imaging methods." Used as a supplemental tool, benefits associated with MRIs in screening for breast cancers include:

- Less exposure to ionizing radiation
- Increased comfort during the screening process
- Increased discovery of abnormalities not visible in other imaging techniques
- Decreased risks to the patient
- Ability to screen augmented or dense breast tissue, which are harder to evaluate with a traditional mammogram alone

Thus, abnormal changes in breast tissue detected by mammograms can be investigated in more detail using supplemental breast MRI technology, allowing screening for cancers that may previously have gone undetected.

Advances In Colonoscopy Screenings: Virtual Colonoscopy

BY: SHONA RAMCHANDANI

Recent medical advances have allowed patients to benefit from less invasive methods of screening for major illnesses. One type of screening, called a colonoscopy, is to screen for abnormal growths in the large intestine, which may turn into cancer.

Risk factors include the previous presence of growths, family history, or the presence of blood in the stool. According to radiologyinfo.org, "The goal of screening with colonography is to find these growths in their early stages, so that they can be removed before cancer has had a chance to develop."

In the past, screening for colon issues was possible only through inserting an endscope (micro-camera used to view the inside of a human body) through the rectum of the patient. Nowadays, CAT scanning is a less-invasive technology offering a 3-d X-ray image of the colon instead.

Prior to a virtual colonoscopy, the patient is required to empty the colon by using laxatives and limiting food intake. During the process, a tube is inserted into the rectum to fill the colon with air. Then, X-rays are directed at that area of the body from multiple angles, allowing for images of different "slices" of the anatomy to be taken. These images that are then transferred "virtually" to a computer for a complete examination by the physician. According to medicinenet.com, "When properly performed, virtual colonoscopy can be as effective as optical colonoscopy. It can even find polyps 'hiding' behind folds that occasionally are missed by optical colonoscopy."

Radio Surgery & Radio Therapy

BY: ELEKTA INC.

The treatment of cancer varies depending on a number of factors including the type of cancer and tumor, location and amount of disease, as well as the general condition of the patient. The treatments are normally designed to either kill or remove the tumor or bring about its destruction by depriving it of signals needed for cell division.

The most common types of treatment are surgery, radiation therapy and chemotherapy. Other treatments include immunotherapy, monoclonal antibody therapy and bone marrow transplantation.

Cancer treatment makes demands of integrated medical services and it is often a joint decision by the physician and the patient about which treatment to use and in what order. Today, medical information is easily available on the Internet providing patients with more decision-making power. As a result, patients in many countries are more empowered than ever before with more preferring non-invasive procedures.

Of the three common treatment methods for cancer, radiation therapy is often the least traumatic to the patient and at the same time the most cost-effective.

Radiation therapy and radiosurgery are chosen for more and more patients. Radiation therapy is the use of high-energy radiation from x-rays, gamma rays, neutrons and other sources to kill cancer cells and shrink tumors. Radiosurgery is a therapeutic radiation technique, applying a field of radiation using multiple, focused, finely collimated radiation beams with surgical precision in a single session.

Today, approximately half of all patients in developed countries who are diagnosed with cancer are treated with radiation therapy, often in combination with other treatment, at some stage of their illness. More advanced, precise and accurate methods are expected to increase the role of radiation therapy in the future.

Colorectal Cancer: The Future Of Personalized Medicine

BY: SHONA RAMCHANDANI

According to the Canadian Cancer Society (www.cancer.ca), approximately one in four Canadians will die of cancer, and approximately 40 per cent of women and 45 per cent of men will develop cancer during their lifetimes. No wonder then, that a cure for cancer is long overdue. An innovative new approach to cancer prevention, detection and treatment is on the horizon. The idea now is to personalize drug therapies to the unique biological profile of the individual being treated.

"Each cancer has its own signature that translates to unique behavior, in response to treatment. Given these differences, treating all… cancer patients in the same way with the same drugs at the same time does not make sense anymore," explains Dr. Benoit Samson, a medical oncologist at Hôpital Charles LeMoyne in Quebec.

