

In British Columbia (BC) there are approximately 3000 adult survivors of childhood cancer and each year this number increases by about 120. The majority of survivors of childhood cancer will enjoy good health. Second malignancies and premature death are rare events. Based on published data it is possible to identify the subgroups of patients who are at high risk for life-threatening late effects, the corollary is being able to identify those patients (the majority) who are likely to enjoy a healthy outcome. It is important not only to identify patients at risk, but also to provide them with appropriate counselling and surveillance. Currently there is no systematic program in BC for such survivors. The Provincial Pediatric Oncology/Hematology Network (POHN) is in the process of developing risk based guidelines to provide a comprehensive follow up program to those at risk for late health problems.

This issue of the POHN Newsletter will include the following:

- A discussion on some common potential late effects of childhood cancer
- A published report of educational outcomes in childhood cancer survivors
- A description of the current follow up programs at BC Children's Hospital

## LATE EFFECTS OF CHILDHOOD CANCER



*Dr. Sheila Pritchard is a Clinical Associate Professor in the Department of Pediatrics, University of British Columbia. She works as a pediatric oncologist at BC Children's Hospital and is also the Medical Director for the Oncology Long Term Follow Up program. She has been involved with the Childhood, Adolescent, Young Adult Cancer Survivorship Research Program, an epidemiology study of the late effects of childhood cancer, at the BC Cancer Agency for the last 5 years. Dr. Pritchard has been instrumental in implementing 2 ongoing pilot projects at BC Children's Hospital that involve the recall of adult survivors of pediatric cancer for surveillance for late effects as well as counselling to ascertain their understanding of their health risks.*

Over the last 40 years there has been a continuous improvement in cure rates for childhood cancer from approximately 50% to over 80% currently.

Unfortunately, however, survivors of childhood cancer have a significant risk of medical and psychosocial late effects resulting from the disease process or the treatment. At least 65% of childhood cancer survivors will suffer from at least one late effect, and 25% will have a severe or a life-threatening late effect. Many of these problems do not become apparent for many years, and often not until they reach adulthood. The reason for the high rate of late effects after treatment for childhood cancer is because radiation and chemotherapy primarily affect replicating cells. Children have a higher percentage of replicating cells because they are actively growing and, therefore, normal cell growth is

often affected. Late effects include problems with growth and development, vital organ function, fertility and reproduction, secondary malignancies, and psychosocial growth. Many of these complications can be prevented or treated if detected early and, therefore, a surveillance program for survivors of childhood cancer is extremely important.

It is beyond the scope of this article to discuss all possible late effects, but it will focus on the more serious problems which may be preventable or treatable.

### SECONDARY MALIGNANCY

Survivors of childhood cancer have an approximately 3% chance of developing a secondary malignancy within the next 20 years. Risk factors for

secondary malignancy include exposure to radiation, alkylating agents (e.g., Cyclophosphamide), Topoisomerase II inhibitors (e.g., Etoposide), and those with a genetic predisposition to cancer such as the Li-Fraumeni Syndrome which is an abnormality of a tumor suppressor gene.

### Breast cancer

Young women who have been exposed to chest radiation during puberty have an extremely high risk of breast cancer. Females with Hodgkin's disease, treated as teenagers with mantle radiation, have a probability of developing breast cancer of almost 30% at 30 years after treatment. The median time to development of breast cancer is approximately 15 years. Screening for breast cancer should be offered to any young woman who has been treated with radiation encompassing the breasts. Mammography or breast MR scan, if available, should be performed annually beginning 8 years after radiation or at age 25, whichever occurs last.

### Thyroid cancer

The thyroid gland is extremely radiosensitive and may be exposed during radiation to the head, spine, chest or neck. Children exposed to

radiation at a young age have been shown to have over a 50-fold increased risk of thyroid cancer. These patients should be screened with an annual physical examination and an ultrasound of the thyroid every 2 years.

### Brain tumors

Children treated with radiation for leukemia or brain tumors have a slightly increased risk of malignant brain tumors, but a significantly increased risk of meningioma which is a benign brain tumor but which has potential to cause significant harm if untreated. Any child with a history of cranial radiation should be screened with an MR scan of the brain every 3 to 5 years.

### Other secondary malignancies

These include skin cancers (particularly basal cell carcinoma) and myeloid leukemia secondary to alkylating agents or Topoisomerase II inhibitors.

