

Family Practice Oncology Network Newsletter



BC Cancer Agency

CARE + RESEARCH

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On being a GPO – a community perspective

By Dr. Elizabeth (Biz) Bastian, GPO, Smithers

The GPO is a relatively new entity in the smaller and more remote areas. As such we are still in evolution in finding our niche, both within our own minds and that of the general practitioner. We began our journey in Smithers Community Cancer Services several years ago, evolving from one oncology nurse to the state we are in now – two GPOs and three oncology nurses. As we grew, we tried to respond to the needs primarily of our patients and secondarily of our GPs.

We have recognized that supporting and advocating for a cancer patient throughout their journey is extremely time consuming and requires some specialized knowledge. There are many opportunities during this journey for patients to fall through the cracks, especially given how busy the average GP finds him/herself. We now see ourselves as a parallel service which can greatly increase the quality of care offered our cancer patients, support our GPs in their patients' improved care, and offer to help managing the more time consuming aspects of care.

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GPO Dr. Biz Bastian (lower right) is part of the Smithers Community Cancer Services team shown here with oncology nurses Lorretta Mehr (back) and Alice Christensen (left) and patient Mike Wolf.

Uniting general practitioners in oncology



Dr. Henry Docherty, GPO at the Cancer Centre for the Southern Interior in Kelowna, is President Elect for the Canadian Association of General Practitioners in Oncology.

According to the Canadian Association of General Practitioners in Oncology (CAGPO), "General Practitioners in Oncology" or "GPO" means a general practitioner who provides oncology care in the primary care setting, or who functions in the role of a General Practitioner in Oncology at a Cancer Centre or an Oncology Associate. This Association was formed in 2003 with the objectives being:

- to unify GPOs;

- to promote communication amongst GPOs in tertiary and primary care settings;
- to act and speak as the recognized authority on behalf of and for the benefit of GPOs and their interests; and
- to promote the role of GPOs within Cancer Centres and within primary care settings.

The President Elect for this Association taking on the role in October 2010 is Dr. Henry Docherty, GPO

at the Cancer Centre for the Southern Interior in Kelowna:

"CAGPO was formed nearly seven years ago in central Canada (Ontario) and is dedicated to the advancement of GPO issues including education. It provides a forum for communicating with GPO colleagues across Canada about various issues of mutual importance. There is an annual education and business meeting. The 5th annual meeting took place in Kelowna in

October 2008 and this year is scheduled for Toronto, October 22-25. Membership is \$100 and includes access to the members' area of the Website and subscription to two oncology journals. I think it is a very valuable resource for GPOs who are not well supported academically or fiscally by other provincial or national bodies."

Full details on CAGPO, including membership applications, are available at www.cos/cagpo.

Preceptors making a difference in Campbell River

Campbell River is an ideal example of the positive impact Preceptor Program developers had in mind when they established the program in 2004. Recently retired, Helen Garson, was one of the first family practitioners from this community to complete the Preceptor Program and put her new knowledge and skills to work in caring for local cancer patients. Now, there are three Preceptor graduates there including Drs. Sian du Plooy Shuel and Jim Proctor.

Dr. Sian du Plooy Shuel completed the program in 2007 and moved to Campbell River directly thereafter. A graduate of the University of Manitoba, she completed her family practice residency in Chilliwack before undertaking the Family Practice Oncology Network's Preceptor Program. Dr. du Plooy Shuel completed six of the program's eight weeks at the Vancouver Island Cancer Centre in Victoria and now shares responsibility for the chemotherapy program at Campbell River & District General Hospital with her colleague and fellow Preceptor graduate, Dr. Jim Proctor. She also assumed Dr. Garson's chemotherapy role and opened her own regular family practice clinic at the Alder Medical Centre.

"As a part-time GPO (General Practitioner in Oncology), I help run two chemotherapy clinics at the hospital each week or two mornings and see between three and eight of our 30-55 patients each time. We treat all types of cancer and provide therapy for many people outside of the Campbell River area including patients from Port Hardy, Port McNeil, Sointula and even Alert Bay."

"Running a chemotherapy clinic smoothly in a town like Campbell River really is a team



Dr. Sian du Plooy with her husband, Derek, and pal at the Beaver Lodge Lands, a protected forest in Campbell River.

effort. From the nursing staff who organise the clinics and field phone calls from patients to the radiologists who help monitor response and help with picc placement. The surgeons put in ports which allow us to give chemotherapy and the family physicians help take care of their patients in hospital. We really do function as a team. "

"I took the Preceptor Program specifically to learn about oncology and to gain a better understanding of not only why we treat patients, but how we treat them. I learned a great deal about the cancer experience especially what patients go through physically and emotionally when they are first diagnosed and when they are receiving treatment. From an academic perspective, I also gained knowledge regarding the side-effects of chemotherapy, and how we monitor treatment and determine whether the cancer is responding. I also found the networking angle of the program to be particularly valuable, to understand what the oncologists and GPOs are thinking and to get to know them individually. It is so much easier now to pick up the phone and say "Here's what's happening, what do you think?" This is really helpful considering we are three hours away from the nearest Cancer Centre in Victoria."

"The program is professionally run and well worth the time. I now take part in the Network's teleconference and Webcast CME activities and take advantage of the opportunity to network further with GPOs. This is such an amazingly good idea."

Dr. Jim Proctor completed the Preceptor Program in 2005. He is originally from Campbell River and completed his medical studies at the University of British Columbia in 1989. He, too, is a part-time GPO at the Campbell River & District General Hospital and runs a family practice.

"We see a lot of oncology patients in our family practice and at the Emergency Department here and I was motivated to take the program in part by our outstanding chemotherapy nurses, whom I have known my whole career, and who basically roped me in. I also find this work very interesting and wanted the more formal training the program provides. I, too, completed the bulk of my training at the Vancouver Island Cancer



A dedicated GPO, Dr. Jim Proctor is also an outdoors enthusiast.

Centre participating in rounds, meetings, presentations and clinics with oncologists."

