

**Annual Report**  
**Division of Infectious Diseases, Department of Medicine**  
**Sir Mortimer B. Davis - Jewish General Hospital**  
**April 1, 2006 - March 31, 2007**

**I. Highlights**

The Division of Infectious Diseases continues to be extremely busy, a reflection of the ongoing and important role of infectious diseases in our local, national, and international communities. Building on a strong tradition of clinical service, research, and teaching, the Division has expanded its activities in the following fields:

- Clostridium difficile-associated disease (CDAD)
- Refugee and immigrant health
- Vaccine-preventable diseases
- Tuberculosis
- Emerging infections (e.g. *Clostridium difficile*, MRSA, VRE)
- Bioterrorism, pandemics
- New vaccines (i.e. Human Papillomavirus [HPV])
- HIV vaccine delivery system
- New antibiotics for the treatment of infectious diseases

Members of the Division co-published an in-depth analysis of the Montreal outbreak of **C. difficile-associated disease (CDAD)**, and continue to perform ground-breaking research in this area. Studies have been organized or are underway to investigate better diagnostic tests, improved therapies, and DNA sequencing of this bacterium.

As well, large grants were received from both public and private sources for the continued studies into vaccine-preventable diseases in the Canadian foreign-born population of immigrants and refugees.

The division has maintained an extremely active and high-profile clinical research unit, with new studies related to infectious disease vaccines (HPV and hepatitis B), over-whelming sepsis (“SIRS”), prevention of tuberculosis with short-course treatments, and ultra-rapid diagnostic methods for “super-bugs” such as VRE, MRSA, and *C. difficile*.

Dr. Portnoy continues to serve the Hospital in the capacity of Director of Professional Services.

Dr. Miller has been the Chairman of the Infection Prevention and Control Committee for the Hospital for the past 15 years.

All members serve as teachers and examiners for medical students, and also serve on various Hospital committees.

## **II. Evaluation of Past Academic Year**

### **1) Teaching Activities**

#### **Dr. T.F. Brewer**

-March 2006 Department of Epidemiology, Biostatistics and Occupational Health departmental lecture series. “Epidemic Intelligence: The Role for a Non-Governmental Reporting System” Lecturer for 30-40 McGill University Faculty and Graduate Students 20 hours of preparation; 1.0 hour lecture

-April, 2006 Back to Basics Course “AIDS in the Tropics” 15-20 McGill University Medical Students. 15 hours preparation; 1.0 hour lecture; 1.0 hour supervised discussion

-May, 2006 Tropical Diseases: A review of clinical and laboratory medicine Lecturer for McGill University Health Centre Continuing Medical Education Course 15 hours of preparation; 1.0 hour lecture

#### **Dr. Andre Dascal**

-March 2006: Back to Basics Course (15 medical students) for 3 weeks.

-Unit 7 (Infectious Diseases) teaching - McGill University Faculty of Medicine

#### **Dr. Mark Miller**

-November 2006: Healthcare-associated infections and the legal system. McGill University Faculty of Law. 2 hours lecture.

-Unit 7 (Infectious Diseases) teaching - McGill University Faculty of Medicine  
Topic: Medical mycology and antifungal therapies

#### **Dr. Christina Greenaway**

-“Back to Basics” course (McGill University Faculty of Medicine): International Health and Tropical Medicine.

-Tropical Diseases: A review of clinical and laboratory medicine (McGill Centre for Tropical Diseases).

### **2) Research Activities**

### **Dr. Andre Dascal**

-“Ability and Willingness of Health Care Workers to Report for work in an Influenza Pandemic. CIHR, 2007

-“Consortium de recherche québécois sur le Clostridium difficile” FRSQ, 2006

-Consortium de recherche sur le Clostridium Difficile, CIHR, 2005-7

- Developing Genome Resources for Clostridium difficile, Genome Canada 2007

### **Dr. Christina Greenaway**

-“Developing a Point of Care Test to Measure the Susceptibility to Infectious Diseases in Immigrants” BioVeris Corp.

-Canadian Institutes of Health Research (CIHR). Interdisciplinary Capacity Enhancement Grants.

-“Linking community, practitioner and policymaker in building a preventive care strategy for disease prevention in immigration and other migrants from developing countries”

-United States Centers for Disease Control and Prevention (CDC).“Tuberculosis Trials Consortium (TBTC), US Public Health Services Studies.” (Shared with Dr. D. Menzies)

-Fonds de recherche en santé du Québec (FRSQ). “Infectious Diseases in Immigrants: Burden, Impact and Interventions” Subventions d’Établissement de Jeunes Chercheurs Cliniciens.