## CARDIOMYOPATHY

Cardiotoxicity can be caused by chemotherapy or radiation therapy. Anthracyclines are very effective and are widely used in the treatment of childhood cancer but are associated with myocardial damage. Children may develop acute cardiac toxicity and/or late onset cardiotoxicity. Anthracycline-induced cardiomyopathy is dose-dependent, and the highest risk occurs in children who have received a cumulative dose of over 300 mg/m<sup>2</sup> but cardiac damage can occur at lower cumulative doses. Other factors which increase the risk of anthracycline cardiomyopathy include treatment for Ewing's sarcoma, the addition of mediastinal radiation therapy, and being of the female gender. Periods of increased risk include rapid growth phases during puberty and during pregnancy. Children who have been treated with anthracyclines at a dose of greater than 100 mg/m<sup>2</sup> should have their cardiac function monitored by echocardiogram every 1 to 2 years until they are fully grown, and every 5 years thereafter. Patients who have received over 100 mg/m<sup>2</sup> of anthracyclines should be monitored by a cardiologist during pregnancy.

## FERTILITY

Radiation to the testes or ovaries will often result in permanent infertility. Exposure to high doses of chemotherapy can also result in infertility. The alkylating agents

(particularly Cyclophosphamide, Ifosfamide and Procarbazine) are especially gonadotoxic. Fertility can easily be measured in post-pubertal males by analysis of a semen sample. Females exposed to high doses of alkylating agents are at risk for premature menopause. Assessment of female fertility is more difficult and there are few reliable tests to predict premature menopause. Women should be counselled regarding this risk. Referral to a fertility specialist is recommended for female patients who have been exposed to high doses of alkylating agents or radiation therapy.

## ENDOCRINE PROBLEMS

### Hypothyroidism

Small doses of radiation (greater than 100 cGy) may damage the thyroid and eventually result in hypothyroidism. Patients exposed to even small doses of radiation to the neck should have annual assessment of thyroid function. Measurement of TSH may not be sufficient if they have also received cranial radiation. For these patients it is recommended that both TSH and T4 be measured.

### Pituitary hormones

The pituitary gland is sensitive to radiation. Any child who has received cranial radiation is at risk for abnormalities of all the pituitary hormones. Growth hormone is usually the most sensitive, and young children who have received cranial radiation should have careful monitoring of their growth and annual monitoring of growth hormone levels.

### Estrogen and testosterone

Any patient who has gonadal toxicity from radiation or chemotherapy should have appropriate hormone replacement.

## PSYCHOSOCIAL PROBLEMS

Many patients miss crucial years of their education while they are undergoing treatment. They also miss opportunities for normal psychosocial growth and development. Cranial radiation and, to a lesser extent, high dose chemotherapy can result in variable levels of neurocognitive impairment. For a small number of patients this puts them at risk for social isolation and the inability to obtain adequate employment. Whenever possible, these patients should be offered educational and vocational counselling, as well as help obtaining appropriate community services and support such

as accommodations in school or in the workplace and disability benefits.

## SURVEILLANCE OF CHILDHOOD CANCER SURVIVORS

The goal of treatment of childhood cancer is to cure the cancer and allow the patient to live a healthy and happy life. Many of the late effects which may affect these patients can be prevented or treated if detected early. It is, therefore, essential that these patients receive adequate post-treatment surveillance. Most patients are followed in the long-term follow-up program at Children's Hospital until they reach their late teens or early 20s. Once they reach adulthood, those patients who received radiation during their treatment are followed at the post-pediatric follow-up clinic at the Cancer Agency by Dr. Karen Goddard. However, this clinic does not have the resources to follow all survivors of childhood cancer so many patients are discharged to their family physicians. In order for these patients to be followed adequately, it is essential that both the patient and the family physician be given a summary of the patient's treatment with information regarding future risks and recommendations for ongoing surveillance.

## FUTURE PROPOSAL FOR LONG TERM SURVEILLANCE

Ideally, all childhood cancer survivors would be registered as part of a long term surveillance program. Patients at high risk for late effects would continue to be monitored at a tertiary care centre, whereas those at lower risk could be monitored by their family physician or a family physician in oncology (FPO). However, follow up would be standardized and results collected in a central registry. This would provide an ideal opportunity for ongoing research as well as the ability to maintain contact with the patients and provide them with new information regarding late effects and monitoring, as it becomes available. Ontario is the only province in Canada with a comprehensive fully funded adult follow up program. Currently British Columbia does not have funding for such a program but the POHN will continue to advocate for this on patients' behalf.