"The top benefit I gained was increased confidence in my abilities to care for cancer patients particularly with regard to diagnosis and chemotherapy and how to approach them effectively. The open channels of communication with the BC Cancer Agency make this role much easier knowing you can pick up the phone and anticipate what they are going to say."

"My work with cancer patients is very satisfying. The money's not great, but most of the time we are working with clear cut diagnoses and motivated patients. To those considering taking this program, I would say it is really important that you have an interest in patients knowing that your success rate will be less than 100 percent. You will occasionally make a profound difference in people's lives, but you also have to be willing to take an emotional hit every so often."

"One feature I would like to see added to the program is a vascular access component particularly instruction on inserting picc lines which I am now learning how to handle. This would be a huge service to rural physicians and make life easier for our patients. Overall, however, I think the program is excellent and should be expanded."

The Preceptor Program is an eight week, modular program designed to provide family physicians outside major urban centres with the oncology skills and knowledge to support all aspects of cancer care in their communities. The program is designed to fit the needs of family physicians and includes a two-week introductory module offered every September and February at the BCCA in Vancouver. Participants then complete their remaining modules, customized to meet the needs of their community, at any of the Agency's five cancer centres in Vancouver, Victoria, Surrey,

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Healthy women sought for vaccine research study on HPV

The University of British Columbia's Department of Obstetrics and Gynaecology, in partnership with a major pharmaceutical company, is encouraging physicians to promote their female patients' (ages 16 to 26) participation in a new vaccine research study on Human Papillomavirus (HPV). The study will assess and compare the efficacy of a new HPV vaccine and Gardasil in preventing HPV and the development of cervical cancer. There are two Vancouver sites where patients can

participate – the Women's Health Research Institute at Children's and Women's Hospital and Vancouver General Hospital.

Patients who qualify will receive study-related care and will not be charged for study vaccines. Patients eligible to participate must:

- Be women between the ages of 16 and 26;
- Not have been diagnosed with, or vaccinated for, HPV;

- Not be pregnant; and
- Not have had any abnormal pap tests.

If you have patients who meet these criteria and would like to participate, please direct them to the HPV Study Headquarters at Women's Health Research Institute at 604.875.3459 or HPVStudy@cw.bc.ca. Brochures about this study are available and supplies can be requested from Study Headquarters.

Colorectal screening program launched in Penticton

The BC Cancer Agency is asking family physicians in Penticton to encourage their asymptomatic patients between the ages of 50 – 74 to take part in a three-year, \$3.8 million pilot program to test the effectiveness of a new screening program for the early detection of colorectal cancer. Colorectal cancer is the second deadliest type of cancer for British Columbians yet only about 20 percent of the population over age 50 are routinely screened. Early detection of colorectal cancer means more treatment options for patients and a better long-term prognosis. If detected early, treatment for colon cancer is over 90% successful.

The BC Cancer Agency is leading this new program, called Colon Check and launched by the Province in January, by providing user-friendly test kits to eligible individuals who call the Colon Check hotline (1.877.70.colon, 1.877.702.6566). Participants are screened using an immunochemical fecal occult blood test (iFOBT) which is able to detect blood in the stool that is not visible to the naked eye. iFOBT is easily performed at home and, unlike other colorectal cancer screening tests, does not require any dietary restrictions. After using the test kit, patients return it to a designated drop-off point. All tests are analyzed by the Provincial Health Services Authority Central Processing and Receiving Laboratory in Vancouver. Patients who test positive, as well as those individuals identified as having a higher than average risk of developing colon cancer, will be referred for follow-up.

The Colon Check pilot will establish the infrastructure needed to support a population-based screening program that will guide participants through the entire screening process including: recruitment, iFOBT, colonoscopy (if required) and on-going surveillance or re-screening.

Negotiations are underway to select a second community for participation in the program and it is anticipated that screening will begin in this location later in the year. It is estimated that there will be more than 2,900 new diagnoses of colorectal cancer in the province this year, and that over 1,200 British Columbians will die of the disease in the same time period. For more information please call Colon Check at 1.877.702.6566 or visit www.bccancer.ca/coloncheck.



Hind sight is 20/20

Everyone between 50 and 74 should be screened for colorectal cancer.

A fecal occult blood test can detect the early warning signs of colorectal cancer – and save your life. This deadly disease kills three people every day in British Columbia. But, caught early, the survival rate is 90%.

Call Colon Check today

1-877-70-colon(26566) to get your free test kit.

www.bccancer.ca/coloncheck



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Colon Check

Upcoming events

Four noteworthy events are scheduled in the coming weeks and months that family physicians with an interest in oncology would find highly relevant:

The Community Cancer Control National Summit set for June 11-13, 2009 at the Prince George Civic Centre in Prince George. This 7th National Community Cancer Control Summit will be



hosted by Northern Health and will focus on innovative solutions for rural and remote cancer control issues. The BC Cancer Agency will host a Professional Education Day as part of the conference on Thursday, June 11 and a group representing the Network's Preceptor Program will take part in a panel discussion of the program on June 13. Full details at www.cancersummit.ca/

The BC Community Oncology Trialists Community Oncology Meeting to be held June 18-21, 2009 at the Whistler Four Seasons Resort in Whistler. This 9th Annual Meeting will include an expert presentation and case studies and use interactive touch-pad technology throughout. More information

available at www.eventcare.ca/clients/wcoc/index.html.

BC College of Family Physicians Annual Scientific Assembly scheduled for October 3-4 at the Hyatt Regency Hotel in Vancouver. This 22nd annual



assembly will feature a wide range of plenary and group sessions from updates in vaccines, to cancer screening in primary care, to electronic medical records. More information is available at www.bccfp.bc.ca

The Canadian Association of General Practitioners in Oncology Annual Meeting will be held October 23-25, 2009 at the Marriott Toronto Downtown Eaton Centre Hotel in Toronto. CAGPO exists to unify General Practitioners in Oncology; to promote communication amongst GPOs in tertiary and primary care settings; to act and speak as a recognized authority on behalf of and for the benefit of GPOs and their interests; and to promote the role of GPOs within Cancer Centres and within the primary care setting. Conference details available at www.cos.ca/cagpo. Also see page 1 for more information about this association.

