



## Checkpoint Inhibitors: the new kids on the block

By Dr. Margaret Smith,  
General Practitioner in Oncology,  
Vancouver Island Cancer Centre

A new class of systemic therapy is now in use by the BC Cancer Agency, known as Checkpoint Inhibitors. This is immunotherapy that targets the tumour microenvironment by enhancing T lymphocyte activity. Human T lymphocytes have many activating and inhibiting receptors on their cell surface. This keeps the immune system in balance, neither underactive (cancer, infection) or overactive (autoimmunity).

Some tumours are known to escape active T lymphocyte surveillance by binding the inhibitory PD1 (programmed death) receptor on the T lymphocyte to the PD ligand expressed on the tumour cell, thus escaping detection and destruction. Nivolumab and Pembrolizumab are two currently approved

and locally in-use monoclonal antibodies to PD1 receptors that block the receptor from binding to the PD ligand, thus stopping the “check” or block on T cell activation by the tumour. Other Checkpoint Inhibitors that attach to and block the PD ligand on tumour cells are under development. Ipilimumab was the first BCCA approved Checkpoint Inhibitor to the CTLA-4 inhibitory receptor on T-cells, and proved to be a breakthrough treatment for metastatic melanoma. CTLA-4 receptor inhibition occurs centrally in the lymph nodes, while PD1 inhibition occurs in the tumour microenvironment.

PD1 agents are currently available through the BCCA for treatment of advanced melanoma, advanced non-small cell lung cancer, and advanced renal cell cancer. PD1 agents are showing efficacy in gastric,

esophageal, head and neck, Hodgkin’s lymphoma, mesothelioma, and urothelial cancers, so we can expect to see their use expanded in the near future.

Anyone starting therapy with a Checkpoint Inhibitor should not be on corticosteroids or immune suppressants, which would be at cross purposes to their mechanism of action. “Pseudo-progression” or significant growth in a solid tumour is seen early in treatment, due to influx of T lymphocytes to the tumour site. When the course is stayed, significant tumour regression may follow.

Due to broader immune enhancement of T cells by Checkpoint Inhibitors, immune mediated adverse events (IMAEs) may emerge. They begin to appear a few weeks to months into treatment, and sometimes after

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## New resource for prostate cancer patients

*If I were Tom* is a new evidence-based prostate cancer support website. The website follows the story of Tom, a man recently diagnosed with prostate cancer, as he goes through the steps. The waiting. The treatments. The side effects.

As Tom progresses along his journey, website users are encouraged to respond to questions about what they would do (or did do) in Tom’s place. Users then see real-time stats on what others chose.

To supplement this narrative, there are brief video clips on the website (and additional ones on YouTube), featuring conversations with people with first-hand experience

and experts in their fields who discuss first steps after a diagnosis, treatment options, side effects, psychosocial needs, and healthy lifestyle behaviours.

With the self-reflection that the overall tone and content of the website encourages, the aim is to recreate some of the benefits of

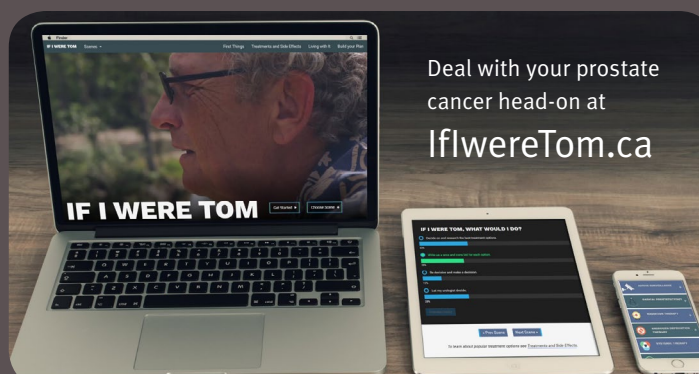
an in-person prostate cancer support group for men who cannot access a group or are uncomfortable doing so.

The website was developed by Men’s Health Research Program at the University of British Columbia (led by Dr. John Oliffe) as part of a multi-year research project, and is funded by

the Canadian Institutes of Health Research and the Prostate Cancer Foundation BC.

*If I were Tom* recently received a platinum award for excellence in digital communication by the International Association of Marketing and Communication Professionals.

Visit the website at [IfIwereTom.ca](http://IfIwereTom.ca)



Deal with your prostate  
cancer head-on at  
[IfIwereTom.ca](http://IfIwereTom.ca)

# InspireHealth – a valuable resource for patient support

There has been a quiet yet monumental shift at InspireHealth these past few years to the advantage of cancer patients and the physicians who care for them. InspireHealth is a not-for-profit supportive cancer care organization partially funded by the BC Ministry of Health since its inception in 1997. InspireHealth started in Vancouver with regional centres opening in Victoria and Kelowna 5 years ago. In the past, InspireHealth was viewed by many as an organization focussed on the promotion of supplements and naturopathic remedies for cancer, not always in coordination with conventional care. InspireHealth also charged a membership fee to all patients who subscribed to their services.

Call 1-888-734-7125 to request InspireHealth program brochures for your office.

Today, InspireHealth serves as an evidence-based resource for cancer patients, their families and physicians. They provide supportive care programs and services to enhance the quality of life for people living with cancer including personalized (non-prescriptive) nutrition, exercise therapy, stress management and counselling. All are provided at no charge and designed to support patients both during and after

standard care received by the BC Cancer Agency and other cancer care specialists.

“Family physicians lead InspireHealth’s clinical team that includes clinical counsellors, registered dietitians, nutritionists and exercise therapists,” notes CEO Dr. Janice Wright. “We are a supportive resource aligned with the BC Cancer Agency and primary care oncology. InspireHealth’s cancer rehabilitation program has been likened to the Healthy Heart Program. We provide tools for self-management and support mental health for cancer patients and families during and after cancer treatments. Many people come in feeling stressed and overwhelmed by cancer and we are here to help with a non-judgmental, supportive, and evidence-based approach.”

InspireHealth also has an active outreach program hosting webinars for patients and families, presenting one-day programs in communities around the province and offering patient consultations by telephone or videoconference through a secure platform.

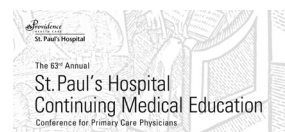
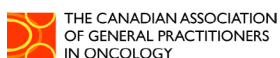
The partial funding from the BC Ministry of Health funds the clinical services at



Left to right: Drs. Lori McFarlane, Vancouver Island (Victoria) Centre Family Physician, Janice Wright, CEO, and Hannah Nette, Director of Clinical Services and Vancouver Centre Family Physician

InspireHealth and they rely on corporate sponsorship, grants and individual donors to operate their supportive classes and group programs.

