

# VITAL SIGNS



THE NEWSLETTER OF MCGILL UNIVERSITY DEPARTMENT OF MEDICINE

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## WORD FROM THE CHAIR

*David Eidelman, M.D.*  
*Chair, Department of Medicine*



### ON QUALITY OF CARE

As a department, providing our patients with the best care possible is our highest priority. We are justifiably proud of the excellent care that we usually provide, typically under challenging circumstances. Nevertheless, we sometimes miss the mark and our care falls short of what it would like to be. While deficiencies in care can be the result of systemic failures, we need to acknowledge that there are times when patients suffer because of our own errors or those of other caregivers. There is growing recognition of the importance of medical errors as a problem in clinical practice. At the level of government there are new laws requiring disclosure of medical errors and the office of "Medical Examiner" has been established with hospitals to deal with errors. Quality management departments have been established in hospitals often modeled on similar efforts in industrial settings. Although these efforts are an important indicator that society is taking health care quality seriously, the importance of quality care at the level of the individual practitioner has not yet become part of the culture of physicians working in the hospital.

For much of medical history, problems with care were usually handled informally with a tendency to cover up the mistakes of colleagues. When informal processes failed, instances of negligence or malpractice were pursued with the ethics boards of hospitals and licensing bodies. In addition patients have been able to seek redress in the courts. In these procedures the individual practitioner is presumed to be practicing high quality care unless it can be shown otherwise. Like a defendant in a criminal case, one

is innocent until proven guilty; you don't make mistakes unless it can be proven that you do. Every clinician knows however, that mistakes happen frequently and that adversarial processes are insufficient to prevent them.

Of course, as professionals we police ourselves using measures such as Morbidity and Mortality rounds, the Medical Acts Committee and so forth. These disparate structures share the characteristic of being driven by sentinel events. Something goes wrong, we discuss and review our procedures, and we sometimes make changes hoping to reduce the risk for our patients. It is unclear however, how effectively this approach prevents errors. When changes are made following a sentinel event, how often do we go back and measure the effectiveness of those changes? How often do we look for unintended consequences of those changes? Only systematic review of outcomes can tell us how we are doing.

A major driver for the increasing emphasis on quality of care is the greater availability of data that comes from the widespread use of information systems and databases. As data becomes available and accessible, systematic review becomes possible. For some disciplines this is not new. In highly specialized fields like transplant and cardiac surgery, data has been prospectively collected and regularly reviewed for many years. However, in our CTUs and ambulatory clinics, where most of our department's activity takes place, regular review of outcomes and procedures is the exception, not the rule.

In other jurisdictions this is changing. In part this is the result of growing interest in the notion of "Pay for Performance". American third party payers, wishing to be sure that they are getting value for their money, are beginning to demand evidence that hospitals or physicians are delivering sufficiently good care to merit continued referral of patients. In the U.K., the National Health Service has established the "Quality Management and Analysis System" as a single national IT system to provide objective

evidence and feedback of care in primary care settings ([www.connectingforhealth.nhs.uk/delivery/programmes/qmas](http://www.connectingforhealth.nhs.uk/delivery/programmes/qmas)). In the U.S.A. some information is available on the Internet regarding hospital performance in the management of cardiac disease and pneumonia. Currently in its infancy, quality data for American hospitals by region is now available on a website hosted by the U.S. Department of Health and Human Services ([www.hospitalcompare.hhs.gov](http://www.hospitalcompare.hhs.gov)). Quality of care data is also made available by private organizations such as HealthGrades ([www.healthgrades.com](http://www.healthgrades.com))

What about us? Quality assessment and management in our hospitals has largely been the domain of the hospital administration. The regular and systematic review of outcomes is not made a part of our daily clinical practice. Most importantly, we have not incorporated quality assessment and improvement formally into our training programs. This needs to change. As health care professionals we have a responsibility to adopt practices most likely to result in good care for our patients, including those related to review and revision. As a department dedicated to the development of new knowledge, we need to apply the same scientific energy and rigor to quality of care as we do to population health, gene discovery and cell signaling. As educators, we need to inculcate the next generation of physicians with the notion that they are responsible for ensuring and improving quality of care they deliver throughout their careers.

How can we do this? Large scale regular review of outcomes and procedures will not be fully possible until we have a capable clinical information system, ideally one that encompasses our entire health care system as has been done in the U.K. In the short term we need to raise the profile of quality related activities so that they become part of our institutional culture, even on a small scale. Health care teams, CTUs and even individual physicians need to develop strategies for systematic chart review. We need to tap into existing databases maintained by the hospital quality management system to focus on clinically important questions. Most importantly, we have to find ways to make quality of care part of the training of our students and residents.