New clinical trial: seeking postmenopausal women at increased risk of breast cancer

Postmenopausal women who are worried about developing breast cancer may be interested in a clinical trial at the BC Cancer Agency (BCCA) evaluating the role of an aromatase inhibitor, the drug exemestane (Aromasin), in the prevention of this disease. This trial is coordinated by the National Cancer Institute of Canada Clinical Trials Group (NCIC CTG) and enrollment in BC is ongoing at both the Vancouver and the Southern Interior (Kelowna) Cancer Centres. Forty-five hundred women in Canada, the United States and Spain will be included.

Of the drugs previously studied, tamoxifen has shown to reduce the risk of breast cancer in high risk postmenopausal women, but at the cost of an increased rate of uterine cancer and thrombo-embolic issues. These are infrequent but serious toxicities, which cannot be adequately screened for or easily prevented. Because of the toxicity profile, tamoxifen has not seen a general uptake. Raloxifene has been compared to tamoxifen,

and has no greater prevention effect, and a persisting risk of thromboembolism, but decreased risk of uterine cancer.

The search is still on for a highly effective and less toxic drug for high risk women and it has been noted in several trials of adjuvant aromatase inhibitors that the risk of second primary breast cancer is significantly lowered by these agents, often to a greater degree than with tamoxifen. Thus this clinical trial has been developed to test an aromatase inhibitor, exemestane, to placebo. Thus far, the main long-term toxicity seems to be increased rate of bone density loss, with potential increased risk for bone fracture. Bone density, however, can be screened with bone densitometry, and fracture risk reduced with therapy.

High risk postmenopausal women who may be eligible for this trial are those who have:

- 1) LCIS, ADH, or ALH on biopsy, or
- 2) DCIS treated with mastectomy alone, or

- 3) High Gail score resulting from a high risk family or personal history. A woman's Gail score would be likely to fall into the eligible high risk range if she were of usual postmenopausal age and had one, or more, first-degree family relatives (mother, sister, or daughter) with breast cancer. Other risk factors that may affect score include age, early menarche, late age at first pregnancy, and prior breast biopsies.

Although we know that diet and exercise may be helpful in preventing breast cancer, many women remain at risk and may be interested in enrolling in this study which will add to our knowledge of options for breast cancer prevention. We would be delighted to review your referrals.

Women can find more information about their breast cancer risk and eligibility to enroll at www.excelstudy.com or by contacting: Rosanne Serpanchy at 604.877.6000 x2199 in Vancouver or Karen Wilkie or Nancy Hartt at 250.712.3900 x7047 in Kelowna.

BC Cancer Agency's Abbotsford Centre approaching one year anniversary



The BC Cancer Agency's newest regional centre, located on the site of the new Abbotsford

Regional Hospital and Cancer Centre, began treating patients in August 2008 and has quickly become an integral player in the Agency's provincial cancer control services. Expected to reach its initial annual forecast of 60,000 patient visits, this centre is the Agency's fifth in the province and the first to open in the Lower Mainland since 1995. The centre is also the first in Western Canada to be integrated within a hospital from the ground up.

The Abbotsford Centre offers a full range of

cancer control services including:

- New patient multi-disciplinary consultation and care planning;
- 12 chemotherapy chairs;
- Four linear accelerators for the delivery of radiation therapy;
- Supportive care, nutritional consultation and rehabilitation;
- Pain/symptom management and palliative care;
- Hereditary cancer program;
- Breast health services in collaboration with Fraser Health;
- Patient and community education in cancer prevention;

- Professional education/liason for community-based cancer control programs; and
- A research focused mandate that provides patients with access to national and international clinical trials.

This centre also provides another option where family physicians enrolled in the Family Practice Oncology Network's Preceptor Program can complete their training.

125 staff are employed at the Abbotsford Centre in a range of medical and radiation oncology roles through to nursing, nutrition, clinical counselling, pharmacy, clinical physics, and clerical and administrative functions.

For more information about the BCCA's Abbotsford Centre please visit www.bccancer.bc.ca/RS/AbbotsfordCentre

Primary care physician education and engagement in the promotion of cancer screening in BC

Appropriate use of cancer screening procedures can save lives. Primary care physicians (GPs/FPs) have the greatest influence on patients' usage of screening procedures. In May and June 2009, the UBC Division of Continuing Professional Development (UBC CPD), in collaboration with the BC Cancer Agency (BCCA), will be conducting a provincial wide needs assessment to address the possible gap in care for recommended cancer screening practices for the BC population.

The goals for this project are to:

- 1) develop a better understanding of BC GPs/FPs' current practices and attitudes towards cancer screening;
- 2) invite GPs/FPs' recommendations and suggestions for ways to better support GPs/FPs in their cancer screening practices;
- 3) incorporate GPs/FPs' suggestions and recommendations into the development of a strategy that will result in improved patient uptake of cancer screening in BC. The participation of GPs/FPs in British

Columbia is needed to suggest ways to support recommended cancer screening practices that can reduce cancer mortality in BC.

Studies have shown that primary care physicians' recommendations to patients have the greatest influence on patients' cancer screening behaviour. However, studies also show that primary care physicians may not involve patients in cancer screening for a variety of reasons including issues related to medical training, practice priorities, lack of time, medical records' organization, urgency of other health problems, the complexity of the topic, lack of reimbursement for time spent discussing screening options, beliefs about cancer screening effectiveness, and language barriers with patients.

In May 2009, all GPs/FPs in BC will be invited to complete the needs assessment survey tool either online (www.bccancerscreening.ca – live on May 1) or by paper. In addition, interested GPs/FPs across BC will be invited to participate in focus groups to provide in-depth feed-back on the findings of the needs assessment survey. Incentives to

participate in this needs assessment will include a chance to win one of four prizes, each valued at approximately \$400, as well as the opportunity to participate in a free, interactive, online educational event (eligible for Mainpro M-1 or Section 1 CME study credits).