# REPORT OF EDUCATIONAL OUTCOMES IN CHILDHOOD CANCER SURVIVORS

Due to treatment advances in the last three decades, there have been dramatic improvements in survival among children, adolescents, and young adults diagnosed with cancer. Currently in British Columbia, over 80% of children diagnosed under age 15 with cancer, and over 75% of young people diagnosed from age 15 to 24 years, survive at least five years<sup>1</sup>. The long term health issues for survivors are not primarily related to the risk of recurrence of cancer, but more commonly, to sequelae of their treatment (late effects). Given the increasing odds of survival, there is a growing population of survivors within the education system, many of whom may experience educational difficulties<sup>2,3,4,5</sup>. For this reason, the study reported herein has provided a comprehensive assessment of survivors' educational outcomes using standardized outcome measures and risk factors for poor achievement.

All individuals diagnosed with a cancer in BC under age 15 who survived at least five years from diagnosis were identified from the BC Cancer Registry; 782 of these survivors had administrative school records for Kindergarten to Grade 12 available from the BC Ministry of Education from 1995-2004. Treatment information for these survivors was abstracted from health records at BC Children's Hospital and BC Cancer Agency. Survivors' educational results were compared to those for a randomly selected, age and gender-matched comparison group of 8,386 BC school children. All education data was provided to the investigators on an anonymized basis.

The study found that individuals with central nervous system (CNS) tumors, who required cranial radiotherapy (CRT), had decreased academic achievement when compared to a student sample, whereas survivors of other solid tumor malignancies did not have similar decreases in educational outcomes. More specifically, survivors of CNS tumors had statistically significant Foundation Skills Assessment (FSA) test deficits in numeracy and reading (adjusted odds ratios from 0.2-0.6 in various grades, indicating 20% to 60% of the achievement of the general student population) (Figures 1,2,3); leukemia survivors also had lower FSA

scores, although most differences were not statistically significant (Figures 1,2,3). Survivors of other diagnoses demonstrated no significant differences in FSA scores (Figures 1,2,3).

Survivors were three times more likely than the general school population group to receive special education (32.5% vs. 14.1%), after adjustment for other factors, and had more physical, visual, and hearing disability designations. Females and those who had received radiation treatment, in particular CRT, were at increased risk for poor educational outcomes. Survivors who received radiation therapy, particularly CRT, were significantly more likely to have physical and hearing disabilities and poor educational achievement, compared to those who had not received radiation. CNS survivors who received CRT had the poorest FSA outcomes, with less than 20% of this group meeting expectations on all nine FSA examinations. Survivors who received intrathecal methotrexate (IT MTX) were more likely to be enrolled in special education than those who did not receive IT MTX.

## CONCLUSION

This is the first population-based cohort study to utilize standardized measures to examine educational late effects among all survivors of all childhood cancers. By utilizing a geographically defined cohort and a randomly sampled comparison group, and standardized achievement measures from administrative data, potential bias due to incomplete or non-representative subject sampling and recruitment, loss to follow-up, self report and recall are minimized. These results have implications for the management of cancer survivors in the education system. Survivors and parents, clinicians, and educators all need to be aware of at-risk groups, potential educational difficulties and associated risk factors, so as to meet long term educational needs<sup>6,7,8</sup>. Sharing of risk information between clinicians, parents, and school personnel is fundamental in addressing the transition to school<sup>9</sup>. Early identification of problems<sup>10,11</sup> and regular monitoring of progress over time<sup>12</sup> in the school system is essential in providing

appropriate special education services or approaches to learning. The relationship between special education programs and achievement among survivors other than those surviving a CNS tumor or leukemia needs to be further explored to address the question of the contribution of special education to achievement in this group. Finally, although studies have consistently indicated that survivors experience adverse neurocognitive late effects, this risk needs to be directly linked with poor achievement in school<sup>13</sup> and educational intervention opportunities<sup>14</sup>.