Overall, the second most lethal cancer affecting Canadians is colorectal cancer. Take the example of John McCulloch, a young Canadian from Vancouver who was diagnosed with colorectal cancer in his late thirties. At the point at which he was diagnosed, the cancer was already in Stage IV, the stage at which a cancer has spread from the originally affected organ (in his case, the colon) to other parts of the body. This is usually very difficult to treat. Chemotherapy, a mixture of drugs (often referred to as a 'drug protocol'), is typically administered to a patient for this type of cancer in the hope that the cancer cells would be destroyed. "You can only hope they kill the bad stuff before they kill the good stuff," says John. The side-effect of chemotherapy alone is that it also kills viable body cells, ultimately taxing the body's vitality during the process. Also, chemotherapy drugs can become ineffective quickly, leading to fewer long-term benefits for the patients.

When John's drug protocols stopped being effective, a lucky coincidence occurred. At the time, a new trial drug for colorectal cancer had just become available, and John found out that he had the right biology to benefit from this treatment. This is the future of personalized medicine. Drugs tailored to work with an individual's genetic make-up seem to eliminate some of the side effects seen with other cancer treatments, while at the same time boosting the patient's success rate.

What John had was a "biomarker" that told doctors that the trial drug had a higher likelihood of being effective in his body. Dr. Samson defines a biomarker as "biological molecules found in a patient's blood, body fluids, tissues or within the tumour itself, that predicts or is responsible for, a response to a specific treatment." In this case, the biomarker used for John is the "K-RAS" gene that is found in all colorectal cancer patients. If the K-RAS biomarker was mutated in any way, he would not have been eligible for the trial. According to Dr. Samson, the reason is because this revolutionary treatment works by blocking EGFr (Epidermal Growth Factor receptor), a growth protein at the surface of a cell, from connecting with the cancerous nucleus through a protein pathway. This prevents the cancer from continuing to propagate itself, as the EGFr protein is responsible for the proliferation of cancer cells. Anti-EGFr therapies, like John's trial therapy, rely on the normal K-RAS gene to shut down this intra-cellular signaling pathway. Dr Samson explains that these anti-EGFR treatments are the only treatments that have been shown to delay the progression of cancer and increase the survival of the patient, once traditional chemotherapy treatments have failed.

"Within just a week of receiving panitumumab [an anti-EGFr therapy], I felt much better," says John, sharing how it was much gentler than chemotherapy on his body and helped alleviate numerous painful symptoms he had been experiencing. Those five months were his best in cancer treatments yet, he says. Unfortunately, in December of 2009 his cancer progressed.