GPs/FPs should feel encouraged to complete this survey as participation will shape the development of a strategy to support primary care physicians' communication and practices with patients pertaining to cancer screening, ultimately increasing the uptake of cancer screening among all people in BC. This needs assessment project is funded by the BCCA.

Dr. Bob Bluman (UBC CPD) is the principal investigator of this study, and Ms. Lisa Kan (BCCA), Dr. Brenna Lynn (UBC CPD), Dr. Ruth Elwood Martin (UBC Department of Family Practice), Mr. Tunde Olatunbosun (UBC CPD) and Ms. Laura Swaré (BCCA) are the co-investigators.

For more information about this assessment, please contact Project Manager, Mr. Tunde Olatunbosun, at tunde.o@ubc.ca

Network chair takes on role of medical director

Dr. Phil White, family physician in Kelowna and Chair of the Family Practice Oncology Council, is adding a new role to his responsibilities – that of Medical Director for the Family Practice Oncology Network. He shares his comments below on how he sees the months ahead:



“I’ve been around the Network a long time having served as Council Co-Chair and then Chair since its inception in 2002. We established the role of Medical Director to ensure that our initiatives move forward in a

practical sense and that the rubber truly hits the road. I am very familiar with the Network, its goals and initiatives, and it made sense that I take on this role which is supposed to entail one day a week. In reality, though, it adds-up to much more.”

“Our main goal for the Network is to make it relevant to all family doctors in the province – to serve as their principal resource and provider of tools to assist in the community component of cancer care. We already offer, for example, a high quality CME program and a Preceptor Program for physicians interested in learning the skills to administer chemotherapy and support all aspects of oncology care in their communities. Now, we are focussing on the development of short, easy-to-use cancer guidelines specific to family practice starting with guidelines for palliative care and bereavement support, to be followed by guidelines for colorectal, breast and prostate cancer. These guidelines are being designed with accessibility in mind so that they can serve as a point-of-care resource available via the Web or a physician’s PDA.”

“We also want to continue to build a Network Web presence that is equally accessible and provides the links family doctors need. We

are working, too, to establish liaisons with similar organizations across the country and have held discussions to date with groups in Manitoba, Saskatchewan and Alberta. We are also committed to using new and innovative methods to convey information to family doctors throughout BC and recently held, for example, several Webcast presentations attended by GPOs and family physicians from numerous locales.”

“Until now, the Network moved forward one step at a time and made some good progress. Our plan from here on in is to accelerate the pace. This might require some pushing and pulling, but I think there is much more we can do.”

Dr. White was recently awarded the Primary Health Care Leadership Award by the General Practice Services Committee, a joint committee of the Medical Services Commission and the BC Medical Association, in recognition of his contribution and commitment to the Practice Support Program’s learning sessions and his generosity in acting as a coach and mentor to help fellow physicians improve practice management, achieve better patient health outcomes and enhance professional satisfaction.

Contact Dr. Phil White at drwhitemd@shaw.ca

On being a GPO – a community perspective continued from page 1

As such, we consider ourselves a ‘full service’ community service. We, of course, offer support to our patients during their systemic therapy. This includes education about what to expect regarding monitoring, the medications they will receive, side effects, risks of neutropenia, peripheral neuropathies, etc. As GPOs, we review all patients regularly throughout their systemic therapy, manage symptoms, organize interim assessments (CT, MUGA, etc.) and communicate by written report and/or by phone with the patients’ family doctor each time they are seen. We are available for consultation to GPs at any time.

However, we have chosen to carry our role further in Smithers. We found that quality care meant involving families, counseling to prevent crisis, advocating for these

people as they navigate the system, helping them develop strategies of self care and nutritional support, and introducing them to community resources so that they felt they could carry on with some semblance of self care and direction when they had completed their systemic therapy. We find this paramount in preventing fear and dependence in our patients.

At completion of their chemotherapy patients are assessed and a discharge letter is sent to their GP outlining their medical status with specifics of their necessary follow-up. Our patients are informed and given a copy of this follow-up advise so that they can be responsible for their own care and be sure the ‘cracks’ do not develop.

I think it goes without saying that our objective is to keep the GP as informed as possible with the two way dialogue. We

encourage GPs to learn, and take a more informed and active role in their patients’ care. We try to educate whenever we can, whether by dialogue or via written notes. In any community, there will be GPs who are more interested than others in cancer care.

Northern Health and the BCCA has supported us greatly in our endeavors by supporting us with sessional payments which help us spend the time necessary to provide this quality of care. The incredible knowledge and compassion of our oncology nurses are also a blessing in this work.

Our next goal is to carry on supporting our patients and GPs in the completion of the journey through survivorship and end of life care.

Contact Dr. Biz Bastian at Elizabeth.Bastian@northernhealth.ca.

Insight into Oral Oncology at the BC Cancer Agency

Dr. Allan Hovan is the Provincial Professional Practice Leader of the BC Cancer Agency's Oral Oncology/Dentistry Program which is placing stronger emphasis on the early detection of oral cancer than ever before. He shares with us here his insights into current facts regarding oral cancer and its transmission, into the Agency's expanded screening efforts and into the operations of the Oral Oncology/Dentistry Program. Dr. Hovan:

Oral Cancer Basic Facts

Oral cancer is the eighth leading cancer for adults in BC and Canada and is strongly linked to heavy smoking and drinking of alcohol. Five-hundred new cases of oral and oropharyngeal cancer are diagnosed each year in BC, typically in older patients with 80 percent linked to alcohol and smoking.

A recent finding, however, also links the Human Papilloma Virus (HPV), histologically, as a causative agent for oral cancer with 10-20 percent of new cases being diagnosed in otherwise healthy young people. We attribute this change to the increased practice of oral sex amongst young people today often with multiple partners. HPV, which causes nearly all cases of cervical cancer, can be transmitted through oral sex and, in fact, we are seeing a corresponding rise in oral cancer amongst male partners of cervical cancer patients.

