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# The Slate



The Office of Pediatric Surgical Evaluation and Innovation



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## **The Slate**

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NEWSLETTER  
**THE SLATE**





# MESSAGE FROM THE CHIEF OF PEDIATRIC SURGERY

Welcome to the 2011 Winter edition of the OPSEI Slate Newsletter. In reviewing the submissions to this publication, I would like to thank everyone for their hard work, enthusiasm and creativity for all of the successful programs and activities which continue to improve the care for our pediatric patients and their families.

In this issue, we have featured some of the many exciting pediatric surgical projects at the Oak Street campus. From innovative approaches to enhance medical student education to the recruitment of exceptional new members of our surgical staff, we think you will find inspiration from the dedicated members of the surgical team and their tireless efforts to advance clinical care, research, and education.

This issue highlights some of these groups, such as the excellent staff on Ward 3R and the Surgical Day Care Unit and their commitment to meeting the needs of the kids from their arrival in hospital all the way through to post-operative care.

2011 promises to be a very exciting year for pediatric surgical research, clinical care, and patient safety at BC Children's Hospital. I would like to congratulate you all for these important contributions.

Yours sincerely,

Dr. John S.T. Masterson  
Interim Chief of Surgery  
BC Children's Hospital



Dr. John Masterson, Interim Chief of Surgery, BC Children's Hospital

*“OPSEI is committed to fostering  
an environment which creates  
opportunities for student and faculty  
partnerships in clinical research and  
education.”*

## DID YOU KNOW?

Each year the department supports over 20 medical and undergraduate students for summer research projects. The students and their assigned faculty mentor have, in the past, conducted research in a variety of areas ranging from safe sharps handling to outcomes evaluation in surgery.

# THE SURGICAL DAY CARE UNIT

By Mary Spencer, RN; Adele Lemire, RN;  
Carol Wiedrick, RN

**The Surgical Day Care Unit will soon have a new face, as we undergo our first renovation since 1984.**



The Surgical Day Care Unit is a complex and dynamic environment, welcoming over 7,100 children and their families through surgery each year. Only 20% of these children are admitted after their surgical experience, the other 80% are sent home the same day, requiring that their parents be informed and capable of caring for them. For many children, Surgical Daycare (SDCU) is their first and perhaps only hospital experience, but about 10% of the children will come back for more surgeries, or multiple-staged procedures. With each experience the nurse works towards developing trust and coping skills within both parents and children.

Surgical daycare nurses provide care to children followed by 16 medical, surgical or interventional services and communicate with a variety of health care professionals including surgeons, anesthesiologists, nurses, Child Life specialists and volunteers.

Nursing in SDCU requires good assessment skills, specialized knowledge of surgical procedures and an understanding of both hospital and community pediatric services. Children at BCCH range in age from birth to 16 years, encompassing a broad range of

growth and development issues.

Pre-operative preparation involves the whole family, and includes assessing readiness to learn, completing a thorough physical assessment, preparing the child and family for the procedure, and decreasing children's fears and stresses. Children are often assessed in their parent's arms or engaged in play, and given information in an age-appropriate way. These are but a few of the challenges within the time-pressured environment that is the pace of surgical daycare in this tertiary care centre.

Teaching becomes an integral part of nursing care, beginning with a pre-operative phone call. Parents are empowered by a nurse's recognition of their expertise, and Family-Centred Care is woven through every aspect of their experience.

A recent study by Jeremy Daniels et al (2009) on post operative teaching highlighted the importance of the family's understanding, particularly medication safety, wound care, pain management and anesthetic complications in order to ensure the safest outcome



after discharge. SDCU nurses provide families with both written and oral instructions, and are frequently updating information with various departments to ensure accurate, evidence-based information is given. Parents are often stressed, sleep-deprived and anxious about their child's surgery, which makes teaching challenging. In addition, BC's multicultural society often requires teaching through interpreters.