Contact Dr. Janice Wright at [jwright@inspirehealth.ca](mailto:jwright@inspirehealth.ca)  
Visit [www.inspirehealth.ca](http://www.inspirehealth.ca)



## Five oncology CME events you won't want to miss:

**Fraser Oncology Education Day, Saturday, May 27** –presented by Fraser Health and the BC Cancer Agency at Surrey Memorial Hospital. Featuring practical perspectives on the treatment of cancer in community-based practice and opportunity to learn of innovations, present and upcoming. Full details and registration at [fraseroncologyeducation.ca](http://fraseroncologyeducation.ca)

**Canadian Association of General Practitioners in Oncology (CAGPO) Annual Conference, September 28 – October 1** at the Hotel Omni Mont-Royal in Montreal. Practical and relevant topics for novice to expert oncology practices, [www.cagpo-annual-conference.ca](http://www.cagpo-annual-conference.ca)

**GPO Case Study Day, November 17** –presented by the Family Practice Oncology Network at the Child & Family Research Institute. An afternoon of oncology case-based discussion on emerging and prevalent challenges faced by General Practitioners in Oncology and Nurse Practitioners. Registration opens this summer at [www.fpon.ca](http://www.fpon.ca).

**Family Practice Oncology CME Day, November 18**, at the Child & Family Research Institute – the Family Practice Oncology Network’s annual full day conference featuring leading speakers and workshops on key issues and developments in cancer care. Registration opens this summer at [www.fpon.ca](http://www.fpon.ca).

**St. Paul’s Hospital Conference for Primary Care Physicians at the Vancouver Convention Centre, November 21-24**. Don’t miss their November 23 half-day Oncology focus, [stpaulscme.org](http://stpaulscme.org)

# BC Cancer Agency guidelines for intensive surveillance of colorectal cancer survivors

Authored by Dr. Raziya Mia, GPO and Clinical Coordinator, Education, Family Practice Oncology Network, and reviewed by Dr. Howard Lim, Medical Oncologist, BC Cancer Agency Vancouver Centre

Family Physicians are frequently called on to follow patients who have completed adjuvant therapies of Colorectal Cancer (CRC). The rationale and recommendations are explained in this review.

## Why such intensive vigilance?

CRC recurrence risk is greatest in the first 2-2.5 years; 80 % recur in the first 3 years and 95% in the first 5 years following diagnosis. A vitally important point is that CRC remains potentially curable even with distant spread of disease, particularly if there is low tumour burden that may be amenable to curative surgical resection.



Dr. Raziya Mia



Dr. Howard Lim

## Who should be frequently monitored?

Asymptomatic CRC patients treated with curative intent who have a good functional status and can tolerate future treatment, including surgery or chemotherapy, if they were to relapse.

More immediate investigation is required for patients who present with symptoms such as nausea, abdominal or pelvic pain, altered bowel function, bloating, flatulence, melena, rectal bleeding, abnormal voiding, sciatica, fatigue, and unexplained weight loss.

## Where do recurrences occur?

Recurrences can occur in distant areas, most commonly in the liver and lung and much less commonly to bone, brain, spleen, and adrenal glands. Recurrences can also occur in the peritoneal or retroperitoneal areas, and locoregionally. As well, there is an increased risk of second or metachronous CRC cancer.

## When, What, and How are CRC patients followed optimally?

Recommendations are based on the stage of disease as follows:

### Stage 0 (in-situ disease only) and Stage I (T1-2, No, Mo)

- Follow up completion colonoscopy within the 1<sup>st</sup> year of diagnosis. Colonoscopy is otherwise at the discretion of the endoscopist and may be repeated in 1 year or in 3 to 5 years. No routine imaging or CEA follow up is indicated.

### Stage II (T3/T4, No, Mo), Stage III (Any T, N1-2, Mo), and Stage IV (Any T, Any N, M1) with no evidence of disease (NED)

- **Recommendation #1: Clinical review**  
History and Physical Examination q 3-6 months x 3 years, then q 6 months x 2 years.
- **Recommendation #2: CEA**  
CEA at each follow up visit q 3-6 months x 3 years, then q 6 months x 2 years:  
CEA < 15 ng/ml may be false positive; hence, repeat within 28 days. If true positive evaluate further with colonoscopy, CT scan, and consider PET/CT scan. Negative investigations require repeat CEA and imaging q 3 months until disease is identified, or until CEA stabilizes or declines.
- **Recommendation #3: Imaging**  
Stage II / Stage III: CT Chest/Abdomen/Pelvis annually x 5 years  
Stage IV with NED: CT Chest/Abdomen/Pelvis q 3-6 months x 2 years, then q 6-12 months x 3 years
- **Recommendation #4: Colonoscopy**  
Follow up completion colonoscopy within the 1<sup>st</sup> year of diagnosis. Colonoscopy is otherwise at the discretion of the endoscopist and may be repeated in 1 year or in 3 to 5 years.
- **Recommendation #5: Lifestyle**  
Encourage healthy lifestyle changes, including a balanced diet and exercise program. There is insufficient evidence to recommend ASA for CRC prevention.
- **Recommendation #6: Transfer of Care**  
Effective Transfer of Care from oncologist to primary care physician requires detailed follow up recommendations, identification of specific responsibilities, and clear direction on surveillance intervals.

The follow-up guidelines can be found on the BC Cancer Agency Website: [www.bccancer.bc.ca/health-professionals/professional-resources/cancer-management-guidelines/gastrointestinal/colon#Follow-up-and-Surveillance-of-Rectal-Cancer-Patients-Treated-with-Curative-Intent](http://www.bccancer.bc.ca/health-professionals/professional-resources/cancer-management-guidelines/gastrointestinal/colon#Follow-up-and-Surveillance-of-Rectal-Cancer-Patients-Treated-with-Curative-Intent)

Contact Dr. Raziya Mia at [rmia@bccancer.bc.ca](mailto:rmia@bccancer.bc.ca)

# Rural Nigeria benefits from GPO training grad's expertise

One would be hard pressed to find a physician more enthusiastic to improve cancer care in rural and remote communities than Dr. Kelechi Eguzo. Dr. Eguzo, originally from the City of Aba, Nigeria, completed the Family Practice Oncology Network's General Practitioner in Oncology (GPO) Training Program in 2013 as an international guest of now retired BC Cancer Agency Oncologist, Dr. Meg Knowling. Cancer patients in hundreds of small Nigerian communities have benefitted from this interaction which all began with an urgent Internet search:



Dr. Kelechi Eguzo

I was Chief Medical Director of Aba's Nigerian Christian Hospital, a smaller sized institution serving about 20,000 patients annually. One night, in my multi-faceted role of family physician, sometimes surgeon, and hospital administrator, I was faced with a cancer patient whom I wasn't sure how to help. An online search led me to a BC Cancer Agency protocol and to the very helpful, Dr. Knowling. She walked me through the protocol and I could then ensure the best outcome for my patient. We have been conversing ever since and, with her support, I built many useful connections within the Agency and ultimately had the opportunity to complete the GPO Training Program to improve my oncology skills and knowledge."