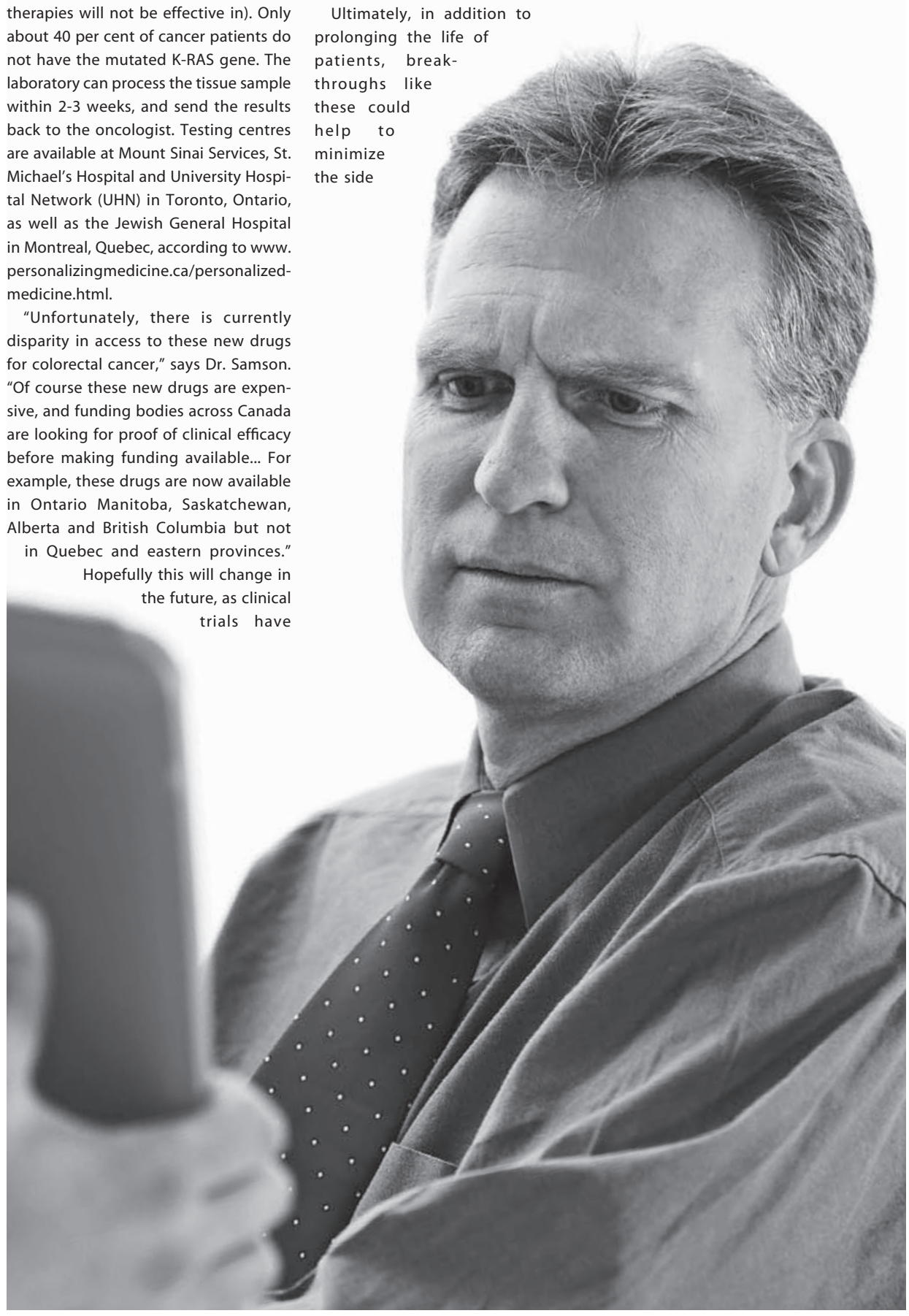
Patients like John, who are looking for a third line of cancer treatment after chemotherapy has ceased to be effective, should work with their oncologist to get tested for the K-RAS mutation. This is done by sending a biopsy of the live tumour to a testing centre. The centre will test for the presence of mutated K-RAS (K-RAS is known as a negative predictive biomarker, because if it is mutated, it tells doctors what patients anti-EGFr therapies will not be effective in). Only about 40 per cent of cancer patients do not have the mutated K-RAS gene. The laboratory can process the tissue sample within 2-3 weeks, and send the results back to the oncologist. Testing centres are available at Mount Sinai Services, St. Michael's Hospital and University Hospital Network (UHN) in Toronto, Ontario, as well as the Jewish General Hospital in Montreal, Quebec, according to www.personalizingmedicine.ca/personalized-medicine.html.

"Unfortunately, there is currently disparity in access to these new drugs for colorectal cancer," says Dr. Samson. "Of course these new drugs are expensive, and funding bodies across Canada are looking for proof of clinical efficacy before making funding available... For example, these drugs are now available in Ontario Manitoba, Saskatchewan, Alberta and British Columbia but not in Quebec and eastern provinces."

Hopefully this will change in the future, as clinical trials have already shown results, indicating the effectiveness of these treatments.