The Canadian Pediatric Surgical Wait Times Project demonstrated that on average, one third of pediatric patients received surgery past the acceptable wait times. Ensuring patients are ready for surgery and discharged home in a safe and timely manner is a small part of the flow of surgical patients through BCCH, but each step assists in ensuring the P-CATS (Pediatric Canadian Access Targets for Surgery) at BCCH are optimized.

Surgical Daycare will soon have a new face, as we undergo our first renovation since 1984. Look for exciting new changes as Surgical Daycare continues to care for BC families into the future.

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Canadian Pediatric Surgical Wait-times Project, [www.hc-sc.gc.ca/](http://www.hc-sc.gc.ca/)

# BC CHILDREN'S HOSPITAL DENTAL DESENSITIZING

By Kayla Ragosin-Miller, RDH, PID, Department of Pediatric Dentistry

**Children diagnosed with developmental disabilities are some of the most challenging for families and practitioners to deal with.**



Autism, Down Syndrome, Fetal Alcohol Syndrome, ADHD, Epilepsy, Dysfunction of Sensory Integration are just a few diagnoses that are considered under this developmental delay spectrum. Often, behavioral issues follow children with these diagnoses, as they don't typically respond well to traditional discipline due to issues with cognitive delay and lack of speech.

Consequently this creates a barrier for dental practitioners to treat these children, thereby deeming dental care one of the greatest unmet healthcare needs for this special needs population. Due to the fact that no dental program exists for this group Special Smiles Dental Desensitizing was created, to teach independence and acceptance to dental treatment in the office.

Common concerns that link parents of these challenging children include: promoting acceptance in the community and receiving appropriate care. Smells, sounds, and foreign objects in a dental office instill fear for many individuals. Adding an element of the unknown to a child with special needs creates negative behavior in an attempt to avoid an unfamiliar situation.

How do we teach these children to comply with what is expected of them in the dental setting? With the use of visual boards, breaking down the steps requested during a dental appointment, frequent visits, and a positive reward system in place, the apprehension of the unpredictable dental visit diminishes. Instead of negative behavior we get compliance equating to results.

In 2008 I accepted a position as the dental hygienist at BC Children's Hospital Dental Clinic and observed first hand how many children on the Autism spectrum required sedation for basic dental treatment. That is when I took on the challenge of developing the pilot project for Special Smiles Dental Desensitizing Program. I spent time taking methods from various intervention programs used by children with Autism and amalgamated the necessary information to develop a dental program. Such programs included: Applied Behavioral Analysis (ABA), Relationship Development Integration (RDI), Behavioral Analysis (BI) and Social Integration (SI). With the creation of this program, I am now pleased to report, two years later, we've established independence and progress with the children visiting





the dental clinic. Visual boards, personal social stories and sensory armamentaria are personalized for each child's dental visit.

Communication with the children's professional team such as speech therapists, behavioral consultants and school aids are essential to the success of a child's dental desensitizing program.

By working on the same goals in the same way outside of the dental office, a sense of predictability is instilled and children feel in control of what is about to happen. This service saves families hundreds if not thousands of dollars in intervention fees that would otherwise need to be spent to develop by their intervention team. The numerous letters I receive from the parents giving thanks for this program doesn't compare to the hugs and high fives I receive from

a child when they are proud of themselves for completing a task independently.

Currently, with the help of BC Children's Hospital dental team and support from OPSEI (Office of Pediatric Surgical Evaluation and Innovation) a study is underway to investigate the effectiveness of visual pedagogy as a method of desensitizing patients with Autism.

By next June it is our hope to have the study completed and the results announced. It is the intention to continue this desensitizing program and mainstream the children to their regular family dentist. Integration for those with special needs in the community and society is what it's all about, even in the dental world.

*“Currently, with the help of BC Children's Hospital dental team and support from OPSEI (Office of Pediatric Surgical Evaluation and Innovation) a study is underway to investigate the effectiveness of visual pedagogy as a method of desensitizing patients with Autism.”*

# DR. CHRISTINE ALVAREZ'S LAB

By Harpreet Chhina, Research Manager,  
Department of Pediatric Orthopaedics

I have been working with Dr. Christine Alvarez as her Research Manager, since 2006. As a liaison between Dr. Alvarez and her patients, I have the opportunity to gain invaluable experience while collecting data from pediatric patients including infant subjects. As a Research Manager, I am involved in all phases of research; starting from grant writing, ethics preparation, data collection, data management, analysis, preparation of manuscripts to dissemination of results.