## The Saskatchewan/Nigeria Connection

Since then, I moved to Saskatoon to complete a Master's degree in Public Health at the University of Saskatchewan, and am now working on a PhD to improve cancer control in Nigeria. I also teach research skills to family

medicine residents at the University and work closely with local oncologists collaborating on research projects and seeking their input on cases for my Nigerian colleagues. I even learned to ice skate...sort of!

My connection to Nigeria remains strong as does my commitment to improving community cancer care. There is no organized cancer control system in my country. In remote areas, family physicians often handle everything from diagnosis, to administration of

chemotherapy, to surgery and follow-up care. We also arrange radiation therapy which can involve a journey of 1,000 kilometres or more.

## Sharing Knowledge and Developing Resources

I work with a primary health care development agency in Nigeria striving to improve access to care through cancer care education, developing policy and building partnerships. We presented our second series of four-day cancer care conferences in two locations this past March which were attended by over 200 family physicians and nurses many of whom are the only source medical expertise in their communities.

We also published the second edition of an accompanying clinical resource, *Where There is No Oncologist – Manual of Practical Oncology in Resource-Limited Settings*, to encapsulate the material for ongoing reference. The manual is freely available online (<https://www.researchgate.net/>



Dr. Kelechi Eguzo shares his oncology expertise with colleagues throughout Nigeria and beyond.

publication/236964244\_Where\_there\_is\_no\_oncologist\_Manual\_of\_practical\_oncology\_in\_resource-limited\_settings) and includes contributions from the BC Cancer Agency's Dr. Pippa Hawley on palliative care and management of cancer pain. We continue to build a lively social media network as well that encourages collaboration, the sharing of first-hand information and case-based discussions that enable local health care teams to improve care.

## A Fan of GPO Training and Looking Ahead

The GPO Training Program was the ideal opportunity to improve my oncology practice. I learned more about oncology than I ever knew before including cancer management protocols, how radiation works, the most effective treatment options for patients diagnosed late, and especially how to manage symptoms – the biggest blessing for my patients. I now also serve as a reliable reference for my Nigerian colleagues on how to best manage their cancer patients. The impact is significant impact and deeply satisfying.

British Columbia shares some parallels with Nigeria in that the role of the family physician and GPO is becoming even more significant in cancer care especially with the upward trend in incidence. The Agency's Family Practice Oncology Network provides a unique and outstanding training program for GPOs and I see opportunities for greater collaboration to extend the benefits immeasurably.

Contact Dr. Kelechi Eguzo,  
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## Next GPO training course begins September 11, 2017

The GPO Training Program is an eight-week course offering rural family physicians and newly hired Agency GPOs and Nurse Practitioners the opportunity to strengthen their oncology skills and knowledge. The program covers BC and the Yukon (and sometimes Nigeria) and includes a two-week Introductory Module held twice yearly at the Vancouver Cancer Centre followed by 30 days of flexibly scheduled clinical rotation at the Centre where participants' patients are referred. The Introductory Module meets the certification criteria of the College of Family Physicians of Canada and has been certified by the University of British Columbia's Division of Continuing Professional Development. Full details at [www.fpon.ca](http://www.fpon.ca)

# Medical assistance in dying – experience and reflections from the Yukon

For a vast territory with only 40,000 people, Yukon health care providers put forth much care and effort to offer a patient-centred approach to Medical Assistance in Dying (MAID). Three local patients ended their lives with MAID shortly after the legislation passed in June 2016 – one via intravenous therapy (IV) in-hospital, one via IV therapy at home, and another via oral therapy at home. Demand slowed afterward, and the Yukon team seized the opportunity to reflect on the process and enhance their approach.

Four members of the health care team leading these efforts share their insight: Drs. Sally Macdonald and Robin Jamieson both Whitehorse General Practitioners in Oncology, Dr. Bob Zimmerman, family physician and member of the Yukon Medical Council that set the standards and adapted MAID policies for the Yukon, and Josianne Gauthier, Clinical Pharmacist at Whitehorse General Hospital. Their growing experience and coordinated approach brings knowledge and perspective that will benefit patients and families for whom MAID is an option.

These professionals believe strongly that family physicians who are supportive of MAID, should lead the process for their patients; that every MAID patient should be able to choose the therapy they prefer; and that there is much to be gained from sharing knowledge with other jurisdictions.

## Family physicians know their patients best

Dr. Robin Jamieson: MAID is now part of the medical paradigm – part of a full medical practice for which patients are seeking our care including from an emotional, ethical and legal perspective. The competency assessments including mental health and interpersonal and interfamilial dynamics are often best completed by their primary care provider.

Dr. Bob Zimmerman: We want to avoid the evolution of MAID as a subspecialty. Many here worked to ensure that MAID is accessible throughout the Yukon and we are striving to preserve the idea that willing family physicians, who are closest to these patients and their families, and who understand their circumstances, take the lead. In our



The Yukon team shares their insight on MAID: (left to right) Josianne Gauthier, Drs. Sally Macdonald, Robin Jamieson and Bob Zimmerman.

experience, many family physicians are quite willing to provide MAID for their own patients.

## Autonomy of choice

Legislation regarding the type of MAID therapy used (oral versus IV), and whether a physician's attendance is required until death, varies significantly by country and by province. In the United States, for example, MAID is only provided by oral therapy and a physician's presence is not required. In Quebec, MAID is only permitted through supervised IV therapy administered in a health care facility. In Alberta and BC, both therapies are available, but the requirement of a physician's presence in most regions means that, in practice, IV therapy is most often the definitive option.

In the Yukon, patients decide which therapy best meets their needs and physicians are encouraged to offer their presence as opposed to having it required.