## **DIVISIONAL UPDATE NEPHROLOGY**

*Andrey V. Cybulsky, M.D.  
Division Chief*

The adult Nephrology Division at McGill University provides patient care, research, and teaching in

various aspects of pathophysiology and treatment of kidney disease. There are 15 full-time faculty members at the MUHC, four at the JGH and two at St. Mary's Hospital. Divisions of Nephrology at the RVH and MGH have been in place since approximately 1957. Since their beginning, these Nephrology Divisions were among the first in Canada to provide acute hemodialysis. The first kidney transplant in Canada was performed in 1958 at the RVH. The Division established one of the first comprehensive Nephrology laboratories. The first cadaveric kidney transplant program in Canada was established around 1962, and chronic maintenance hemodialysis, around 1968. Some of the earlier research accomplishments include key studies into the mechanisms of sodium handling and ascites formation in liver failure. Important research in dialysis originated in the Division, including studies into entry criteria for dialysis, and pathogenesis of left ventricular hypertrophy in end stage renal disease.

Presently, in addition to providing consultation services in general adult Nephrology, members of the Division have established or participate in several multidisciplinary clinics, including the evaluation of patients with kidney stones, lupus, hypertension, and advanced chronic renal failure (Chronic Kidney Disease Centre; CKDC). The CKDC clinic team (in place since 1998) is composed of two nephrologists, nurse, social worker, dietitian, pharmacist, surgeon, and secretary/coordinator, with access to a psychiatrist, vascular surgeons, transplant physicians, and specialty nurses in peritoneal and hemodialysis. Timely referral and management of patients with CKD delays progression, decreases anxiety, encourages self-care forms of dialysis and pre-emptive transplantation, and permits early creation of dialysis access.

Chronic hemodialysis and peritoneal dialysis programs are in place at all McGill hospitals. Members of the Division at the MGH oversee satellite hemodialysis units in northern Quebec (using telemedicine technology), and manage renal failure in native populations. A home nocturnal hemodialysis program was started in January 2005 at the MGH, and so far, four patients have been trained. These patients are being dialyzed a minimum of 35 hours per week (five nights per week) while they are sleeping. Patients have reported an improved sense of well being, and do not experience the "post-dialysis fatigue" that usually followed their dialysis sessions on conventional hemodialysis. Objectively, blood pressure and serum phosphate control have improved dramatically.

Kidney and kidney-pancreas transplantation, including peri-transplant management and long-term follow up are provided at the RVH. The kidney transplant program emphasizes living-related kidney donation, which has been greatly facilitated by the development of laparoscopic kidney harvesting.

Members of the Division are involved in research. The laboratory component focuses on defining mechanisms of immune/inflammatory glomerular cell injury that lead to impaired glomerular permselectivity (proteinuria). Investigators are using cellular, molecular and whole animal approaches to elucidate the roles of specific signaling pathways and their targets in the induction of glomerular epithelial cell (podocyte) injury, as well as in the activation of recovery mechanisms or mechanisms that restrict injury. The targets include recently-discovered podocyte structural proteins, including proteins of the glomerular filtration slit diaphragm and cytoskeleton. Another area of ongoing research is the identification and characterization of novel tyrosine and serine-threonine kinase signaling pathways in renal tubular epithelial cell function, and ischemic acute renal failure. The understanding of these pathways in the kidney will provide an opportunity for targeting disease mechanisms by selective activators or inhibitors.

Clinical research themes in Nephrology include development of models towards secondary prevention of chronic renal disease in high-risk populations at levels of both primary (general practitioners), and tertiary care (nephrologists). Approaches to improve accessibility to nephrology from primary care practice through implementing an electronic referral system are under development. Another area involves outcomes research in kidney transplantation. Large databases are used for analysis of various parameters potentially affecting graft outcome and patient survival, including donor characteristics and donor-recipient age matching. Investigators are monitoring cytokine transcript expression in kidney allograft biopsies, and evaluating the effect of treatment of subclinical rejection on long-term graft function. Nephrologists also participate in multicentre trials on management of anemia, hyperparathyroidism, and cardiovascular disease in the dialysis population, as well as immunosuppressive protocols in transplantation.

The Nephrology residency program at McGill University is presently one of the largest in Canada. In addition to training a future generation of nephrologists, members of the Division teach kidney physiology and immunopathology to undergraduate students at McGill. Graduate students and fellows are trained in the research laboratories in the Division. By emphasizing solid teaching, steady advancement in basic and clinical sciences, and development of innovative clinical practice methods, the Nephrology Division is well-placed to face the ongoing major challenges of chronic kidney disease and end stage renal failure.

Nephrology Division's website: [www.nephrology.mcgill.ca](http://www.nephrology.mcgill.ca)

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## WORD FROM THE VICE-CHAIR, EDUCATION

Linda Snell, M.D.