Under Dr. Alvarez's supervision, I am currently working on numerous research projects including

Clinical use of Botulinum Toxin A (Botox) In Treatment Of Clubfoot, Pedobarography, Gait Analyses Studies, and Genetic Outcome Studies Of Hereditary Multiple Exostoses. The innovative Clubfoot Program started in September 2000 and introduced serial manipulations and castings with the adjuvant therapy of Botulinum Toxin. This



has reduced the surgical rate at BCCH from 80% to less than 2% in the first year of life, and has revolutionized the way the children with clubfoot were treated in this centre.

We are also involved in a collaborative study with University of Houston, Texas, looking at Genetics of Clubfoot. Currently we are also finishing up a multi centre randomized control trial in collaboration with the Hospital for Sick Kids in Toronto. We are now the only Canadian centre and one of the few in North America that provides this genetic testing as part of the basic care for the families with Hereditary Multiple Exostoses (HME). In

addition the involvement of plastic surgery, radiology, and adult tumour orthopaedics has been incorporated to round out the HME program into a multidisciplinary model. This approach to HME has been recognized internationally and has been made available to other centres attending HME families.

As a Research Manager, I am also involved in supervising and training junior Research Assistants and medical students on short-term research projects. Other than doing research, I help with interpretation for Dr. Alvarez's Punjabi and Hindi speaking patients who have limited English language skills.





# DIVISION OF PEDIATRIC PLASTIC SURGERY

By Ross Petersen, Research Coordinator, Division of Plastic Surgery



## CHANGE OFTEN COMES BEARING GIFTS

The Division of Plastic Surgery welcomed a precious baby girl to the team, little Kate Kennedy, born on September 7th, 2010. Congratulations, Angie! As research coordinator, Angie made momentous contributions to research in plastic surgery, translating ideas generated in the clinic and operating room into feasible research questions. Her work has inspired enthusiasm for research throughout our division, a role that her successor (myself, Ross Petersen) and surgical colleagues carry forward.

## RESEARCH

The goal of our research team is simple: to conduct research that improves pediatric quality of life through evaluation and innovation in plastic surgery.

Our main areas of research encompass burns, upper extremity and craniofacial disorders, and trauma. Since last winter, we have initiated several research projects that are at various stages of completion. We are currently collecting data for a study evaluating the impact that a wonderful locally-produced burn prevention DVD has on parent education and



attitudes toward burn safety. Burns are one of the leading causes of injury resulting in admission to the Emergency Department at BC Children's Hospital, and our focus is to educate parents about burn risks to prevent these injuries. Further

along, we are nearing completion of a Telethon-funded collaboration led by Doria Bellows (Physiotherapy) and Dr. Verchere examining balance and coordination in children with brachial plexus birth palsy injuries. Other initiatives underway include a Rare



Disease Foundation funded study examining facial soft tissue and bony changes in Parry Romberg syndrome (Dr. Bush); a study characterizing a rare disease that leads to the accumulation of fat tissue along nerves (Dr. Courtemanche); a collaboration with the University of California investigating the underlying genetic basis of isolated limb malformations (Drs. Verchere, Courtemanche and Arneja); and a collaboration with Pediatric Oncology and Pediatric General Surgery investigating the optimal placement of venous access devices in children receiving chemotherapy (Drs. Verchere, Pritchard and Webber). OPSEI is also supporting development of an early splinting trial for brachial plexus injuries, and has provided partial salary support for a clinical fellow starting next summer. We have a number of student led projects in various stages of development. Stay tuned for updates!