Dr. Sally Macdonald: IV therapy is painless, smooth and efficient, but it is scheduled and medically based. Oral therapy may take hours, but can be empowering for patients as they can determine when their death will begin. This sense of control can be pivotal, and in fact, with time to reflect, research shows almost 30% of patients choose not to go forward. Our colleagues in palliative care are supportive of such a period of ambivalence.

Dr. Bob Zimmerman: Patient centred care

enables the patient's control of their disease management including end-of-life. We want to maintain the freedom and the capacity to provide patients and their families with the therapy that they decide is best for them. It's their decision as well on whether to have a physician present at the time of death and many choose not to.

## Sharing the knowledge

The Yukon team continues to build its MAID expertise particularly with regard to refinement of the oral therapy. Research efforts are centralized at the Whitehorse General Hospital Pharmacy and led by Josianne Gauthier. "We are building a network of research colleagues in Washington State and are adapting their research to ensure the process is reliable and palatable for everyone involved. We are also sharing this research with our Alberta colleagues so we can all build capacity."

Contact any member of the above Yukon team via Dr. Sally Macdonald: [maczim@northwestel.net](mailto:maczim@northwestel.net)

## More detail

BC College of Family Physicians: <http://bccfp.bc.ca/professional-development/resources-for-all/medical-assistance-dying/>

Yukon Medical Council: [www.yukonmedicalcouncil.ca/pdfs/MAID.pdf](http://www.yukonmedicalcouncil.ca/pdfs/MAID.pdf)

## Why refer a cancer patient to the dentistry department?

By Dr. Allan Hovan, Provincial Professional Practice Leader, Oral Oncology/Dentistry Program, BC Cancer Agency

Clinicians are often surprised to hear that we have dental clinics within most of the regional cancer centres within the BC Cancer Agency (Vancouver Island is the notable exception).

Any Agency-registered BCCA patient is eligible for a no-charge dental consultation either before, during or after their cancer care has been delivered.

There are subsets of patients (whether dentate or edentulous) who should definitely be referred to Dentistry before starting their cancer therapy. Included in this group are:

- Patients receiving radiotherapy (+/- chemotherapy) for head and neck cancers, including patients with laryngeal and thyroid cancer;
- Patients about to start myelosuppressive or stomatotoxic chemotherapy protocols;
- Patients who are to receive a bone marrow or stem cell transplant for management of a hematologic malignancy;



Dr. Allan Hovan

- Patients about to start anti-resorptive therapy (typically with an oral or IV bisphosphonate) for management of cancers which tend to metastasize to the bones.
- Of course, any patient with oral or dental pain that develops during their cancer treatment should be referred to the Dentistry Department for management. Untreated dental infections can lead to delays in the all-important cancer care. As some treatments create transient bacteremia, all dental appointments need to be coordinated in discussion with the patient's treating oncologist.

Cancer therapies can cause some temporary or permanent changes to the mouth and jaw. Depending on the particular type of treatment the patient is to receive, patients may experience some of the following problems:

- Oral mucositis is a common side-effect of radiotherapy or chemotherapy and can be very distressing to patients, leading to nutritional compromise and deteriorating quality of life. Evidence-based guidelines for the effective prevention and

management of oral mucositis exist and are available in the Practice Resource link at [www.mascc.org](http://www.mascc.org)

- Oral dryness (xerostomia) is commonly experienced in head and neck radiotherapy patients and puts patients at higher risk of dental cavities, gum disease and opportunistic infections in the mouth. Dry mouth can also make it more difficult to wear dentures.
- Tooth decay and gum disease develop more rapidly in patients with dry mouth, compromised immunity or when oral hygiene practices are compromised.
- Impaired blood supply to the jaw bone is a particular side-effect in head and neck radiotherapy patients and puts them at life-long risk for poor healing should dental extractions be required in the future.

A thorough dental assessment will deal with all these issues before they become problems. Our goal is to stabilize dentitions before problems arise so that patients achieve the best possible cancer outcomes.

Contact Dr. Allan Hovan at [ahovan@bccancer.bc.ca](mailto:ahovan@bccancer.bc.ca)

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## Lung cancer update and review

By Dr. Jenny Ko, Medical Oncologist, BC Cancer Agency Abbotsford Centre

Lung cancer has evolved into a disease with more treatment options than in the past, but remains the most common cause

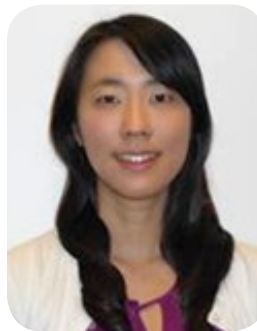
Learn more about this topic at our June 15 Oncology CME Webcast – nationally accredited, no charge. Register via [www.fpon.ca](http://www.fpon.ca) – Continuing Medical Education

of cancer-related mortality in Canadian men and women<sup>1</sup>. The diagnosis and management of lung cancer requires comprehensive multidisciplinary primary care and specialist involvement, to optimize

the patient experience and outcome. This article summarizes current best practices in lung cancer management with regard to screening, diagnosis, and treatment. A detailed, interactive presentation will be held during a webcast presented by the Family Practice Oncology Network (FPON) on June 15, 2017.

Lung cancers are comprised of epithelial tumours including non-small cell lung cancer (NSCLC), neuroendocrine tumours including small cell lung cancer (SCLC), and other less common

histology types. NSCLC most commonly encompasses adenocarcinoma, squamous cell carcinoma, and other subtypes<sup>2</sup>. A majority of lung cancers present with unresectable and/or incurable disease. Within the current diagnostic infrastructures, potential key strategic areas to reduce lung cancer-related mortality include smoking cessation, lung cancer screening for high-risk populations, and rapid and comprehensive investigation



Dr. Jenny Ko

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*Checkpoint Inhibitors*  
*continued from page 1*

treatment is stopped. These are often mild, but may rapidly progress to severe and even fatal immune toxicities. Active monitoring by the prescriber and patient education is necessary. As well, education of family physicians, emergency department physicians, and specialist colleagues who are seeing complications of these agents is essential. Awareness and communication are key.