### WHITHER MEDICAL GRAND ROUNDS?

Sir William Osler instituted the first Medical Grand Rounds at McGill. He suggested "active invasion of the hospitals" by medical students, who until then were more used to classroom teaching. His patient-based discussions of diagnosis and management became so popular that they were moved to a hospital amphitheater to accommodate large numbers of students, residents and practicing clinicians, and were named "Grand Rounds". This important educational activity has grown in popularity and is currently in use worldwide. However, in the latter half of the 20<sup>th</sup> century, live patients were increasingly replaced by verbal case presentations that triggered a basic science discussion. More recently, the prominence of the patient case receded further, such that clinical relevance (although implied) is often not discussed. With this evolution came a change in presentation style, from a discussion to a didactic lecture, sometimes on an arcane area of medicine.

Today attendees at Medical Grand Rounds at all McGill hospital sites include a broad audience from senior professors in many different specialties to novice trainees. As well, our colleagues from other health professions may attend. Thus the Grand Rounds presenter has a difficult task, as they are addressing a diverse audience.

Contemporary Medical Grand Rounds have a number of important functions. Their primary purpose is to update faculty and trainees about current advances in the specialties, to review topical issues in medicine in general, and to illustrate the connections between science and clinical care. They also have an important social and clinical function, allowing practitioners to discuss problem cases and to meet colleagues. As well they may be used to provide education about issues that arise from Quality initiatives.



In my opinion, Medical Grand Rounds should address the learning needs of the specialist as a ‘thoughtful practitioner’. Ideally, Rounds should start with a case presentation, then cutting edge science should be presented; the end of the Rounds should link science back to the case and to clinical practice. The attendees’ learning will be improved if the Grand Rounds speakers draw on the experience of the learners, giving them useful and relevant information for their clinical practice. The ideal Medical Grand Rounds should promote active learning by engaging the audience, making them think about the material or interact during the presentation. But Grand Rounds should *not* be a ‘Power Point extravaganza’: the slides should support and not overwhelm the presentation.

What about the future of Medical Grand Rounds at McGill? In the next decade I hope there will be increased interaction and collaboration between all McGill hospitals. The use of technological advances such as Telehealth or videoconferencing will allow Grand Rounds presentations to be ‘beamed’ to all McGill sites. Grand Rounds will support the education function of the McGill RUIS and be available to physicians in the McGill region and beyond. Grand Rounds will also be a social occasion: an opportunity to meet colleagues, to share ideas, to catch up on the latest ‘hallway’ consultation needs, not only within our own hospitals but, with the use of technology, across Quebec. I think there will be a move back to a patient-centred focus, perhaps bringing in ‘real’ patients in person or through the use of technology.

Grand Rounds encourage learning when they respond to the needs of the learner, draw on the experience of practicing specialists, engage the audience, use clinical cases as the stimulus for learning, and ensure that the content presented is applicable and relevant. I think we must work to improve the quality of Grand Rounds, as there is educational evidence that well-planned, well-presented Rounds change the way we practice and improve the care of our patients.

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## **WORD FROM THE VICE-CHAIR, RESEARCH**

*Ernesto L. Schiffrin, M.D.*

### **CHALLENGES FOR RESEARCH IN A CLINICAL DEPARTMENT: WHAT ARE SOME OF THE ISSUES?**

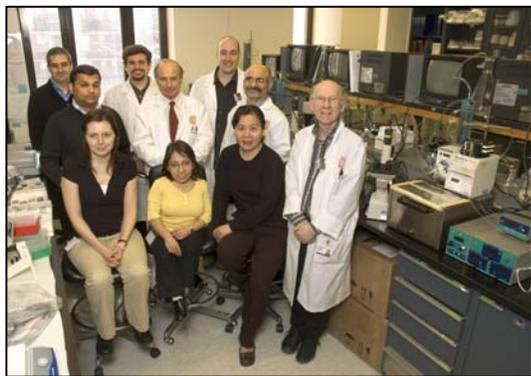
As I assumed the duties of Physician-in-Chief at the SMBD Jewish General Hospital this year and was named Vice-