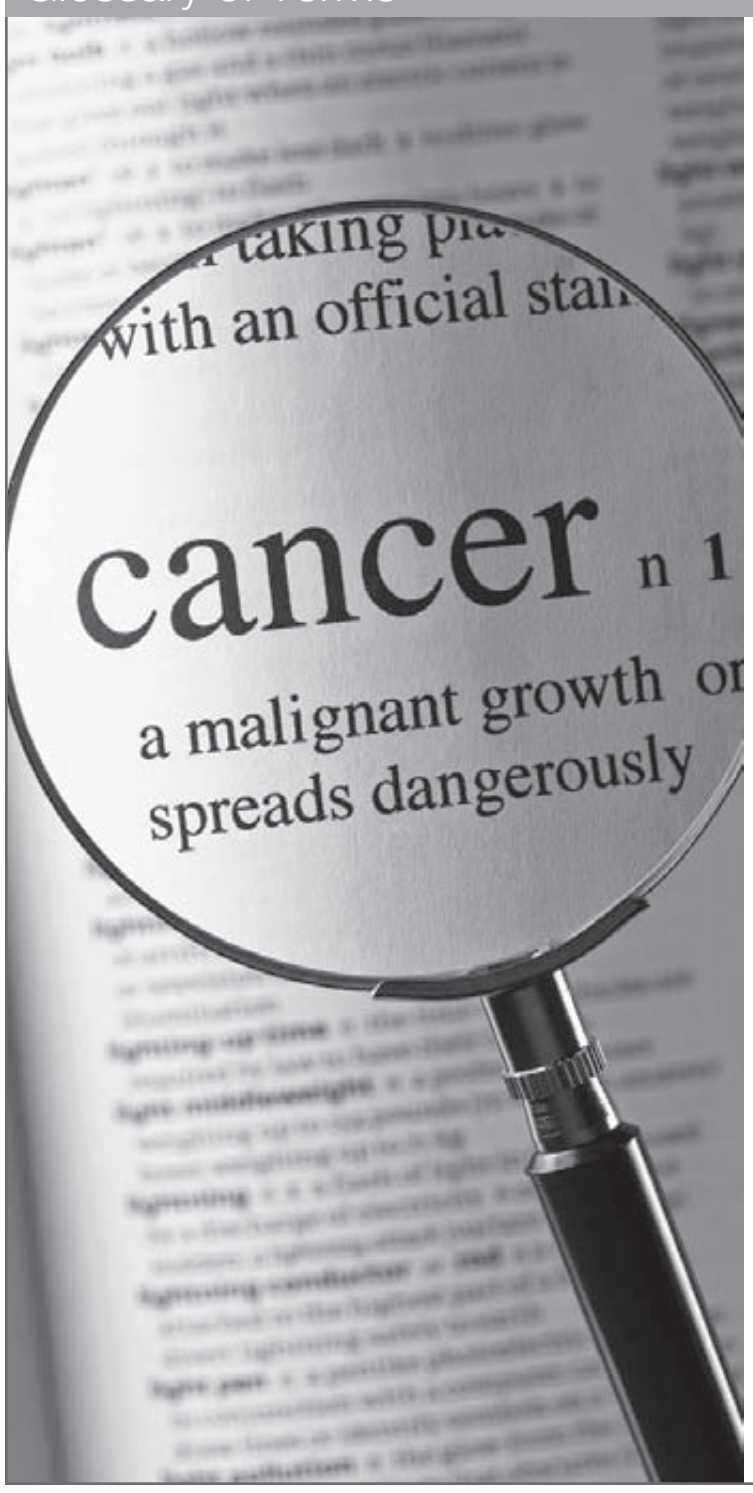
Overall, the efficacy of drugs available to manage and treat colorectal cancer is improving. Life expectancy for cancer patients without any treatment is approximately six months, while undergoing chemotherapy alone extends this to 8-9 months in the final stages of their cancer. However, "today, with the new treatments, life expectancy has almost tripled to 24-26 months," shares Dr. Samson.

Ultimately, in addition to prolonging the life of patients, breakthroughs like these could help to minimize the side effects associated with cancer-fighting drugs, help spur streamlined research, boost drug specificity and even target at-risk groups for screening for early cancer detection. After all, cancer is genetically tailored to us, so it is only natural that the treatments should be tailored to us as well. These types of innovations have finally opened the door to a revolution in cancer-fighting technologies, bringing us ever closer to a cure.