*Mary McBride and Maria Lorenzi  
Cancer Control Research  
BC Cancer Agency*



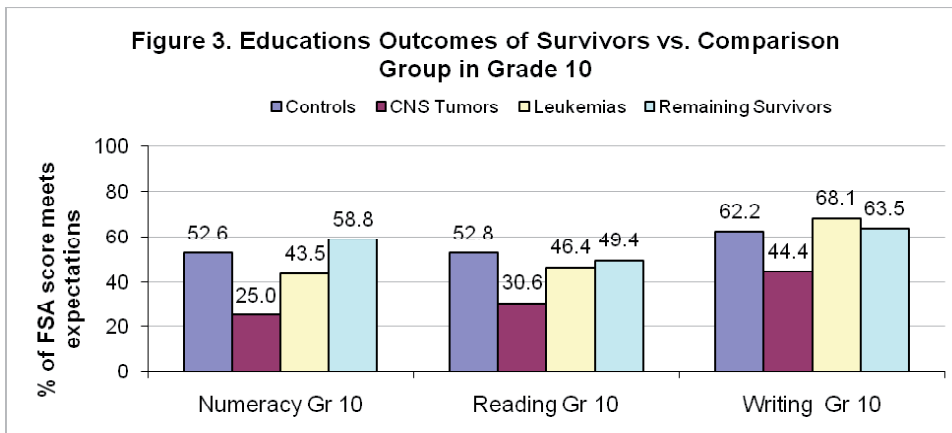
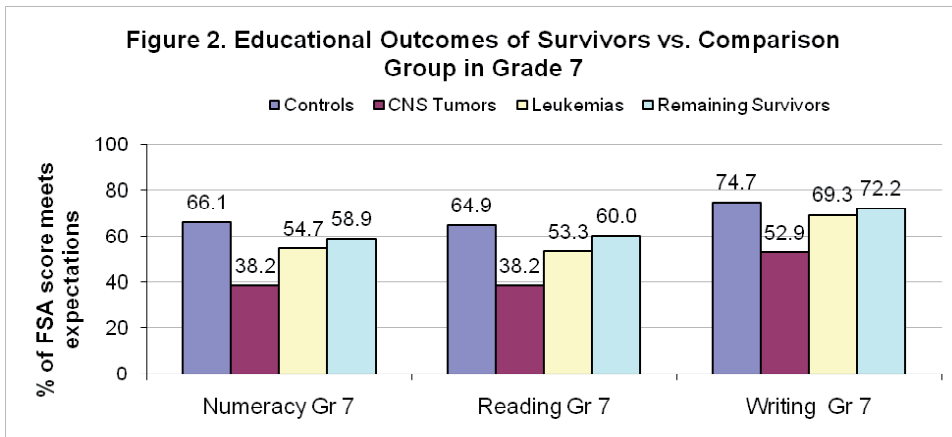
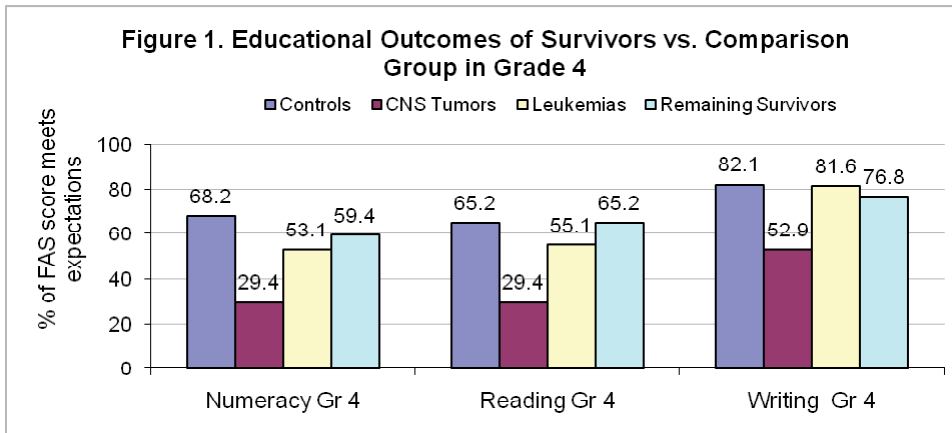
*Mary McBride is an epidemiologist and Senior Research Scientist at the BC Cancer Agency, with an ongoing research interest in childhood cancers, cancer survivorship, and cancer control and surveillance. She is Principal Investigator for the Childhood, Adolescent, and Young Adult Cancer Survivorship (CAYACS) Research Program, and is located in the Cancer Control Research Unit of the BC Cancer Research Centre.*