The most common IMAEs are pneumonitis, enterocolitis, and dermatitis. Endocrinopathies can include hypophysitis, thyroiditis, adrenal failure, and Type 1 diabetes. Pancreatitis, hepatitis, central and peripheral neuropathies, and uveitis can also

### Helpful tools

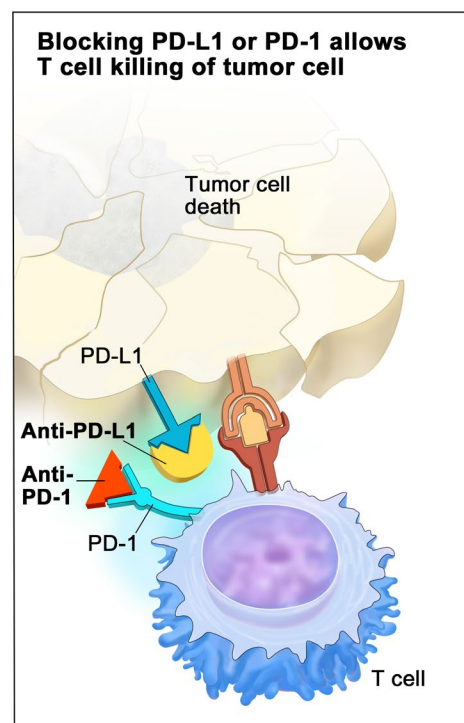
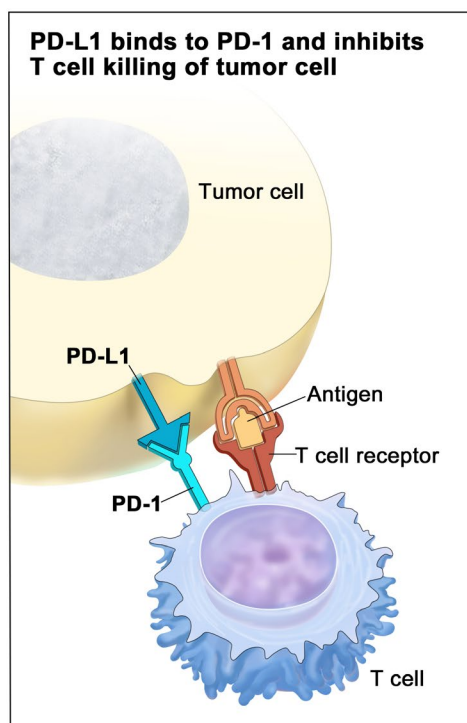
Providing guidance are excellent management flow charts on either the Nivolumab and Pembrolizumab melanoma protocols on the BCCA Website:

#### Nivolumab:

[http://www.bccancer.bc.ca/chemotherapy-protocols-site/Documents/Melanoma/USMAVNIV\\_Protocol\\_1Apr2017.pdf](http://www.bccancer.bc.ca/chemotherapy-protocols-site/Documents/Melanoma/USMAVNIV_Protocol_1Apr2017.pdf)

#### Pembrolizumab:

[http://www.bccancer.bc.ca/chemotherapy-protocols-site/Documents/Melanoma/USMAVPEM\\_Protocol\\_1Apr2017.pdf](http://www.bccancer.bc.ca/chemotherapy-protocols-site/Documents/Melanoma/USMAVPEM_Protocol_1Apr2017.pdf)



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occur. Initial symptoms may be subtle, so laboratory parameters should be carefully followed. Lung imaging is indicated for any respiratory complaint.

In general, asymptomatic to mild (grade 1 and 2) IMAEs are clinically followed, and holding treatment is considered until resolution. Moderate to severe (grade 3 and 4) IMAEs require immediate cessation of treatment and institution of high dose (1-2 mg/kg/day) oral prednisone, which may need to be continued for a lengthy time before tapering. Patients requiring hospitalization should initially be

started on IV methylprednisolone, as well as supportive care. Other immune suppressants, such as infliximab, may be indicated. Specialist consultation is indicated for grade 3 and 4 IMAEs. Treatment may be restarted following resolution of milder grade 1 and 2 immune toxicities. However, treatment should not be restarted following a severe immune mediated adverse effect.

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### *Lung cancer update and review* *continued from page 6*

pathways for suspected lung cancer. System-wide algorithms to triage and expedite each step of the diagnostic process with timelines as goals have been tested in the Canadian system and were found to be rapid, efficient and sustainable<sup>3</sup>.

Once diagnosed, patients who have resectable disease are generally treated with surgery followed by adjuvant therapy, often chemotherapy<sup>4</sup>. Patients with locally advanced unresectable disease are treated with radical-intent radiation therapy, often

combined with chemotherapy if possible. All other patients receive palliative therapy including systemic therapy, palliative radiation therapy, and/or pain and symptom management. SCLC is often treated with systemic chemotherapy with or without local radiation therapy to the chest, followed by prophylactic cranial irradiation.

In recent years, multiple clinical trials have shown efficacy and prolonged survival with epidermal-growth factor receptor (EGFR) and anaplastic lymphoma kinase (ALK) directed targeted therapy, as well as programmed death 1 (PD-1) pathway directed

immunotherapy in metastatic NSCLC<sup>5-13</sup>. In particular, PD-1 pathway directed therapy has been studied in both first-line and second-line treatment settings, and similar trials are ongoing for earlier stage lung cancer. Other biomarker based therapies also show promise. Systemic therapy improves patient outcomes substantially in stage IV lung cancer and should be explored in appropriate patients.

See References on page 13

Contact Dr. Jenny Ko at [jenny.ko@bccancer.bc.ca](mailto:jenny.ko@bccancer.bc.ca)

## Corridor consults – Oncology Q&A

**Question** What would you recommend that primary care physicians keep in mind as they follow multiple myeloma patients?

**Answer** from Dr. Greg Dueck, Medical Oncologist, Sindi Ahluwalia Hawkins Centre for the Southern Interior:

View the full 2016 Webcast of this topic at [www.fpon.ca](http://www.fpon.ca) – Continuing Medical Education

Patients with multiple myeloma usually have follow-up with both their primary care physician and their specialist (i.e. oncologist or hematologist). Biomarkers of disease activity are becoming increasingly refined in the management of myeloma. However, identifying clinical signs of end organ damage remains important, especially in the primary care setting. Most myeloma patients proceed to effective treatment

because a physician recognizes one or more of the “CRAB” criteria, including hyperCalcemia, Renal dysfunction, Anemia or other cytopenias, and pathologic Bone disease. Bone disease in myeloma may include pathologic bone pain and fractures, osteoporosis, plasmacytomas, and lytic bone lesions which are best identified on plain x-ray, CT, or MRI, but often missed on nuclear medicine bone scan. Intermittent laboratory investigations including complete blood count, and serum creatinine and calcium can be performed to assess possible end organ damage. The frequency of testing may be guided by consultation with a specialist, and will depend on the disease risk, pattern of disease in the past, and other factors.

Myeloma cells produce monoclonal proteins. By following changes in m-protein levels over time, disease activity can be monitored. A discussion of protein studies is reviewed in

more detail in the accompanying Webcast. Myeloma is a relapsing and remitting disease.