Our published research output has been steady. Dr. Arneja, a research savvy plastic surgeon that joined our team in 2009,

published three articles in 2010 in the reputable Journal Plastic and Reconstructive Surgery. These papers highlight improved surgical and pharmacological therapies for symptomatic craniofacial hemangiomas. In total, our pediatric plastic surgery research team successfully submitted five abstracts to the 2011 National Plastic Surgery Meeting held in our home city, our best yet. We look forward to another year of smiles and hard work and wish our colleagues site-wide a flourishing New Year!

## Best practice and family-centered care are the shared philosophies of staff working on 3R, the Surgical and Neuroscience inpatient unit at B.C. Children's Hospital

3R was created in 2005 when the Neuroscience and Surgical units were merged to create a larger 32 bed inpatient unit. This busy unit services patients and families for more than 13 different subspecialties. The challenges over the last 5 years included nursing shortages, high nursing turnover, increasing learning needs, and an expanding patient population. However, in the face of their challenges, staff and leaders on 3R have created a community of safety, camaraderie, and respect.

As of April 2010 the unit has successfully retained 60 nurses to 3R, with 43 of these nurses staying committed since its creation. This has contributed to an over 70% drop in overtime since 2005.





# 3R NEUROSCIENCES AND SURGICAL UNIT

Along side the initiation of the Safety Coach Pilot Project the rate of staff injuries is dropping while the awareness of employee wellness is rising. This program also created the opportunity to highlight PHSA's respectful workplace policy.

The committed leaders and health care providers on 3R are supported and engaged in learning opportunities to meet the increasingly complex care demands of patients and families. They are building expertise in many expanding areas including inpatient and outpatient burns, ICP monitoring, and apnea monitoring. This expanding demand

has been highlighted by the successful implementation and operation of the high dependency beds since October 2009. 3R is also a learning hub for nursing, medical, surgical and professional practice students, contributing to the very busy, crowded work environment embraced by the 3R team. This team's positive

and energetic approach to care has created a welcoming and nurturing environment for all. Some of the measurable successes of 3R's high quality of care are highlighted by children and families experiencing shorter wait times in emergency, timely access to care and earlier discharge. This team is committed to safe,

quality patient care and outcomes. Kudos to the fantastic nursing, surgical, medical and professional practice staff who are diligently working to meet the health care needs of this large, complex group of patients. For Neuroscience and Surgical patients, the future is looking bright!



## TESTIMONIALS

*"This is the best team that I have ever been apart of!! It is a place that a new person can feel supported and inspired! The opportunities for growth and education are endless. 3R is very adaptable and capable of keeping up with the increasing acuity and advancement in medicine."*

~ Kaylea Knor, 3R Acting Clinical Nurse Coordinator"

*I appreciate the teamwork on the unit. . . it's like no other place in the hospital"*

~ Jenn So, 3R staff nurse

*"It's a privilege to work in a facility that takes on the most complex burn patients in the province and to have both the knowledge, resources and support to provide both acute and long-term management!" . . . It is rewarding to see the transition from when you first meet the patient to when they are walking out the door.."*

~Michelle Boffo, 3R staff nurse





# NEUROSCIENCES PROGRAM

By Vesna Popovska, MD, M.Sc. CCRP  
Research Manager-Neurosciences Program

Research is a key focus of the Neurosciences Program. Although neuroscience research activities have been ongoing for a long time, the research program as a whole was founded in 2005, when I was hired as a Research Manager to plan, coordinate and manage the entire research within the Neurosciences Program. I am responsible for the overall direction and leadership of the Neurosciences Program, managing a wide range of research projects from initial concept to final approval and launch. I provide leadership in a diverse manner for the research and business functions within the Neurosciences Program. Also, I am involved in the strategic planning, implementation and evaluation of the program activities and I am managing multiple complex projects, including the financial accountability for most of the research accounts. I oversee all human resource matters pertaining to the research staff and students in the Neurosciences Program.

My activities related to research also include ethics submissions, contract and budget negotiations with industry sponsors, grant submissions, reporting to sponsors, granting agencies and ethics board. The work within the program is consistently performed



according to the Health Canada ICH GCP guidelines. On an annual basis, I offer workshops and seminars on the topic of "How to Prepare Your Ethics Submission".