Certain immigrant populations, specifically those from India and Southeast Asian countries, also suffer high rates of oral cancer. In India, for example, oral cancer is one of the most prevalent cancers. Most cases of the disease there occur in rural settings, where many people are poor and illiterate and continue to take up betel quid and tobacco chewing habits.

Targeted Screening

Unfortunately, unlike skin, breast and prostate cancer, the five-year survival rate for oral cancer has not improved significantly with innovations in screening practices. Its high mortality rate (~62% 5-year survival) is attributed to the late stage at which most oral cancers are diagnosed. Of the 500 new cases that will be diagnosed this year, for example, 250 of those patients typically never go to



Dr. Allan Hovan, the BCCA's Provincial Professional Practice Leader of Oral Oncology/Dentistry demonstrates the VELScope screening technology with Family Practice Oncology Network Manager, Gail Compton.

the dentist and rarely visit a doctor. Often, we find, they have rotten teeth and are embarrassed to seek medical attention.

To address this, we are focussing much more of our efforts on early detection. We have a partnership with UBC and the Portland Dental Clinic, for example, to hold frequent screening clinics in high risk communities such as the Downtown Eastside of Vancouver where many residents are heavy smokers and drinkers, have poor oral hygiene and engage in risky behaviours. We also hold regular clinics in seniors' centres, participate in seniors' health fairs and are expanding our outreach initiatives to target the Southeast Asian communities.

There are permanent screening clinics, too, including intermediate risk clinics at Vancouver General Hospital Health Sciences Centre and the University of British Columbia Faculty of Dentistry, and high risk clinics at the Vancouver Cancer Centre and the Fraser Valley Cancer Centre in Surrey. Physicians or dentists can send their patients to these clinics if they do not have a confident understanding of oral cancer and patients without a doctor or dentist can be screened there also. Oral oncology screening clinics will soon open as well at the Cancer Centre

for the Southern Interior in Kelowna and at the Cancer Centre for the North expected to be completed in Prince George in 2012.

We work closely, too, with the dental schools and dental hygienists in training to ensure these up and coming professionals have a solid understanding of oral cancer and the information they need to be good screeners in their communities. We host numerous CME events, as well, and are encouraged by the increased attendance and interest from the newer generation of dental professionals. Our next CME event, with the Prince George and District Dental Society, will be held on the evening of June 10 just prior to the Community Cancer Control National Summit in Prince George from June 11 – 13.

We are also in the midst of establishing a province-wide Oral Oncology Screening Network that would link the approximate 2,900 dentists in BC to provide well informed, more comprehensive screening services.

Screening Technologies and Risk Factors

The BCCA continues to play an important role in developing and validating new screening technologies for oral cancer. The VELScope, for example, was developed and tested at the Agency in 2005 and is now widely used to screen high-risk patient groups. It is a hand-held, portable device that uses fluorescence technology or blue light to visually detect cancerous lesions that would otherwise be invisible to the naked eye.

There is also toluidine blue stain, an optical contrast agent with a long history of use and an established validity for assisting in the detection of oral cancers and oral premalignant lesions with high-grade dysplasia. This highly sensitive stain, also used to detect cervical cancer, shows cancer prominently, but does generate many false positives.

A new screening technology, that we are developing with Vancouver based Perceptronix Medical Inc., is called OralAdvance™. It involves a quantitative cytology test based on the analysis of oral brush specimens and provides an objective measure of gross DNA abnormality to
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Three top award winners at BC Cancer Research Centre

British Columbia is well known throughout the country for its outstanding treatment and care of cancer patients. A key part of this is owed to the talent and dedication of the researchers at the BC Cancer Research Centre. Three of the Centre's scientists recently received awards in recognition of their contributions. They include:



Dr. Marco Marra received the Innovation Council of BC's Frontiers in Research Award

Dr. Marco Marra, who won the Innovation Council of BC's 2008 Frontiers in Research Award for his contributions to cancer research and the understanding of cancer through

genome and gene analysis, and his acclaimed work on the Human Genome Project and the sequencing of the SARS coronavirus. Dr. Marra also established and serves as Director of Canada's Michael Smith Genome Sciences Centre in Vancouver.



The Innovation Council of BC awarded Dr. Karl Otto its 2008 Young Innovator Award

Dr. Karl Otto, who received the 2008 Young Innovator Award also from the Innovation Council of BC. Dr. Otto is a physicist whose accomplishments in cancer research and treatment resulted in the development of several novel advancements that enable increased precision in the delivery of

radiotherapy estimated to benefit over one million patients around the globe.



Dr. Marianne Sadar received the 2008 Terry Fox Young Investigator Award

Dr. Marianne Sadar, who received the 2008 Terry Fox Young Investigator Award for her research in prostate cancer. Dr. Sadar and her team successfully identified a molecular mechanism which may explain how advanced prostate cancer grows in the absence of male hormones. They are now developing drugs to help prevent and improve outcomes for prostate cancer, a disease that affects one in seven men in Canada.

BC Cancer Agency discovery: human breast stem cells that regrow mammary tissue

A team of scientists at the BC Cancer Agency in Vancouver has made an important advance for breast cancer. Published last November in the leading medical journal, *Nature Medicine*, their exciting study shows that the normal female breast contains a population of breast stem cells – each being able to regrow a complete miniature, milk-producing mammary gland after being transplanted into a special type of mouse. Many investigators believe these normal breast stem cells are the culprits that start to form breast cancers.

“We are excited to have developed an

approach that, for the first time, makes it possible to detect the long suspected stem cell of the normal human breast,” explains Peter Eirew, lead author of the study and a doctoral student in genetics at the BC Cancer Agency's Terry Fox Lab and University of British Columbia. “I am very proud to have been successful in moving the field closer towards improving outcomes in breast cancer.”

The study is also significant because it involved the development of a novel method for detecting human breast stem cells. First the cells are suspended in a gelatin disc and then the disc is slipped under the kidney

capsule of mice that have no immune system. These mice can't tell the human cells are foreign and so allow them to grow freely. It is remarkable to see that the human cells can then self-organize into little functional mammary glands fed by a blood supply that is provided by the mouse.