With modern treatments, a primary care physician may care for a myeloma patient undergoing several lines of therapy, over many years. A more complete discussion of treatment related toxicity is also available in the related Webcast. The primary care physician should keep in mind particular risks of immunosuppression in myeloma patients undergoing treatment, and have a low threshold for considering infection in a sick myeloma patient.

Contact Dr. Greg Dueck at [gdueck@bccancer.bc.ca](mailto:gdueck@bccancer.bc.ca).

If you have a query for Corridor Consults, please send it along to [jennifer.wolfe@bccancer.bc.ca](mailto:jennifer.wolfe@bccancer.bc.ca)

## Pancreatic cancer: time for optimism?

By Dr. Daniel Renouf, Medical Oncologist, BC Cancer Agency Vancouver Centre, and Assistant Professor, University of British Columbia

Pancreatic cancer remains one of the most common and deadly malignancies, currently the 4th leading cause of cancer related death in Canada<sup>1</sup>, and the 3rd leading cause of cancer related death in the United States<sup>2</sup>. This is projected to rise in the near future and it is estimated that, barring improved treatment options, it will become the 2nd leading cause of cancer related death by 2030<sup>3</sup>.



Dr. Dan Renouf

years there have been few advances in chemotherapy, but more recently significant advances have been made with the advent of FOLFIRINOX and Gemcitabine and Nab-Paclitaxel<sup>4,5</sup> as new standards in the treatment of advanced disease. In addition, a recent trial revealed a new standard option in the adjuvant treatment of resected pancreatic cancer (Gemcitabine and Capecitabine)<sup>6</sup>.

Our group at the BC Cancer Agency and Pancreas Centre

BC, and others worldwide, are focused on two major areas in an attempt to improve outcomes from pancreatic cancer. The first is a better ability to subtype pancreatic cancers. It is well known that certain cancers are more or less responsive to chemotherapies, and in certain tumor types, extensive subtyping is undertaken to help tailor treatments. In pancreatic cancer, progress in this realm has been slow, but recent advances have been made, including the recognition that tumors in patients with BRCA mutations are more sensitive to platinum based chemotherapy<sup>7</sup>. There is also emerging evidence regarding

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The majority of patients diagnosed with pancreatic cancer present with symptoms of weight loss, epigastric or back pain, and jaundice, and often have advanced disease at the time of diagnosis. For many



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Pancreas Centre BC is dedicated to advancing care for British Columbians with pancreatic cancer by making research discoveries that can be rapidly translated into better treatments. Founded in 2012, the Centre is an interdisciplinary partnership between the BC Cancer Agency, Vancouver Coastal Health and the University of British Columbia. Learn more at [pancreascentrebcc.ca](http://pancreascentrebcc.ca).



# Febrile neutropenia: one-hour from presentation to antibiotic infusion

By Dr. Margaret Smith,  
GPO, Vancouver Island  
Cancer Centre



Dr. Margaret Smith

Febrile neutropenia, is defined as an oral temperature of  $\geq 38.30^{\circ}\text{C}$  or an oral temperature of  $\geq 38.00^{\circ}\text{C}$  sustained for one hour, in a patient with an absolute neutrophil count of  $< 0.5 \times 10^9/\text{L}$  (or expected to fall below  $< 0.5 \times 10^9/\text{L}$ ), in a cancer patient receiving chemotherapy, or as a result of their disease. We activate our FN protocols

## Risk of infection increases with:

- Anticipated prolonged severe neutropenia ( $\geq 7$  days)
- Severity of neutropenia ( $\text{ANC} < .0.1$ )
- Significant medical comorbidities, COPD, Diabetes
- Hepatic or renal insufficiency
- Cancer not in remission, uncontrolled, progressive
- Central lines
- Mucosal disruption
- Cancer diagnosis (CLL, Lymphoma, Myeloma)
- Inpatient at time of development of fever

(UpToDate – Febrile Neutropenia)

with an ANC of  $1.0 \times 10^9/\text{L}$ , as the neutrophils can very quickly drop.

Neutrophils are the body's major defence against bacterial infection. In a neutropenic patient, fever may be the only sign of impending overwhelming sepsis. It is an oncologic emergency, and demands prompt recognition and action. We depend on the front line staff in emergency

departments, rural and central, to recognize and treat our FN patients with urgency.

Immediate investigations include: STAT CBC and differential, blood cultures from two separate sites (one from a central line, if present), urine culture, other cultures as indicated, and chest X-ray. Remember chest X-ray findings may be minimal in a neutropenic patient, and urinalysis may not show any WBC.

As soon as neutropenia is established in a febrile patient or an unstable non-febrile patient, immediate infusion of IV broad spectrum antibiotics is indicated. Gram negative coverage is essential. Do not wait if the patient has

not completed a chest x-ray or urine culture. IV fluid resuscitation is essential in unstable patients. Hospital admission, continued

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IV antibiotics, and daily blood counts are required for all unstable patients, and most stable patients. Refer to our BC Cancer Agency protocol on febrile neutropenia for further management guidelines: <http://www.bccancer.bc.ca/Documents/BCCA%20Febrile%20Neutropenia%20Guidelines.pdf>

Our goal is ONE HOUR from presentation at the triage desk to the infusion of the first antibiotic dose. This is life saving, and allows us to more safely give curative and palliative chemotherapy to BCCA patients throughout the province. We depend on emergency room and family physicians staffing Emergency Departments to educate triage nurses to identify and fast track these patients, and to ensure immediate lab work is drawn on any febrile or otherwise unstable potentially neutropenic oncology patient.

## Contact

Dr. Margaret Smith at [msmith@bccancer.bc.ca](mailto:msmith@bccancer.bc.ca)



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a potential predictive role of mismatch repair deficiency<sup>8</sup>. The BCCA Hereditary Cancer Program has a pancreatic cancer specific team assessing patients for these aberrations.

The other major area of research focus is on the development of novel therapeutics in pancreatic cancer. The major Canadian clinical trial in pancreatic cancer is the CCTG PA.7 trial (NCT02879318), assessing the efficacy

of Gemcitabine and Nab-Paclitaxel given in combination with two immune Checkpoint Inhibitors (Durvalumab and Tremelimumb). This study is open at the BCCA Vancouver Centre.

Recent advances in therapies and our biological understanding of pancreatic cancer have changed how we treat pancreatic cancer. Despite relatively modest gains thus far, there is reason for optimism that further advances will significantly improve outcomes from this disease.