Each year, we have 3-5 summer students alone in the Division of Pediatric Neurosurgery. Last year, one of the summer students, Mr. Andrew Battison, worked closely with Dr. Jennifer Gelinas, and they submitted an abstract and manuscript for the 2010 CNSF conference in Quebec. The abstract was accepted and will be published in the Canadian Journal of Neurological Sciences, and won the President's Prize for best paper by a resident and a \$1000 prize. The final manuscript has been submitted to the journal Neurosurgery in March for peer-reviewed publication. This year, 3 summer students were funded via UBC.

For the purpose of keeping the program's physicians, residents, fellows and nurses up-to-date with respect to ongoing research activities, I provide a quarterly report for the research activities in the Neurosciences program, and make a presentation once a year at research rounds.

Today, the achievements and results of this program serve as a model for building similar programs at BCCH.



# LIGHTS, CAMERA SURGERY 2010

By Kelvin Kwan, Freda Wong, UBC Medical Students

Lights, Camera, Surgery (LCS) was a pilot project launched last year in 2009 as part of an ongoing initiative of the Office of Pediatric Surgical Evaluation and Innovation (OPSEI) and the Department of Urologic Sciences.

Over the last few years, this initiative has been funded by the UBC Teaching and Learning Enhancement Fund for the development of novel online resources aimed at preparing medical students for their clinical years. In short, the LCS project created instructional videos for teaching basic surgical procedures.

One key objective of LCS is to engage medical students during their preclinical years in the pediatric surgical environment to showcase possible future career choices. The LCS pilot project

was received so positively by the student participants and surgical mentors that it received competitive grant funding for 2010 from the UBC Teaching and Learning Enhancement Fund. To play on the theme of filming, LCS can be compared to a TV show that, having had a receptive audience for its pilot, continued on to its second season which has just ended.

## VIDEO STANDARDIZATION

In LCS 2010, two new pediatric surgical disciplines, Pediatric Cardiac Surgery and Pediatric Orthopedic Surgery, were added to the existing five disciplines in the pilot project which included Pediatric Anesthesiology, Pediatric General Surgery, Pediatric Plastic Surgery, Safety Procedures, and Urology. Furthermore, two new partnerships were created - one with the BC Patient Safety and Quality Council, and the other with Providence Health Care for the creation of videos regarding Safety Procedures and Palliative Care respectively. The growth of the project required standardizing the format for the video productions. In LCS 2010, all videos contained a standardized format of 7 important aspects of a surgical procedure: 1) Outline of the Procedure 2) Indications/Contraindications, 3) Preparation, 4) Equipment, 5) The Procedure, 6) Complications, and 7) Follow-up.

## THE STUDENT PARTICIPANTS

The LCS 2010 project consisted of 11 student participants with 10 of them new to the project. The new students were either in their first year of medicine or in premedical studies. An attractive strength of this project was the opportunity for both an early and comprehensive exposure into the field of pediatric surgery. Before the project, the student participants had the opportunity to rank which disciplines they wanted to create instructional videos in. For LCS 2010, every single student had the opportunity to create 3 videos in their top 3 choices of disciplines mentioned earlier, with 2 of the videos being in their top 2 choices.



The student participants were placed in teams of 2 or 3 and were mentored by a professional videographer. In LCS 2010, OPSEI invited David Hauka, the former Head of the Vancouver Film School and current faculty member at Capilano University's Film Program. The session focused mostly on the importance of storyboarding and placing camera shots. Further coaching throughout the production of the video was done by the surgical mentors with whom the students were paired. This became an excellent learning opportunity for both the surgical mentors and students as the mentors focused on what needed to be filmed and the students focused on how it would be filmed and presented. Together, this teamwork led to the creation of 24 very professional instructional videos for teaching basic surgical procedures for LCS 2010 - a 26% increase compared to the pilot project!

Aside from experiencing and learning about these exciting procedures, many students enjoyed how LCS also helped prepare their Operating Room (OR) etiquette for the pre-clinical years. Currently, there is very little OR exposure in the pre-clinical years and medical students are suddenly thrown into the OR environment in the pre-clinical years. Having acquired the skill of managing a camera and a tripod in the OR without contaminating everything will certainly come in handy during clinical clerkship.