Dr. Samuel Aparicio of the BC Cancer Agency and co-author explains, “The long term aim is to figure out what makes normal breast stem cells tick and then use this information to see what may be high-jacked or distorted when these cells become malignant.”

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Prostate brachytherapy experience at the BC Cancer Agency, indications, procedure and outcomes

By Mira Keyes, MD FRCPC, James Morris MD FRCPC, Tom Pickles, MD FRCPC, Michael McKenzie MD FRCPC, Provincial Prostate Brachytherapy Program, BC Cancer Agency, Vancouver, BC

Abstract

Prostate Brachytherapy is a standard treatment for early stage, localized prostate cancer. The Provincial Prostate Brachytherapy Program was established over 10 years ago. Within the BCCA umbrella, over 2,500 patients have been implanted using a common selection criteria, treatment algorithm, and quality control. The procedure is done using a real-time US guidance and fluoroscopy, originally developed by a Seattle group, 20 years ago. Most implants are done with general or spinal anaesthesia as a day-care procedure, over a period of one hour. Most men return to their usual daily activity within days after the procedure.

The program maintains a large prospective database. All patients have clinical, pathological, technical (dosimetric), biochemical results (PSA) and toxicity scores entered into a database. The BCCA Brachytherapy Program has recently published biochemical control rates of the first consecutive 1,006 patients, of those: 58% had low-risk and 42% had intermediate-risk disease. After a median follow-up of 5 years (range 4-10 years), 95.6% of patients have a very low PSA (median PSA 0.04) which indicates a likely long-term cancer cure. Mild to moderate irritative and obstructive urinary symptoms following the procedure are common. They last for several months and in most men subside by 6 to 12 months after the procedure. The short term catheterization rate is 5-10%. Transient rectal irritation is seen in 20% of the patients, rectal bleeding requiring treatment in 2-3%. Erectile dysfunction is seen in 40-60%, and is related to patient's age and pre-treatment sexual function.

The Prostate Brachytherapy Program fosters academic thought and teaching, supporting ongoing research, several clinical trials, a Fellowship Program and training of Radiation Oncology residents. The Prostate Brachytherapy Procedure is available at the

Vancouver, Victoria and Kelowna Cancer Centres. It is expected that the Abbotsford Clinic will be offering the treatment in the early Fall of 2009.

Background

The modern era of prostate brachytherapy started in Seattle in 1987. In the mid 1990s, clinical reports emerged suggesting excellent outcomes. In November 1997, the BCCA established a Provincial Prostate Brachytherapy Program, and as of today, over 2,550 men have been treated. Within the BCCA umbrella, 13 physicians at four institutions carry out the implants according to common selection criteria, treatment algorithm, and quality control.

Brachytherapy ("treatment at short distance") is the placement of radioactive seeds or sources directly into the prostate. Radioactive sources, often called "seeds," (0.5cm in size) deliver radiation to the entire prostate plus a 3-5 mm margins around, to account for possible extra prostatic extension of the tumor. As radiation dose gradients are very tight with brachytherapy, dose falls off very sharply with increasing distance from the sources. As a result, the tumour tissue and prostate are treated with very high doses of radiation while the surrounding normal

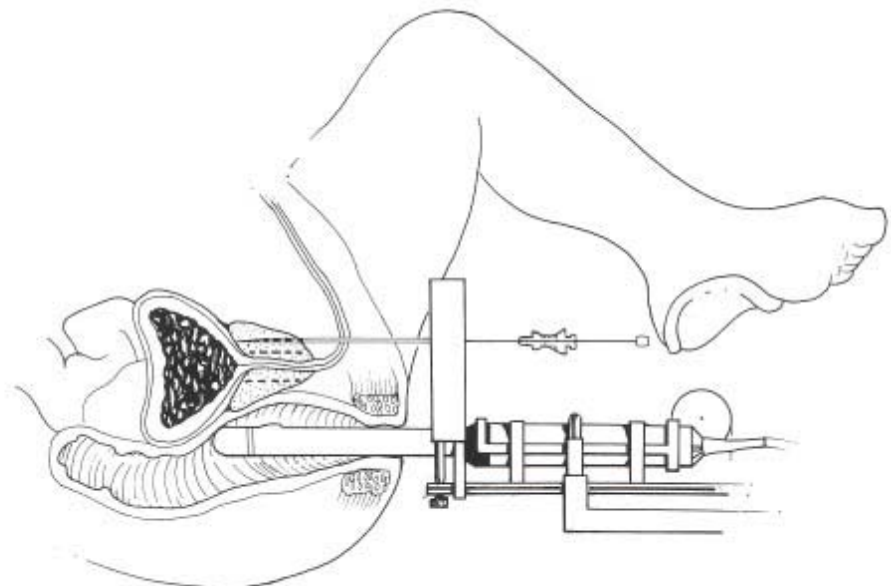
tissues are largely spared from the radiation effect.

Eligibility criteria at the BCCA

Patients suitable for this treatment include those with localized prostate cancer. Suitable patients have either low risk disease: [clinical stage \leq T2a, (disease palpable in one prostate lobe) initial PSA \leq 10.0ng/ml and Gleason Score (GS) \leq 6], or "low-tier" intermediate prostate cancer, [clinical stage \leq T2c (disease palpable in or both prostate lobes) and initial PSA 10-15 with GS \leq 6 or GS=7 with initial PSA \leq 10ng/ml]. At present, Androgen Suppression is additionally used to shrink the prostate prior to implant, or for selected patients with \geq 50% of the biopsy cores positive. Prostate brachytherapy's use in "high risk" [T3, initial PSA \geq 20 or GS=8-10] disease is restricted to patients enrolled in a BCCA multicentre randomized trial (ASCENDE-RT trial), comparing a brachytherapy boost to an external beam conformal boost after pelvic external beam radiation with neoadjuvant androgen suppression.

Implant procedure

The prostate brachytherapy implant is a surgical day-care procedure. Patients are discharged home two to three hours later.