"The side-effect of chemotherapy alone is that it also kills viable body cells, ultimately taxing the body's vitality during the process."

Glossary of Terms



Benign	The term benign is used when describing tumors or growths that do not threaten the health of an individual. Benign is the opposite of malignant.
Cancer	Uncontrolled, abnormal growth of cells.
Carcinoma	The most common type of cancer. Malignant cancer that arises from epithelial cells.
Chemotherapy	Treatment of cancer diseases with the aid of chemicals that eliminate diseased cells.
Computerized tomography (CT)	A radiological method of producing anatomical structures by means of layering, using computer technology.
Fraction	Part of the total radiation dose, delivered at a daily treatment.
Gamma Knife® surgery	Stereotactic radiosurgery with Leksell Gamma Knife®.
IGRT	Image guided radiation therapy of cancer, where high precision and accuracy is achieved using high resolution three-dimensional X-ray images of the patient's soft tissues at the time of treatment.
IMRT	Intensity modulated radiation therapy of cancer, where instead of being treated with a single, large, uniform beam, the patient is treated with many very small beams; each of which can have a different intensity.
Invasive	A technique that penetrates the skin, skull, etc. The opposite of non-invasive (bloodless).
Linear accelerator	Equipment for generating and directing ionizing radiation for treatment of cancer.
Metastases	Secondary malignant tumors originating from primary cancer tumors in other parts of the body.
Magnetic resonance imaging (MRI)	Measures the difference in liquid resonance content in various parts of the body with the aid of magnetic fields.
Malignant	A clinical term that is used to describe a clinical course that progresses rapidly to death. Can spread through metastases. Malignant is the opposite of benign.
Meningioma	Tumor of the central nervous system that develops from cells of the meninges, the membranes that cover and protect the brain and spinal cord.
Multileaf collimator	An accessory to the linear accelerator, working like an aperture. With a large number of individually adjustable metal leaves, the treatment beam can be shaped to the size and shape of the target volume.
Oncology	The study of tumor diseases.
Radiation therapy	Fractionated ionizing radiation treatment of cancer.
Radiosurgery	Non-invasive surgery which a high, single dose of precise ionizing radiation replaces surgical instruments.
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A Miracle Happened For Wes Laporte

Today, at 18, Wesley Laporte should be gathering up his textbooks to join classmates at Dalhousie University in Halifax, where he was accepted to study kinesiology. Instead, thanks to the Canadian healthcare system, he has lived through a medical nightmare, despite taking all the right steps to guard his health.

BY: SHONA RAMCHANDANI

Dr. Farid Fata, M.D., F.A.C.P.

Wes' story begins when he was 15. Presenting with an unusual case of hives, Wes' doctors noticed that his blood tests showed low red and white blood cell counts, which did not restore to normal levels after repeated tests. Combined with hives, this should have been a clear indicator of possible myelodysplastic syndrome (MDS), or pre-leukemia. (Leukemia is a deadly cancer of the bone marrow, according to the Canadian Cancer Society). Instead, Wes was sent from one doctor to another, losing precious time before he was eventually told that he had a genetic mutation causing the MDS. Perhaps it was not entirely Wes' doctors fault, as "it is almost unheard of to see MDS in anyone younger than 65, never mind in a teenager," says Kathy Heptinstall, operating director of the MDS Foundation. Yet, the delay has cost Wes and his family much mental and physical stress, and a host of unpaid medical bills. Most of all, this has cost Wes time that he does not have, an unforgivable situation when the mission of Health Canada is supposedly "improving the lives of all of Canada 's people… as measured by…effective use of the public health care system."

Finally, Wes' London, ON doctors admitted that it was too late to help him. All he could do was to wait for a bone marrow transplant, which could take several months. In addition, Wes had to control his MDS, without which he could not get a successful transplant, but was told that the drugs to do this were not available. "In other words," says Tracy Bevington, CEO and president of EcuMedical Resources International Ltd. (ERI), a Canadian company founded to assist Canadians with getting the most healthcare options, "this meant that he and his family were basically sent home to wait for his death."