As the experience in the LCS 2010 project was partially dependent on the procedures and disciplines of the videos a group was assigned to, we can only give you a taste based on our group's experience. We completed videos in Pediatric Anesthesiology, Pediatric Cardiac Surgery, and Pediatric Plastic Surgery.

In Pediatric Anesthesiology, we worked with Dr. Carolyne Montgomery to create instructional videos on Bag-Mask Ventilation, Oral Airway Insertion, and Laryngeal Mask Airway Insertion. She was extremely enthusiastic in teaching us how it all worked so we could incorporate it into the video. Spending time with Dr. Montgomery in the OR was an excellent learning opportunity as she always made sure to keep us up-to-date with regard to the patient's status from

an anesthetic standpoint. We also understood more about the collegial support that the anesthesiologist and surgeon give each other to achieve good patient care.

In Pediatric Cardiology, we worked with Dr. Andrew Campbell for the Arterial Switch Procedure video. It was thrilling to see the skills involved in operating on such a tiny heart. As the procedure was quite complicated, we really appreciated how much Dr. Campbell helped us with putting the procedure together step by step. Not only did we get to experience such a complicated procedure, but also we were able to see how cardiac surgery works with the Pediatric Intensive Care Unit to provide care for these cases.

In Pediatric Plastic Surgery, we worked with Dr. Jugpal Arneja to create the Unilateral Cleft Lip Repair video. He was very receptive to what we learnt from the videographer session and helped us capture all the important parts of the procedure from the best angle. He also dedicated much of his time to help us with the terminology and anatomy involved in this procedure. It was through this teamwork that we made a clear and concise video focusing on the essential steps of the procedure.

In the Lights, Camera, Surgery project, not only do the student participants learn throughout the project, but they are also benefitting the education of many medical students for years to come by creating and adding to this database of educational resources. We are extremely grateful for all the support LCS has received from OPSEI, UBC, the OR staff at BC Children's Hospital, and all the surgical mentors involved. We are all looking forward to an exciting third season of "Lights, Camera, Surgery".



# DIVISION OF PEDIATRIC OTOLARYNGOLOGY

Dr. Frederick K. Kozak, Head, Division of Pediatric Otolaryngology, BCCH



It gives me great pleasure to introduce the newest member of the Division of Pediatric Otolaryngology. After an extensive search and several applicants, it was quite clear to the selection committee and the members of the division that Dr. Neil Chadha was the top choice. As you can see below, Dr. Chadha has a very strong background clinically which will enhance the care of children with diseases of the ears, nose and throat here in British Columbia. His research

credentials and interest in furthering the advancement of knowledge in our field is an area that we are sure he will bring pride to the division. On behalf of the Division of Pediatric Otolaryngology team I welcome Dr. Chadha to B.C. Children's Hospital and we look forward to a long and collaborative association with him.

By Dr. Neil K Chadha MBChB(Hons) MPHe BSc(Hons) FRCS  
B.C. Children's Hospital, Clinical Assistant Professor

## **DR. NEIL K CHADHA**

I joined the Division of Pediatric Otolaryngology-Head and Neck Surgery at British Columbia Children's Hospital in July 2010. Over the preceding two years, I completed a Pediatric Otolaryngology

Fellowship at The Hospital for Sick Children in Toronto. Prior to that I had undertaken secondary school, undergraduate training, postgraduate surgical training, and my Otolaryngology residency

in the United Kingdom. I was fortunate enough to spend my formative years in Ontario, and the opportunity to come back to Canada for Fellowship training in 2008 unexpectedly turned out to be a one-way move across the Atlantic with my family.

## **RESEARCH**

My interest in research started developing at medical school, when I had the opportunity to become involved in some exciting work on Parkinson's Disease in a world-renowned

laboratory in Manchester. To date, I have published 40 peer-reviewed research papers, most in Pediatric Otolaryngology. Early in my residency, I decided to undertake a Masters Degree in Epidemiology, and was the first Otolaryngology Resident in the UK to obtain this degree. Undertaking this Masters Degree turned out to be an inspired decision, and has had a significant influence on my career since. I have come to BC Children's with ambitions to help develop an exciting and dynamic research program in our Division, to the benefit of current and future patients.