Chair for Research in the Department of Medicine, I asked myself and not for the first time of course, many questions. What is the nature and scope of the research to be carried out in a clinical department? What are the relations between basic and clinical and translational research? What has to be done to encourage and nurture patient-oriented research in a clinical department? How will we ensure that the trend to a decrease in the number of physicians involved in clinical research evident over the last 25 years changes direction and succeed in increasing the number of physician-scientists? How does one encourage young physicians to follow a career in research when there may be so many sources of frustration as grant applications or papers may not be accepted, and financial gratification is not competitive with that of the practice of medicine? What recommendations do we give to young physicians who are looking for mentorship, in relation to what time and energy has to be dedicated to training and research, versus teaching and practice? How will we go about recruiting and retaining clinician-scientists in our clinical department, and manage to protect time for research for them? How do we ensure that these physician-scientists are competitive in the granting process? What should the balance between PhDs and MDs be in the research effort of a clinical department, and what should the relation between these two different but overlapping training paths for clinical research be? How do we create the teams that in collaboration will be able to achieve the required level of complex and multiple expertise necessary for patient-oriented research if translational science is to be effective? How do we proceed to recognize the individual achievements of participants in the teamwork needed to carry out these translational trials? Are there core facilities that should be provided to ensure that the adequate bioinformatics, statistical, imaging and other support is available? Should we create clinical research centers? If yes, should they be virtual and located at several sites, or alternately, in only one physical emplacement? How should these activities integrate within the department and with the Division of Experimental Medicine? Are there new creative or innovative programs and structures that are developing in other milieus that we should emulate in order to achieve greater success in this challenging enterprise?

It is critical for us to answer these questions if we are to transform our clinical departments into centers for translational science that allow us to efficiently increase our knowledge and provide solutions for pressing healthcare needs of our population. These questions arise in a rapidly changing scientific environment where sequencing of the human genome and developments in genomics and proteomics, understanding of human genetics, knowledge about signalling pathways, creation of new models of human disease, and many other sources of progress allow increasingly the potential for rapid translation from the bench to the bedside.

I will attempt to address some of these and other questions in successive short pieces to be published in our Department Newsletter. In the meantime, let me invite you to submit to me questions or suggestions. The latter should be directed toward either answering the questions enumerated above, or other that any of you feel pertinent to be addressed.

I hope that we will be able to maintain a dialogue, that I look forward to since I have much to learn from the members of our department, be they involved or not in clinical or translational research. I also look forward to opportunities to meet some of you at different venues, including a retreat that we plan to organize toward the end of the year in which I hope that we will have participation of all members of the department with an interest in clinical and translational research.



*Dr. Schiffrin and team in his lab.*

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## PROMOTIONS

Congratulations to the members of our department who were recently promoted to Associate Professor.

**Michael J. Churchill-Smith**  
**Silvy Lachance**  
**Rontuan Lin**  
**Ann Walling**

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## AWARDS AND GRANTS

### FRSQ SALARY AWARDS

We would like to congratulate the following faculty members who have been successful in the 2006-2007 competition:

Chercheurs nationaux:

**Ann Clarke**  
**Richard Kremer**

Chercheurs-boursiers:

**James Brophy**  
**Lisa Koski**  
**Marcel Behr**  
**Bertrand Jean-Claude**  
**Jacques Galipeau**  
**Yong Rao**  
**Maya Saleh**

Chercheurs-boursiers cliniciens:

**Marina Klein**  
**Jose Antonio Morais**  
**Ronald Postuma**  
**Mark Blostein**

## CIHR OPERATING GRANTS

We would also like to acknowledge the success of our faculty members who were awarded operating grants in the most recent funding competition:

**Moulay Alaoui-Jamali**  
**Marcel Behr**  
**Nicole Bernard**  
**Volker Blank**  
**Mark Blostein**  
**Kaberi Dasgupta**  
**Gustavo Duque**  
**Anne Gatignol**  
**Jacques Genest**  
**Qutayba Hamid**  
**Christina Haston**  
**Marina Klein**  
**Antonis Koromilas**  
**Anne-Marie Lauzon**  
**Jean-Jacques Lebrun**  
**Chen Liang**  
**Errol Marliss**  
**Andrew Moulard**  
**Premysl Ponka**  
**Barry Posner**  
**Yong Rao**  
**Stéphane Richard**  
**Maya Saleh**  
**Erwin Schurr**

## ADDITIONAL AWARDS

Congratulations for these additional awards.

**Keith K. Murai** has been awarded a grant from the EJLB Foundation for a research project titled “Characterizing dynamic neuron-glia interactions that regulate synapse structure and function”.

**Morag Park** and colleagues have been awarded a three-year grant for \$ 3 million from the National Cancer Institute of Canada (Terry Fox New Frontiers Program Project) for a project titled “Preclinical models and therapeutic targets for metastatic breast disease”.

**Morag Park** and colleagues have been awarded a five-year grant for \$ 4.5 million from the Canadian Institutes of Health Research for a project titled “CIHR Team in Cancer Progression and Metastasis”.

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## HONOURS

**Alan Barkun** has been awarded the status of inaugural Fellow of the American Gastroenterological Association.

**Carlo Fallone** has also been awarded the status of inaugural Fellow of the American Gastroenterological Association.

Oncology Program Director, **Joseph Ragaz**, was invited to become a member of the board of directors for the Cancer Advocacy Coalition of Canada (CACC).

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