The Radiation Oncologist places the radioactive seeds into the prostate through the perineum, using between 20-28 needles, each carrying 2-6 seeds. The procedure is done using a real-time US guidance and fluoroscopy. Seed placement is guided using 3-dimensional co-ordinates predetermined by a customized planning algorithm using computer modelling leaving 90-150 seeds permanently in the prostate. Most implants are done with general or spinal anaesthesia (occasionally under local anaesthesia). After the procedure a CT scan of the prostate is performed to ensure accurate position of the seeds and adequate radiation dose distribution within the prostate. This is a rigorous QA procedure that was built into our program as a standard practice from the outset. Very rarely, (1 in 200 men) may be asked to come and have the second procedure done, where additional seeds may be placed in the prostate.

Provincial Prostate Brachytherapy Database

The importance of collecting prospective outcomes data was recognised from the inception of the program. All patients have clinical, pathological, technical, and biochemical results entered into a database. Patients are seen at 6 weeks after the procedure, 6 monthly for 2-3 years, and then annually. Toxicity scores are recorded on each visit: physician assessed RTOG urinary and rectal toxicity scores and patient-assessed urinary (IPSS) and erectile (SHIM) standardised scores. Follow up PSA and testosterone values are measured every 6 months.

Side effects

The recovery time after the procedure is short. Men often return to their usual daily activity within days. Severe long term side effects are rare. Most men will experience some urinary symptoms after the procedure. About 50% will have moderate obstructive and/or irritative urinary symptoms lasting several months. By 12 months, 90% of the patients' urinary symptoms will return to baseline⁽¹⁾. 5-10% of patients will require a Foley catheter for urinary obstruction (most for <1 week, 3% of all patients for several weeks or months)⁽²⁾. Long term, <3% of men will require urethral dilatation or a TURP (transurethral resection of the prostate) to relieve obstructive urinary

symptoms. With greater experience in the program, the rate of urinary side effects has declined. For example, the temporary urinary retention rate decreased from 17% to 6% comparing the first two years with subsequent experience^(1,2).

Mild self limiting rectal irritation affects 20% of patients. 1-3% of patient will have rectal bleeding requiring a laser photocoagulation procedure⁽³⁾. Serious rectal injury requiring a major surgical intervention such as colostomy has occurred in two patients out of more than 2,500 men. It is important to ask our advice before any procedure (such as a biopsy) in the rectum, as after high dose radiation to the rectum, as this can cause fistulae. Similarly, laser coagulation is only undertaken when conservative measures have failed.

All curative treatments for prostate cancer have a major potential impact on erectile function (ED). ED rates in our experience mirror that of elsewhere – after 3 years 63% of patients who were previously potent remain so, and that figure is higher in the younger man⁽⁴⁾. There are no comparative data to quote our patients based on local surgical outcomes, but most surgical series quote potency preservation rates of 20-50%.

PSA outcome

It is a common practice to inform patients regarding the treatment outcomes based on publications from other institutions. Outcomes in oncology can vary based on experience and expertise. We believe patients should be informed about the predicted outcomes of treatment based on institutions where they will be treated. The BCCA Brachytherapy Program has recently published biochemical control rates of the first consecutive 1,006 patients, of those: 58% had low-risk and 42% had intermediate-risk disease and 65% received androgen suppression for 6 months together with the implant (no longer a policy). The results show that after a median follow up of 5 years (maximal follow up 10 years), 95.6% of patients have a very low PSA (median PSA 0.04) which indicates a likely long-term cancer cure. We have only 1 patient who has relapsed after the 6-year mark (out of 300 at risk with follow-up >72m). Projected 10-year PSA recurrence free survival is 93.3%. These results confirm the findings from other institutions that PB outcomes are

lasting. Patients who have PSA <0.2 ng/ml at 5 years after PB have only 1-2% chance of subsequent recurrence⁽⁵⁾. The 7-year actuarial overall survival is 93.4%. These results are amongst best published in the world^(6,7).

Radiation protection

Patients are advised to refrain from prolonged close (<2 m) contact with pregnant women and young infants for 3-4 months after brachytherapy. Brief contact (sitting at the same dinner table, giving a child brief cuddle), does not represent a risk. Regarding the general public, there are no imposed restrictions regarding radiation protection after the procedure. The radiation exposure to other people is very low, for example: the total dose of radiation that would be received by a man's sleeping partner (assuming an average separation of 1 meter for an average of 8 hours per day), is about the same dose that would be received from cosmic radiation exposure during a single round-trip plane ride, from New York to Japan.

Other treatment options for localized prostate cancer

Other treatment options for men with localized prostate cancer include radical prostatectomy, external beam radiation and active surveillance.

It is generally believed that results between surgery and PB are similar, while there are some differences in toxicity and quality of life after the treatment. The overall impact on quality of life appears to be somewhat less with PB. However, there is no randomized data comparing different treatment modalities, as studies attempting this failed because patients preferred to choose, rather than be allocated treatment. There are no comparable, population-based surgical outcomes from BC or Canada that we are aware of.

A recent BCCA matched-pair analysis shows that men treated with PB have superior outcomes for PSA control when compared to external beam radiation (EBRT). Five year PSA recurrence free rates are 95% (BT) and 85% (EBRT). After 7 years, the BT result was unchanged, but the EBRT had fallen to 75%. Toxicity rates in this study show worse late urinary toxicity with BT, but worse bowel

toxicity with EBRT[®]. It could be argued that striving for high cure rates in all patients is unnecessary, as most patients with localized prostate cancer will die of other causes. However, younger patients with long life expectancy are those most likely to benefit from curative treatment, avoiding difficult issues with disease recurrence and need for secondary intervention with lifelong androgen suppression.

Active Surveillance (AS) is a novel approach where patients with minimal disease are closely followed and treated if disease progress. Watchful Waiting (WW), also an observational approach is reserved for those who are elderly or with a significant morbidity. Both offer an advantage of avoiding treatment toxicity. However, with Active Surveillance there is also a small chance of lost opportunity for cure or challenges with ongoing anxiety. Other treatment options (HIFU, Cryotherapy) are not considered a standard treatment options for early stage prostate cancer. HIFU in particular, has very high recurrence rates and is not covered by the BC Medical Plan ⁽⁹⁾.