Research areas I am currently investigating include: the sinus manifestations of Cystic Fibrosis (for which I recently successfully obtained grant funding); exploring the association between acid reflux and stridor; outcomes in surgery for recurrent respiratory papillomatosis; and a methodological study of the Pediatric Otolaryngology literature. I have been appointed Director of Research of our





Division at BC Children's Hospital, a member of the recently formed UBC Otolaryngology Research Committee, and the Province's examiner for the Resident's Otolaryngology National In-Training Examination.

In addition to current collaborations with Respiriology at BCCH and Otolaryngology at SickKids Hospital in Toronto, I hope to develop collaborative projects with our Gastroenterology and Anesthesia departments, and eventually to help set-up trans-Canadian initiatives in Pediatric Otolaryngology Research.

### CLINICIAN

First and foremost I see my role as a clinician, and I hope to have brought some modern and cutting-edge approaches and ideas to Otolaryngology at BC Children's. Innovative practices I have initiated include setting-up the new multidisciplinary British Columbia Pediatric

Voice Clinic; providing surgical options for neurologically-impaired children suffering from excessive drooling; offering new experience in complex airway reconstructive surgery; undertaking advanced endoscopic sinus surgery; setting-up collaboration with my colleagues in Neurosurgery for 'keyhole' minimally invasive trans-nasal endoscopic skull base surgery; and setting up a pediatric bone-anchored hearing aid (BAHA) surgical implant program for BC.

I am excited to be embarking on what I hope to be a fulfilling and fruitful career at BC Children's Hospital.

By Mary Metrie, UBC Medical Student Year 3

## Intracranial tumours in infants: Long term quality of life and its predictors



2010 will forever mark a few proud "firsts" in my life. First clinical research project. First oral presentation in a large annual conference. First attempt at learning how to use a statistics software program, and carrying out my own statistical analysis!

This slew of firsts began with a summer research project with Dr. Paul Steinbok at BCCH. Our project studied the long-term outcome of children diagnosed with an intracranial tumour in the first year of life. The literature on this topic is scant and the management of infants with brain tumours is challenging for all concerned: the infant has to undergo years of unpleasant treatment and caregivers have the tough decision to decide whether or not to proceed with treatment. Thus, our driving question for this project was, "At clinical presentation, can we predict the outcome of a child with a brain tumour?" If we could answer this question, and if the outcome could be predicted to be bleak with some certainty, then it would be reasonable to offer parents the option of withdrawal of care before subjecting the young patient to extensive surgical treatment despite the high probability of an unfavourable outcome.

By Ms. Bronwyn Slobogean, Research Manager,  
Department of Pediatric Orthopaedics

To answer our question, we analyzed, using retrospective chart review, the survival rates and quality of life of survivors at least 5 years after diagnosis and the predictors of this outcome. We hypothesized that variables previously established to affect mortality and morbidity in childhood brain tumours (age, tumour size, location, extent of resection, adjuvant therapy and histological grade) were likely to influence functional outcomes. Approximately half (57%) of the infants diagnosed with brain tumours survived more than 5 years. About a third of them (34%) had a good functional outcome and approximately a quarter of them (28%) were able to attend a regular school or take up a skilled job. At presentation, infratentorial location of the tumour and older age were indicators of a bad outcome, for example not surviving past 5 years or having a poor functional outcome. After tissue diagnosis, age and histological grade of the tumour were the best predictors of functional outcome. Based on our analysis then, it seems reasonable to offer families the option of withdrawal of care either at presentation if the tumour has an infratentorial location and their child is an older infant, or after a histopathological diagnosis if the tumour is of a high WHO grade.