*Maria Lorenzi is a biostatistician and teacher in the CAYACS Program.*



*CAYACS, a Canadian Cancer Society Research Institute funded program, utilizes administrative databases to examine survivor issues among those who were diagnosed with a cancer at a young age. Reported here are the results of the first population-based study to determine educational outcomes in all survivors of childhood cancer.*

## REFERENCES



- 1 Ries LAG, Melbert D, Krapcho M, et al. SEER Cancer Statistics Review, 1975-2004. Bethesda, Md: National Cancer Institute, 2007.
- 2 Koch SV, Kejs AMT, Engholm G, Johansen C, Schmiegelow K. Educational attainment among survivors of childhood cancer: a population-based cohort study in Denmark. *Br J Cancer* 2004; 91:923-928.
- 3 Nagarajan R, Neglia JP, Clohisey DR, et al. Education, employment, insurance, and marital status among 694 survivors of pediatric lower extremity bone tumors: a report from the Childhood Cancer Survivor Study. *Cancer* 2003; 97:2554-2564.
- 4 Barrera M, Shaw AK, Speechley KN, Maunsell E, Pogary L. Educational and social late effects of childhood cancer and related clinical, personal and familial characteristics. *Cancer*. 2005; 104:1751-1760.
- 5 Mitby PA, Robison LL, Whitton JA, et al. Utilization of special education services and educational attainment among long-term survivors of childhood cancer: a report from the Childhood Cancer Survivor Study. *Cancer* 2003; 97:1115-1126.
- 6 Campbell LK, Scaduto M, Sharp W, et al. A meta-analysis of the neurocognitive sequelae of treatment for childhood acute lymphocytic leukemia. *Pediatr Blood Cancer* 2007; 49:65-73.
- 7 Dickerman JD. The late effects of childhood cancer therapy. *Pediatrics* 2007; 119:554-568.
- 8 Mulhern RK, Palmer SL. Neurocognitive late effects in pediatric cancer. *Curr Probl Cancer* 2003; 27:177-197.
- 9 Coniglio SJ, Blackman JA. Developmental outcome of childhood leukemia. *Topics Early Child Spec Educ* 1995; 15:19-31.
- 10 Robison LL, Green DM, Hudson M, et al. Long-term outcomes of adult survivors of childhood cancer. *Cancer* 2005; 104-(11 suppl):2557-2564.
- 11 Spencer J. The role of cognitive remediation in childhood cancer survivors experiencing neurocognitive late effects. *J Pediatr Oncol Nurs* 2006; 23:321-325.
- 12 Armstrong FD, Horn M. Educational issues in childhood cancer. *School Psychol Q* 1995; 10:292-304.
- 13 Allen A, Malpas JS, Kingston JE. Educational achievements of survivors of childhood cancer. *Pediatr Hematol Oncol* 1990; 7:339-345.
- 14 Eiser C. Neurocognitive sequelae of childhood cancers and their treatment: a comment on Mulhern and Butler. *Pediatr Rehabil* 2004; 7:15-16.

# OFF TREATMENT, AN END AND A BEGINNING

Families and patients have described their cancer treatment journey as an obstacle course. It has contained scary unknowns like waiting for results of tests or scans; it has involved many ups and downs, like hospital admissions and cancellations of plans; and there has been pain and discomfort. Now at the end of this journey there is a new road to travel, a smoother perhaps less complicated road, but not necessarily without bumps. Patients will continue to be monitored closely in follow up care, as the immediate concern is the risk of relapse, during the first 6-12 months off treatment. As time passes from the end of treatment, potential problems eventually shift from relapse to late effects of treatment.

## FOLLOW UP CLINIC

At BC Children's Hospital the oncology follow-up program currently has 800+ patients on active follow up. Team members include 2 follow up nurse clinicians, 1 neuro-oncology nurse clinician, 12 oncologists, and fellows and residents. Follow up clinics are held twice a week in the afternoon, usually 12 patients are seen at that time. There is also a multi-disciplinary neuro-oncology clinic that sees patients for more complicated care issues, every 2 to 3 months. Social work, physiotherapy, occupational therapy, psychology and nutritional services are all available by request on clinic days or can be pre booked. There are two community hospitals that also provide follow up care to off treatment patients and their families: Surrey Memorial Hospital and Victoria General Hospital.