BCCA Prostate Brachytherapy Provincial Program

The BCCA Provincial Prostate Brachytherapy Program has a high academic output; 17 peer-reviewed papers and 34 abstracts, delivery of numerous oral presentations, CME lectures and industry and peer-reviewed funding of \$2.5m for the development of image-guided Brachytherapy in collaboration with the Department of Electrical and Computer Engineering at UBC. The program fosters academic thought and teaching, supporting ongoing research, several clinical trials, a

fellowship program and training of Radiation Oncology residents.

The success of this program owes much to its founders and leaders: The program was set up by Drs. Jim Morris (Program Head 1997-2007, QA chair), Mira Keyes (Head 2007-present, past QA chair 2004-2007), Michael McKenzie and Alex Agranovich. Additional radiation oncologists in the program include Drs. Tom Pickles and Jonn Wu (Vancouver), Howard Pai and Abe Alexander (Victoria), Mitchell Liu, and Winkle Kwan (Fraser Valley), Ross Halperin, David Kim, and David Petrik (Kelowna).

For further information

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BC Cancer Agency discovery continued from page 7

Says Dr Connie Eaves, Director of the BC Cancer Agency's Terry Fox Laboratory, and senior author of the paper, "There is tremendous potential for this knowledge to accelerate the identification of better treatments for breast cancer, particularly the worst kinds."

Dr. Eaves is a recognized world authority on blood-forming stem cells but has also developed a major focus of work on breast

cancer. The work now published on human breast stem cells follows a landmark study from her group in 2006 that identified a similar population of breast stem cells in the mouse. The presence at the BC Cancer Agency of a highly collaborative and top breast cancer research program was key to accelerating the translation of the mouse work to humans.

The research performed in Vancouver was made possible by support from the BC Cancer Foundation; Canadian Breast

Cancer Foundation, BC and Yukon; Canada Research Chair Program; Canadian Breast Cancer Research Alliance; Canadian Cancer Society/National Cancer Institute of Canada; Canadian Institutes of Health Research; Canadian National Science and Engineering Research Council; Genome British Columbia and Genome Canada; the Canadian Stem Cell Network; Canadian Imperial Bank of Commerce; Terry Fox Foundation; and the US Department of Defense Breast Cancer Research Program.

*Insight into Oral Oncology at the BCCA
continued from page 7*

determine the premalignant or malignant nature of a lesion. OralAdvance™ offers a new option to assess suspicious lesions when a biopsy is not warranted or possible and is part of our focus on identifying genetic markers that can predict the progression of dysplasia to oral cancer and enable us to determine the most effective treatment for patients.

The aim of all of these technologies, in most cases, is to help dentists and physicians determine whether there is enough evidence to send a patient for biopsy.

Other factors that need to be considered include:

- The results of a comprehensive head and neck exam including the lateral tongue, floor of the mouth and back of the throat;
- The patient's age, smoking and smokeless tobacco (snuff, chewing tobacco) use and drinking habits;
- Previous cancers diagnosed in the patient;
- The patient's oral health including whether there is inflammation of the general cell lines that could generate oral cancer; (Poor fitting oral prostheses should always be corrected.)
- The patient's diet especially if it is low in Vitamin C, vegetables and minerals; and
- The oral sex practices of the patient especially if an oral lesion is present and HPV is a possibility.

A different emerging challenge that we are dealing with is the use of bisphosphonate medications by patients. These medications, approved in the 1990s, are linked to osteonecrosis of the jaw, once a very rare

condition in which areas of the jaw bone become exposed and do not heal due to dental disease, following oral surgery, or without any known cause. Over two million prescriptions for oral bisphosphonates are now filled every year to treat osteoporosis and we are expecting that more patients will develop this huge clinical problem. Bisphosphonates are used intravenously to treat cancer which has spread to the bone, to prevent hypercalcemia of malignancy, for multiple myeloma, and for Paget's disease and are used orally to treat osteoporosis and osteopenia. Dental and medical professionals need to be careful to take patients' bisphosphonate history into account when determining treatments.

The Oral Oncology/ Dentistry Program at the BCCA

Our program accepts patients through a referral system. A patient must have a diagnosis of oral dysplasia or oral cancer to come to the Agency. Usually, if a physician sees potential signs of oral cancer, particularly a non-healing, painless red or white patch in the mouth, he or she will send the patient to see a dentist with knowledge of oral cancer, an ENT specialist or an oral surgeon who will conduct a definitive biopsy. The vast majority of lesions are benign. If dysplasia or oral cancer is diagnosed, however, we recommend that the individual become a patient at the BCCA even if only for monitoring purposes.

In our Department, we have general dentists and two types of specialists – specialists in oral medicine who are knowledgeable in oral pathology and oral mucosa and prosthodontists who address patients' rehabilitative needs before and after surgery. We also are part of the BCCA's Head and Neck Tumour Group and are involved in the

treatment planning for all patients including pre-treatment dental appointments to eliminate potential sources of infection and to remove hopeless teeth. We see patients post-treatment as well and assist them in getting established with a community based dentist close to home with whom we then liaise regarding their treatment needs. Telehealth, linking dentists and patients with BCCA specialists, is fast becoming a trend to enable better follow-up care for patients in remote areas.

For more information on oral oncology at the BCCA please visit www.bccancer.bc.ca/PPI/Screening/oral/default.htm

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Preceptors making a difference continued from page 2

Abbotsford or Kelowna. Participants who complete the program will receive credits from the College of Family Physicians of Canada and those who are REAP eligible will receive a stipend from UBC Department of Family Practice Enhanced Skills Program plus have their travel and accommodation expenses covered. The next introductory session commences September 21 in Vancouver.

For a complete listing of GPOs and Preceptors in the province please visit www.bccancer.bc.ca/HPI/FPON/Precep/GPO.htm.

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