For urgent referral regarding pancreatic cancer, please contact Dr. Renouf at the number below or Nurse Practitioner, Carolyn Hoeschen, at 604.877.6000 ext 676140, [carolyn.hoeschen@bccancer.bc.ca](mailto:carolyn.hoeschen@bccancer.bc.ca).

See References on page 13

Contact Dr. Daniel Renouf at 604.877.6000 ext 672445.

## Message from the President of the BC Cancer Agency

On April 7 and 8, a conference entitled *“Innovative Approaches to Optimal Cancer Care in Canada”* was held in Toronto. About 400 Canadian attendees all focussed on how to improve the quality of cancer care and cancer systems in Canada. All attendees were surveyed about what the priorities should be for the *“Five things we could do immediately to improve cancer care in Canada”*. These were collated and a list of the Top 5 presented.

The list included:

1. Expand Diagnostic Assessment Programs;
2. Organize cancer surgery;
3. Make patient portals readily available;
4. Link, share, and use existing data; and
5. Integrate palliative care earlier.

This list is instructive because it reaffirms the view that a robust cancer system is more than just cancer treatment centres, but needs to focus across the entire patient journey and pay greatest heed to the patient experience.



Dr. Malcolm Moore

It provides useful insights as we move to develop our priorities in a Cancer Plan for BC for the next 3-5 years. It is also notable that in 2 of the 5 priority areas – *Improving Cancer Diagnosis* through Diagnostic Assessment Program; and *Integration of Palliative Care* – the role of Primary Care is critical for success. (*“Better Integration of primary care into follow-up and transition care”* was also highlighted as an area where progress should be made.)

The path from a suspicion of cancer to a confirmed **diagnosis** can be complicated and time-consuming. Perhaps more than any other area of cancer care, it involves coordination between many

different health care providers and the care pathways are not always clearly described. Delays in diagnosis and subsequent treatment are one of the most common concerns we hear from patients and families. There is good evidence that delays not only increase stress and anxiety for patients, but can also impact outcomes. Thus, the UK developed a wait-times standard of 28 days

from the time of a suspicion of cancer until a definitive diagnosis is made.

There are several approaches to improving diagnostic pathways, but the key elements are rapid referral/diagnostic centres and centralized clinics which take care of all the different steps including referrals to cancer specialists if a diagnosis is confirmed. This reduces the burden for patients in navigating a complex system and eliminates the need for frequent referrals back to Primary Care after each step in the pathway is completed – all while keeping patients informed as they move through the investigations.

Diagnostic Assessment Programs reduce the time to diagnosis improving the efficiency of the process and decreasing unnecessary investigations and over-diagnosis. In more remote settings, the use of e-consults and telehealth has also been used to facilitate diagnosis. This is an area we will be working on in BC as we develop closer partnerships between the BC Cancer Agency, the Regional Health Authorities and Primary Care to build a cancer system that we can all be proud of.

Contact Dr. Malcolm Moore at [malcolm.moore@bccancer.bc.ca](mailto:malcolm.moore@bccancer.bc.ca)

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## Message from the interim chair of the Family Practice Oncology Network

Spring is a time of renewal, a time of planning for new adventures. As such, the expansion of the Family Practice Oncology Network to the BC Cancer Agency’s new Provincial Primary Care Program begins with strategizing over the coming months to determine the objectives and activities that will form our broader mandate.

This work will become increasingly important as BC family physicians move toward implementing the BC Patient Medical Home. The initial focus of this effort, resulting from the Ministry of Health report, *“Primary and Community Care: A 2017 Health Sector Strategic Initiative”*, is on patients with



Dr. Catherine Clelland

Complex Co-morbidities, Frail Elderly and Mental Health and Substance Use concerns. A subsequent focus will be the integration of Cancer Agency services with primary and surgical care. This direction will require a review of patient pathways from presentation to family physician, diagnosis, to treatment (including surgical oncology), and post treatment care and monitoring. Strong

representation from community primary care, and especially from family physicians, will be needed to identify and address potential implications.

Our Network participated in a related Agency project last year to improve the

transition of care between primary care and oncology. Feedback from family physicians, oncologists and patients from communities near the Vancouver Island, Vancouver, Surrey and Abbotsford Cancer Centres resulted in the preparation of a strategy entitled *“Developing a Shared Care Action Plan.”* Their recommendations will help guide our Network Council with its planning.

As a next step, we are partnering with the University of British Columbia’s Division of Continuing Professional Development to gather further insight from family physicians, other primary care providers and specialists to improve and support coordinated and seamless quality care for cancer patients. We will need your input to help shape what this representation will look like.

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# Patient and family perspectives on the “early stages” of the cancer experience

By Paula Myers, MSW, Clinical Social Worker, Patient and Family Counselling, BC Cancer Agency Vancouver Centre



Paula Myers is a social worker based out of the Vancouver Centre who has worked with Patient & Family Counselling for over 10 years. She has been part of the

General Practitioner in Oncology Training curriculum offered by our Network.

Many times, family physicians are one of the first team members to deliver the news to patients and their families:

*“This is cancer we are dealing with”;*

*“We are investigating what seems to indicate cancer”;*

*“The next steps are determining the treatment plan and that is going to include more tests”;*

*“So, we know something, but not everything”.*

This is typically a stressful and anxiety-filled time for everyone. You can’t answer all their questions and your patients may not even know what to ask in these first conversations.

Whether or not your practice is close to a Regional Cancer Centre, you want to provide your patients with the support they need before, during and after treatment. Patient and Family Counselling Services at the BC Cancer Agency have a variety of supports that can be accessed from wherever you and your patients are. And remember, we are there to consult with you as well.

A good initial discussion with patients and families includes assisting them with prioritizing their needs. One of the guidelines we emphasize to our patients and families is: *“Ask for what you need right now and we will see what we can provide.”*

By having this conversation, we assist them in navigating what is useful information and support in the present. We provide reassurance as well that information and support will be there in the future, too.

Additionally, our website is a great resource for patients and families. These are the top 3 psychosocial links:

<http://www.bccancer.bc.ca/health-info/coping-with-cancer/emotional-support>

<http://www.bccancer.bc.ca/health-info/coping-with-cancer/practical-support>

<http://www.bccancer.bc.ca/health-info/coping-with-cancer/support-programs>

Once a patient is part of the Agency system, (with a BC Cancer Agency identification number) more services are available and outlined on our website.