## GOALS OF LONG TERM FOLLOW UP

Follow up care is part of the comprehensive service that is provided to the patients and families in the oncology program at BC Children's Hospital. It ensures that patients and families get the attention they need to improve their quality of life. Follow up care also provides important statistical information that will aid in the understanding of long term effects of childhood cancer treatment. Ultimately, this information will facilitate in improving treatment protocols to maximize survival rates while minimizing the late effects of treatment.

The following is a list of goals for follow up care:

- Assess for disease recurrence
- Surveillance for new problems related to original disease or its treatment
- Screen, diagnose and treat long term effects, includes coordination with other specialists
- Inform patients and their family about the specifics of their diagnosis and treatment
- Educate patients, families, and health care professionals about long term effects
- Provide support related to survivorship issues and treatment consequences
- Improve the health and well-being of patients
- Help survivors plan and coordinate their transition to adulthood and adult health care

## ENTRY INTO FOLLOW UP CLINIC

At the end of active treatment with the trophy presentation the patient and family are informed that in 6 months they will be transferred to the follow up clinic. The patient's VAD/CVC is removed, all oral chemotherapy and sepra are discontinued and a completed summary of treatment is done by the oncologist before the first follow up appointment is made. Patients are followed at least until they have reached 21 years of age and have been off treatment for at least 5 years.

## TRANSITION

It is hard to say goodbye. However, survivors can be transitioned successfully to adult health care with assistance and guidance from the pediatric caregivers. Patients who have had a bone marrow transplant or radiation as part of their initial treatment can be transitioned to adult oncology care. Depending on the patient's needs for follow up, care can also be transferred to their family physician or to a FPO. At the time of discharge from pediatric care all patients are asked to participate in annual letter follow up. A consent is signed by the patient that allows the pediatric oncology follow up program to contact the patient and their adult health care provider on a yearly basis in regards to the patient's health care status. Patients are also given a copy of their summary of treatment; this includes information on their diagnosis, treatment, current health concerns, potential future health concerns and recommended follow up care. A copy of this summary is also sent to their adult health care provider with emphasis on recommended follow up scans, blood work and frequency of health care visits. It is important that the young adult is well versed regarding their own health maintenance needs. On leaving pediatric oncology follow up care the young adult is equipped with a comprehensive survivorship care plan. This will help the young adult make wise health care decisions and feel confident about the future.



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*I have been involved in the follow up program in Oncology at BC Children's Hospital for over 20 years. I oversee the coordination of the follow up clinics and am also a Nurse Clinician focusing on bridging the gap between on treatment and off treatment and helping the young teens off treatment become more autonomous in their health care skills. I follow the patients usually until they have reached their 17<sup>th</sup> birthday and have been at least 5 years off treatment. It is a pleasure to be a part of this program and a joy to see these patients grow into young adults with a passion for all that is ahead of them in their lives.*

# TRANSITION AND FOLLOW UP OF YOUNG ADULT SURVIVORS OF CHILDHOOD CANCER

A comprehensive follow up program for survivors of childhood cancer is important in the after care of pediatric oncology patients. It is imperative that these patients receive as much information as possible about their childhood cancer, their treatment, potential late effects and, most importantly, recommendations for future follow up in their adulthood. Therefore a thorough transition process will empower young adult survivors to advocate for their own health care and well being. For the past 20 years, there has been only one long term follow up nurse clinician, currently managing over 800 follow up patients. In 2009, a second long term follow up nurse clinician position was established on a temporary basis. Some of the responsibilities of this position include further development of the transition process for the young adult survivors (ages 17 and up and minimum 5 years off treatment), transfer care from the follow up program at BC Children's Hospital to adult health care, and implement recall projects with Dr. Chris Fryer and Dr. Sheila Pritchard.

In the past 3 years, 2 recall projects have been initiated in the oncology program at BC Children's Hospital. The goal of the first project was to contact young adult survivors of pediatric cancer who were at high risk of developing significant late effects (ie. those who received radiation and/or anthracyclines) and who did not experience the transition phase. In other words, they were discharged at age 18, would not have received