Wes' only remaining options now lay in the United States, where Wes' treatment would have to be paid for out-of-pocket, a cost unimaginable for his middle-class Canadian family. Wes' dad, Brian, had already given up his job to take care of Wes, and his mom, Maureen, works on an assembly line, making barely enough for the family to scrape by. Luckily, on August 1, 2009, Wes' family was introduced to ERI, which offered not only to connect Wes to the care he so desperately needed, but also to help fund it. "The connection with Ecumedical worked out great!" says Wes warmly. "They pretty much saved my life when nothing was happening for me in Canada." By August 5, 2009, ERI had already arranged Wes' treatment with world-renown oncologist Dr. Farid Fata (M.D., F.A.C.P), at Michigan Hematology Oncology, P.C. For 4 weeks, Wes was looking and feeling better than he ever had in the last three years. But, tragically, it was already too late. By the fifth week, Wes' MDS had become full-blown leukemia.

Wes was doomed. A bone marrow transplant cannot take place if leukemia is present. Without this, Wes had no chance of fighting the disease that now seemed poised to take his life. Again, were it not for ERI, the Laporte family would have met another dead-end in their struggle to save Wes, as this exploded the medical costs. "My wife Deborah & I told the family and the doctors that [we] would sell everything if we had to, but we are not quitting on Wes," says Mr. Bevington.

ERI immediately put fundraising efforts into motion, setting up a Trust Fund where friends, family and supporters could donate toward Wes' hospital bills. ERI also found the MDS International Foundation in New Jersey, which helped garner media attention for Wes' situation. In late November, the International Transplant Foundation in Bethesda, DC, finally agreed to help Wes: "If, through [ERI's] efforts…you can get [Wes] into full remission, we will bring him to Bethesda for the transplant." They would also contribute 1.2 million US dollars toward his hospital bills!

Thus, the next phase in Wes' battle for his life began. The following 2.5 months were spent in hospital, undergoing chemotherapy treatments, blood transfusions, platelet changes, etc. However, on Christmas Eve 2009, the family called Tracy with some very sad news—Wes was not going to make it. He was in great pain and very weak. Because of the leukemia, he was white and swollen, not a state fit for such a young person. Tracy rushed to the hospital to spend Christmas at Wes' side, praying for him with his family.

Desperate, Dr. Fata shared one last idea: Wes could take a "supreme chemo injection," but…he may not survive it. Grasping for hope, the family decided to make that heart-wrenching choice. But their courage paid off: on December 28th, Wes awoke feeling better, and miraculously, tests showed he had no leukemia left in his body! In January, he was transported to Bethesda to prepare for transplant.

Unfortunately, this is not the end of Wes' nightmare. Last minute testing showed the leukemia was back, for which he is now undergoing intense chemotherapy. Once the cancer is in remission again, he will finally be eligible for that transplant. "At that point, I will be in the hospital for six more months," he shares. But Wes is not giving up on his dream to go to college next year. "Hopefully I will make it through this…," he says bravely. And so he should. But his battle is not over yet. The Trust Fund is still many thousands of dollars short of his costs, so if you can help Wes or someone like him, please call EcuMedical Resources International Ltd. at 1 (866) 277-9868 or www.ecumedical.com right now. You could help save a life.

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Wes LaPorte, Patient

A New Lease On Life: The Story of Mr. Roy Rutt

Roy Rutt was once a fit gentleman in his early 70's, and is a father of two, from Kingsville, ON, with savings for a comfortable retirement. However, just over 1½ years ago, he was badly let down by the healthcare system ostensibly designed to protect him. On April 11, 2008, after presenting with a strange lump on his body, he was told by his Canadian doctors that he had non-lymphoma Hodgkin's disease.

BY: SHONA RAMCHANDANI

After completing all the treatment and getting "a clean bill of health," from them, Roy was understandably shocked when he had to go back in for a new lump a mere two weeks later, only to find out that he had been mis-diagnosed the first time. His doctors admitted that his condition was actually Burkitt's Lymphoma: cancer. He had been getting the wrong treatment the whole time!