BC Cancer Agency  
Patient and Family Counselling Services:  
<http://www.bccancer.bc.ca/psychosocial-oncology-site/Documents/Cancer%20care%20support%20resources%20for%20HCP%202.pdf>

Finally, we continue to hear of many positive experiences patients and families have had with family physicians supporting them through the cancer experience. Thank you for all your efforts; patients and families can gain so much from simply knowing they are not alone and have a team working with them.

Contact Paula Myers at  
[pmyers@bccancer.bc.ca](mailto:pmyers@bccancer.bc.ca)

## A few pieces of wisdom we have learned from patients and families:

- 1) While health care team members have good intentions of being supportive, telling patients and families: “You will be as good as new”; or “Everything will be fine”; or “you will be your old self”; is not helpful. Regardless of what the outcome will be for an individual, they don’t go back to their “old selves”. They do go forward and some parts of life will feel the same, some may be better and some may be more difficult.
- 2) The word “palliative” is scary and needs to be explained. We receive regular feedback that patients still perceive this term as equivalent to “terminal” and “hopeless”. Patients and families appreciate an explanation, rather than seeing this term for the first time in copies of their health records or hearing someone say it matter-of-factly in a consultation appointment.

In simple terms, patients find it useful to know that “palliative” means the difference between curative and non-curative; it does not mean ending treatment and support. Let them know that treatment and support continues and includes a focus on their quality of life.

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## Message from the interim chair of FPON continued from page 10

On a resource related note, I am happy to report that updated versions of our Palliative Care Guidelines, produced in partnership with the BC Guidelines and Protocols Advisory Committee (GPAC), are newly available. Current drug tables and pricing are included.

These can be found both on our Website ([fpon.ca](http://fpon.ca)) and that of GPAC ([bcguidelines.ca](http://bcguidelines.ca)). In addition, GPAC recently granted “Partner” status to our Network produced guidelines on Upper Gastrointestinal Cancers. These, too, are available on both Websites.

Finally, I hope you will mark November 17 and 18 on your calendar as key oncology CME

dates. November 17, we will host our second annual GPO Case Study Day – focussing entirely on group discussion of emerging and prevalent oncology challenges. November 18 is the date for this year’s Family Practice Oncology CME Day. I hope to see you there!

Contact Dr. Cathy Celland at  
[cathy.clelland@bccancer.bc.ca](mailto:cathy.clelland@bccancer.bc.ca)

# Hereditary Cancer Program: Spring 2017 update



Drs. Sophie Sun (left) and Intan Schrader

## Program leadership

The appointment of Drs. Sophie Sun and Intan Schrader as Hereditary Cancer Program (HCP) co-leads was announced on March 16, 2017 by BC Cancer Agency President Dr. Malcom Moore, following a year in which they provided interim HCP leadership and introduced a number of new initiatives.

Dr. Sun (Medical Oncologist) and Dr. Schrader (Medical Geneticist) lead a team of clinicians and support staff who provide hereditary cancer services to BC and Yukon patients and families. HCP staff also work closely with the BCCA High-Risk Clinic team that includes Dr. Rona Cheifetz, Medical Lead, and Marco Gnoato, Nurse Practitioner.

## New approaches to hereditary cancer genetic testing

Hereditary cancer genetic testing is becoming more complex with the increasing ability to test multiple genes quickly and cost-effectively. The BCCA Cancer Genetics Laboratory's hereditary cancer panel is currently used for most HCP index genetic testing. Blood samples from affected individuals age 19+ who meet criteria for at least one syndrome on the panel are tested for germline mutations in 17 genes: BRCA1, BRCA2, PALB2, TP53, PTEN, CDH1, MLH1, MSH2, MSH6, PMS2, MUTYH, APC, POLE, POLD1, STK11, SMAD4. Additional testing may be considered through commercial

laboratories, depending on a patient's personal or family history of cancer. Panel tests allow for increased mutation detection at lower cost as compared to iterative single gene analysis. Challenges include the number of reported "variants of uncertain significance (VUS)" and the ability to provide clinical management advice for mutations in unexpected or new genes.

Multi-gene panels are also now used for tumour testing to inform clinical treatment decisions (e.g. Oncopanel) and in research protocols (e.g. POG). HCP referral is indicated when such testing identifies a possible germline hereditary cancer gene mutation, even if standard referral criteria are not met. Expedited HCP consultation will address clinical confirmation and implications for family members.

## HCP Waiting List

Innovative service delivery models are being trialed in response to a continued increase in demand for HCP services and a current 18 month waiting list for consultation. Each new referral is triaged to ensure that expedited assessment is offered when required to inform treatment decisions and for carrier testing.

Please complete the Expedited/Urgent section at the top of the HCP Referral Form when indicated and/or contact the HCP office with an update about a patient who is on the regular waiting list. In addition, to ensure that genetic testing will be available to a family, please arrange blood sample storage if the index patient's health status is poor or may decline suddenly. Paperwork is available at: [www.bccancer.bc.ca/screening/Documents/HCP\\_Form-UrgentDNARequisitionConsentForm.pdf](http://www.bccancer.bc.ca/screening/Documents/HCP_Form-UrgentDNARequisitionConsentForm.pdf).

## HCP Referrals

Referrals are accepted in Vancouver and Abbotsford, with consultation provided by video-conference, telephone or in-person (the latter at Vancouver, Abbotsford and Surrey).

Access the current HCP Referral form at [www.bccancer.bc.ca/screening/health-professionals/hereditary](http://www.bccancer.bc.ca/screening/health-professionals/hereditary) or call our offices to request a faxed copy. For patients with family history of pancreatic cancer,

refer to [www.bccancer.bc.ca/screening/Documents/HCP\\_BrochurePromo-FamilialPancreaticCancerProgram.pdf](http://www.bccancer.bc.ca/screening/Documents/HCP_BrochurePromo-FamilialPancreaticCancerProgram.pdf).

Contact Mary McCullum, Nurse Educator ([mmccullum@bccancer.bc.ca](mailto:mmccullum@bccancer.bc.ca), 604-877-6000 ext 672325) with questions about potential or existing hereditary cancer referrals.

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Visit the Network Website: [www.fpon.ca](http://www.fpon.ca)

The content of articles in this Journal represent the views of the named authors and do not necessarily represent the position of BCCA, PHSA or any other organization.

ISSN 2369-4165 (Print)  
ISSN 2369-4173 (Online)  
Key title:  
Journal of family practice oncology  
Publications Mail Agreement  
Number 41172510  
Return all undeliverable Canadian Addresses to  
BC Cancer Agency  
600 West 10th Ave, Vancouver, BC  
V5Z 4E6

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