a treatment summary and possibly are not aware of potential late effects of their treatment. It comprised of inviting 291 young adult survivors by mail to participate in this endeavor. Unfortunately, only 18% responded to the invitation. For the remaining 239, either no response was received or the letters were returned due to wrong addresses. Of the 52 participants who responded, 32 have participated in clinic visits with a pediatric oncologist and a follow up nurse clinician. The clinic appointments included discussion about their diagnosis, treatment and potential late effects. An assessment of their current health status was taken and recommendations for future follow up were suggested. All participants were given a treatment summary and were asked to consent for annual letter follow up with their family physicians and with the participants themselves. This will allow the oncology program to contact their family physicians annually for health updates and to inform participants and their family physicians of future health issues and recommendations for surveillance as they become available. Some late effects identified from the visits included thyroid nodules and meningiomas. These findings reinforced the importance of ongoing surveillance of these survivors as well as educating them about their treatment and potential late effects. Pre/post evaluations of the participants' knowledge of their cancer and treatment and the usefulness of the visit were assessed by the participants. Results of these evaluations indicated

that it was a positive and educational experience. For the remaining 20 participants, some have not been able to schedule a visit, some preferred to respond to letter follow up only, and others have declined to participate.

The second recall project is focusing on 120 patients from two eras; 1982-1985 and 1992-1995, again focusing on patients who are at high risk for late effects. These patients will be counselled by a long term follow up nurse clinician either by telephone or a face to face visit. The content of the counselling session will be similar to the first recall project except there will be no lab or scan investigations. The two counselling methods will be compared to determine if the telephone method is just as effective as an in person visit. Forty invitations to participate in this project have been sent out by mail. The results of the second project will, hopefully, facilitate in the approach for the third project which is recalling the rest of the patients from 1982-1995 (approximately 1,600 in total).

Approximately 125 patients have been transitioned to adult health care over the last year and a further 227 will be transitioned over the next couple of years. This transition list will grow by approximately 120 patients per year. Presently over 125 patients have consented to the annual letter follow up program which is managed by the long term follow up nurse clinicians of the oncology program at BC Children's Hospital.



Marion Nelson, RN  
Nurse Clinician

Long Term Follow-Up Program  
Oncology/Hematology/BMT

*I have been in the Oncology/Hematology/BMT program at BC Children's Hospital for 24 years. I have worked as a staff nurse and a clinic primary nurse. Additionally, I was the nurse clinician in the Transfusion Medicine Laboratory. I continue to be a member of the Apheresis Team.*

*Currently, I am the long term follow up nurse clinician for the young adult long term follow up clinic (ages 17 and up and minimum 5 years off treatment) at BC Children's Hospital, developing a surveillance program for adult survivors of childhood cancer.*

*For the past year and a half, some of my responsibilities include expanding the model of follow up care, developing the process to transition patients to adult health care and working with Dr. Chris Fryer and Dr. Sheila Pritchard on two major recall projects.*

*I have spent many years working with pediatric cancer patients and families and feel very privileged to be able to now work with adult pediatric cancer survivors. This has come full circle for me. It is very rewarding to see survivors that I nursed during their treatment phase who are now grown up, living full lives and have families of their own.*

# UPCOMING CONFERENCES

## BC CANCER AGENCY 2010 ANNUAL CANCER CONFERENCE INTERDISCIPLINARY CANCER CONTROL IN THE 21ST CENTURY Westin Bayshore, Vancouver, BC November 25-27, 2010

• Looking at how we work together, across research and clinical specialties and platforms, to enhance and advance every facet of cancer control in British Columbia, and indeed, around the world

### November 27, 2010: Pediatric Oncology

- Strengthen community partnerships in providing care for the child with cancer within the provincial network.
- Recognize common or significant health risks and factors contributing to survivors of childhood cancer
- Describe the nature of the grief that professionals experience when caring for children with cancer and their families and to explore potential strategies for dealing with grief distress
- Be aware of the recent strategies in improving the outcome of children with ALL and how these may be used for future therapies
- Identify the interdisciplinary team approach of caring for adolescents and their families
- Inform the audience of the issues concerning the care of AYA patients and to introduce the National Taskforce for AYA patients

For more information or to register online, visit the BC Cancer Agency Conference website at [www.bccanceragencyconference.com](http://www.bccanceragencyconference.com)



## POGO 2010 MULTI-DISCIPLINARY SYMPOSIUM ON CHILDHOOD CANCER

### PEDIATRIC SARCOMAS: BIOLOGY TO IMPACT Hilton Toronto Downtown, Toronto ON November 19-20, 2010

- Will focus on pediatric sarcomas, particularly rhabdomyosarcoma and osteosarcoma
- For health care professionals of all disciplines and others with an interest in childhood malignant disease and its treatment outcomes

### November 18, 2010: Pre-Symposium Seminar

#### Cancer & Genetics: Impacts on Family and Health Care Professionals

- What do you know about genetic risks for developing childhood cancer and new techniques for identifying them?
- How do families cope with knowing about genetic risk?
- How can oncology professionals address parents' questions about family history of cancer, causes, fears of 'passing it along' and future family planning?