You can only imagine the frustration and pain that Roy and his family went through after hearing this. "I had to wait a total of five weeks for an appointment with my oncologist," he shares. "In five weeks, a lot of things could happen when you have cancer." Finally, when he got his appointment, his doctor had bad news for him. "She came up and tapped me on the shoulder and said,'you've got two weeks to live.'" His only option left was to take a lethal dose of chemotherapy that weekend.

However, this was not an option. "You see, on Easter weekend in Canada, everything shuts down," explains Roy. As a result, the likelihood of the necessary staff being available for Roy that weekend was slim to none. Fortunately, Roy's son Todd had already been introduced to a possible solution: he had been connected by Ecumedical Resources International Ltd. (ERI), a Canadian facilitator and advocate for health care options, to get quick and minimally invasive surgery for a spine issue in the United States, rather than waiting over two years for Canada's outdated spine surgery. According to Mr. Bevington, CEO and president of ERI, he & his wife Deborah started this business on the premise that Canadians need options when it comes to their healthcare: "We are just people…helping people," he says. No wonder that it was to them that Todd and his brother Derek now turned for help with their father's situation.

Within hours of being contacted by Todd, ERI's Michigan-based radiologist Dr. Stan Halprin, CEO of Harper Metro Radiology, discovered that Roy had a large, life-threatening lump on his liver that had been missed by the Canadians. Roy had to immediately be transported to the US for care. "When I was taken to the US, I had jaundice, I had cancer in the liver, I had cancer in the upper right hand side of my chest, and I had toxic fluid in my body," says Roy. "I did not have two weeks, actually, I had two days to live!"

Within 45 minutes, Roy arrived at the Michigan Hematology Oncology, P.C., ERI's hospital of choice. Tracy Bevington proudly shares, "Mr. Rutt saw a seasoned radiologist, was placed in a 5-star hospital, and was under the direct care of his oncologist, all within just 6 hours," instead of having to wait months for care in Canada. By the morning of Good Friday, Roy was already undergoing a process to remove the blockage on his liver, and within days, he was well enough to begin taking the required treatments for his cancer. Unusually, Derek, his son, reported that "he is happy and upbeat even during chemotherapy." Such is the feeling of someone who can finally trust the care they are receiving.

Thanks to Roy's oncologist, Dr. Farid Fata, M.D., F.A.C.P. and CEO of the Michigan Hematology Oncology, P.C., Roy and his family were soon delivered some good news in 2010: "The jaundice of your liver is down by 90 per cent, and you have a complete clinical recession of your cancer." This time, it was for real. They were, naturally, overjoyed. "It's been a long haul," says Roy, relieved.

Dr. Fata shares, "Cancer is tough, and sometimes the treatment is even tougher." But with the resources offered by MH/OC through ERI, Mr. Rutt had access to treatments and technologies not available in Canada. "The care that I have had in the US is outstanding – it's head and shoulders above Canada," says Roy.

However, Roy, 74 in May, has narrowly escaped his death sentence. "Today, I have one week of treatment to go, and then I'm finished." Instead of days left to live, he is now ready to live a long and happy life. "I am beginning to feel one helluva' lot better, and I feel really blessed that I have come along as I have," he shares. His goals for the future are to get his health back and to spend time with his family, to make up for the missed time in hospital. "I have seven grandchildren, so I'm gonna' be busy!" He says. Unfortunately for Roy, however, getting the care he needed in the US has also eaten up his savings. "It drains you of all of your resources," he explains, which means it will take him a long time to get back off his feet, being retired. Naturally, he is upset that the Canadian healthcare system even put him in this situation. "Over here, you have only two options—get the care you need in the US, or stay here and they will put you out to pasture," says Roy bitterly.

Thus, connections with companies such as ERI and their caring and compassionate team have offered patients like Roy new hope, and access to resources not currently offered in Canada. "They've been so good to me, they really helped me out," says Mr. Rutt of Ecumedical's assistance. "Now I want to give back." Seems like Ecumedical met its goal of providing the best possible healthcare, to give patients the peace of mind they deserve!

Tracy Bevington, CEO & Founder, EcuMedical Resources International

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