I was honoured to share our results at the 2010 AANS Section on Pediatric Neurosurgery annual conference in Cleveland, Ohio. Speaking in a large ballroom in front of distinguished pediatric neurosurgeons was intimidating, to say the least, but it was a great pleasure and the experience was undoubtedly the highlight of my 2010 year. Other memorable moments were shadowing a pediatric neurosurgeon in the clinic, observing some of the surgeries myself, and improving my research skills in a very supportive environment.

I would like to thank my supervisor, Dr. Steinbok, and the pediatric neurosurgery fellow, Dr. Pillai, for this amazing experience. It is exciting to know that I was part of a project that has the potential to impact the way we manage children diagnosed with a brain tumour at a young age. Currently, we are preparing a manuscript that describes the results of this study for publication.

The Pediatric Orthopaedic Research Group consists of Bronwyn Slobogean PA-C, research manager and Clint Hazen, research assistant. We work with four pediatric orthopaedic surgeons: Dr. Chris Reilly, Dr. Kishore Mulpuri, Dr. Firoz Miyanji, and Dr. Rick Beauchamp. We currently have more than 45 projects in various stages of the research cycle, from protocol development and research ethics board approval to data collection and manuscript preparation. Our major research themes are patient outcomes, research methodology, basic science, and engineering. We collaborate with various departments at BC Children's Hospital, such as radiology, anaesthesiology, and the emergency department, as well as with other UBC affiliated organizations such as the Centre for Hip Health and Mobility and the Department of Orthopaedic Engineering Research. Some of our international collaborations include the Rady Children's Hospital in San Diego, California; Manipal University in India; The Royal Children's Hospital in Melbourne, Australia, and the Harms study group. The Harms study group is an international research group focusing on pediatric spinal deformities. Drs. Miyanji and Reilly are the only Canadian pediatric orthopaedic spine surgeons participating in this group.

This summer we will be busy recruiting participants for the Harms research group's prospective cohort studies and for several studies related to fractures in children. One project will compare children who have had distal radius fractures to those who have not. This project will investigate risk factors for fracture and describe the bone quality in these children. Two other fracture studies will compare treatments for two types common childhood fractures to determine which treatment is the best for our patients.

We are very proud of our academic accomplishments. In 2010, we had 17 presentations at scientific meetings, 9 papers published, an



additional 5 manuscripts accepted for publication, and received \$43,000 in funding with several grant applications still pending.

Our dynamic team works hard to provide research expertise and support for the Department of Pediatric Orthopaedics. We are pleased to be part of a team dedicated to providing evidence to improve treatment for paediatric orthopaedic patients.



By Mr. Damian Duffy, OPSEI

## Life gets better for Sampson

When a team of Canadian ENT (ear, nose and throat) specialists travelled to Kampala, Uganda with the Uganda Hearing Health project, they brought medicine from Health Partners International of Canada with them. Sampson was very glad they did.

The medicine was used at Mulago Hospital in the capital, and at two rural hospitals in Jinja and Mbale. Sampson, who was suffering from a serious ear infection, came to the hospital closest to his home, in Mbale. His condition had deteriorated to the point where he required an immediate surgical intervention.

The medications from HPIC were intended primarily for the treatment of patients like Sampson, for chronic otitis media (ear infections) and for management of the postoperative pain following surgery. According to Dr. Brian Westerberg, the patients who received care would not have had access to these drugs otherwise. During the 10-day medical mission, 92 patients were treated in four different centres, always working with local otolaryngologists for assistance and training purposes.

The most common conditions treated were chronic ear infections complicated by perforated ear drums and ear drainage issues. According to Dr. Westerberg, this was particularly problematic for children as it negatively impacted school

activities and social interaction with other children. "We have witnessed occasions in which children no longer attended school as they were either sent home by the teachers, or they chose not to go rather than face the teasing experienced because of ear discharge." Surgery would change Sampson's life in many ways. And touch the people around him.

Dr. Westerberg reports, "Sampson was a courageous young boy who quickly won over the hearts of our medical team. His surgery was very successful. The

very next morning we went to visit him on the ward at Mbale Hospital and he leapt out of bed to thank the doctors and nurses who provided him with his care."



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