For more information or to register online, visit the POGO website at [www.pogo.ca](http://www.pogo.ca)



## SAVE THE DATE

### TOO YOUNG, TOO OLD, WHERE DO I FIT IN

Conference focussing on Adolescent Oncology

Chan Centre for Family Health Education  
at BC Children's Hospital, Vancouver, BC

Friday, May 13, 2011

This conference has been postponed to 2012. More information to follow...

Return Undeliverable Canadian Addresses to  
BC Children's Hospital  
Provincial Pediatric Oncology/Hematology Network  
Attn: Paulina Chen, Network Coordinator  
Room A119, 4480 Oak Street  
Vancouver, BC V6H 3V4

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## ANNOUNCEMENTS

### WELCOME

**Dr. Mason Bond** is the new Division Head of the Oncology/Hematology/BMT program at BC Children's Hospital starting April 2010. He completed his residency and fellowship programs at BCCH, before heading to Montreal Children's Hospital. During his 7 years in Montreal, Dr. Bond was Director of the Hemophilia Clinic from 1996-2000 and of the Thalassemia Program from 1997-2000. He returned to Vancouver in 2000 to take up positions as an attending physician of Oncology/Hematology/BMT at BCCH and Clinical Assistant Professor at the University of British Columbia. He is a Principal Investigator of the Children's Oncology Group (COG) with a special interest in Ewing's sarcoma and other pediatric solid tumours. We welcome Dr. Bond as the co-chair for the Pediatric Oncology Hematology Network.

**Dr. David Levy** was appointed as the new President of the BC Cancer Agency in November 2009. Dr. Levy comes from the United Kingdom, where he held positions as the Medical Director of the North Trent Cancer Network and a Medical Advisor for Cancer to the Department of Health. He has extensive experience in cancer strategy and policy, and previously served as a national clinical lead for the National Cancer Modernization Program. Dr. Levy is a fellow of the Royal College of Physicians and the Royal College of Radiologists, London. We welcome Dr. Levy as a member of the Network Steering committee.

### GOOD-BYE

**Barbara Poole**, who works as a Health Services Policy and Research Analyst at the BC Cancer Agency, is transitioning to a life as a full time student. Her doctoral thesis will study the translation of advances in the science of oncology into population-based practice. Barbara has been an invaluable support since the Network was in its infancy. She encouraged us to see the bigger picture while supporting the stakeholders and paying attention to their opinions and concerns. Her philosophy of translating knowledge into action has been the template for the activities of our various working groups; and this will continue to be our guideline for furthering the Network goals. We thank Barbara for her support for the past 6 years and wish her the best in her semi-retirement.

**Dr. Paul Rogers** has stepped down as the Division Head of the Oncology/Hematology/BMT program at BC Children's Hospital but will continue his clinical practice. He maintains an active role in research focusing on nutritional support for children with cancer. Additionally, he is the Chairman of the Nutritional Committee for the Children's Oncology Group (COG), which develops nutritional clinical and translational research and intervention studies for children with malignancies. Dr. Rogers is an active member of the Canadian Partners Against Cancer (CPAC) Advisory Council and is a co-chair of the Canadian National Task force for Adolescent and Young Adult (AYA) patients with cancer. We are grateful for his many years of service as co-chair and we are privileged to have him as a valuable resource.

### The Provincial Pediatric Oncology/ Hematology Network

The Network is an interdisciplinary organization whose goal is to ensure appropriate diagnosis, management, follow-up, and end-of-life care for pediatric patients with malignancies and blood disorders. The Network supports community hospitals and practitioners, and develops partnerships with other health care facilities to enable seamless and integrated care for patients and families on treatment and off treatment. It will further develop and enhance the research programs of basic, translational, and clinical research to better childhood cancer control and improve outcomes for these patients and their families.

### For More Information

To learn more about the Provincial Pediatric Oncology/Hematology Network, or to submit articles or stories to this newsletter, please contact:

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