### **Dr. Mark Miller**

-PPD Development # Protocol # 03-031 – A Double –Blind, Placebo-Controlled Study of E5564, A Lipid A antagonist Administered by Twice Daily Intravenous Infusion in Patients with Severe Sepsis

-Optimer Pharma Inc. Protocol #: 04-117: An Open-Label, Dose Ranging, Randomized Clinical Evaluation of OPT-80 in Patients with *Clostridium difficile*-Associated Diarrhea (CDAD)

-Protocol # 03-033 A prospective Randomized, Double-Blind, Placebo Controlled Study Evaluating Prophylactic Administration of lactobacillus GG (LGG) for the Prevention of Clostridium difficile-Associated Disease and Antibiotic-Associated Intestinal Problems.

-Protocol # 04-058: A phase III, double-blind, randomized, controlled, multi-center study to evaluate the efficacy of GlaxoSmithKline Biologicals’ HPV-16/18 VLP/AS04 vaccine

compared to hepatitis A vaccine as control in prevention of persistent HPV-16 or HPV-18 cervical infection and cervical neoplasia, administered intramuscularly according to a 0, 1, 6 month schedule in healthy females 15 – 25 years of age

-Boehringer Ingelheim. “An Open-Label Safety Study of Tipranavir Co-administered with Low-dose Ritonavir in Patients with advanced HIV-1 Infection and Limited Treatment Options.”

-Becton-Dickinson / Geneohme. Clinical validation of the molecular-based assay IDI-VRE for the direct detection of vancomycin resistance in rectal and stool specimens

-Becton-Dickinson / Geneohme. Clinical validation of the molecular-based assay IDI-MRSA/MSSA for the direct detection of methicillin-susceptible and methicillin-resistant *Staphylococcus aureus* in nasal and wound swabs

-Becton-Dickinson / Geneohme. Clinical validation of the molecular-based assay IDI-MRSA/MSSA for the direct detection of methicillin-susceptible and methicillin-resistant *Staphylococcus aureus* in blood cultures

### **Dr. Jerry Zaharatos**

-Use of electroporation as a means of delivering an HIV vaccine. Aaron Diamond HIV Research Labs, New York.

### **3) Clinical Activities**

The walk-in Infectious Diseases Clinic operates on a daily basis (Monday to Friday) in the mornings (09-11h00). The clinic is staffed on rotation by Infectious Diseases specialists (i.e. Dr. Jack Mendelson, Dr. Mark Miller).

The Division also has a weekly Tuberculosis (TB) Clinic (Thursday afternoons) which handles patients with active tuberculosis as well as a screening for potential TB. The clinic is involved with the Public Health Department for TB contact-tracing in the Montreal area. This clinic is staffed by Dr. C. Greenaway, Dr. Mark Palayew, Dr. Karl Weiss, and Dr. Mark Miller.

There were 7,761 patient visits in both Infectious Diseases and Tuberculosis Clinics during the past year.

Drs. Portnoy, Miller, Greenaway, and Dascal see patients in their clinical offices. There were 9,000 patients seen in these offices last year.

There were over 1,500 inpatient consultations for the Infectious Diseases consult service at the JGH during the year.

#### **4) Faculty**

Full-time (GFT) members:

Dr. Mark Miller (Chief)

Dr. Andre Dascal

Dr. Christina Greenaway

Dr. Jack Mendelson

Dr. Joseph Portnoy

Dr. G. Zaharatos

Part-time (associate) members:

Dr. Timothy Brewer

Dr. David Portnoy

Dr. Karl Weiss

#### **5) Consulting Activities**

None reported

#### **6) Honors, Awards and Prizes**

None reported

#### **7) Service to Academic Community and other contributions**

##### **Dr. Timothy Brewer**

-ECDC Consultation with Members States on Epidemic Intelligence, Stockholm, Sweden, 2006

##### **Dr. Andre Dascal**

-“Clostridium difficile Outbreak: The Montreal Experience. Infectious Diseases Special rounds, Cornell Medical Centre, New York, March 2006

-Current Progress and Best Practices in Containing and Eradicating Clostridium difficile. In 3<sup>rd</sup> Annual Infection Control, Insight Toronto, January 2006.

##### **Dr. Christina Greenaway**

-“Susceptibility to Vaccine Preventable Diseases in New Immigrants.” Presented at Epidemiology Rounds, Department of Clinical Epidemiology, Montreal General Hospital. January 31, 2006. Montreal, Quebec

-“Health Issues of Immigrants and Refugees” Tropical Diseases. A Review of Clinical and Laboratory Medicine, McGill Centre for Tropical Diseases. May 24-26/06. Montreal.

-“Tuberculosis in the Tropics” Tropical Diseases. A Review of Clinical and Laboratory Medicine, McGill Centre for Tropical Diseases. May 24-26, 2006. Montreal, Quebec.

-Health Issues of Immigrants and Refugees.” Presented at Medical Grand Rounds. SMBD- Jewish General Hospital. June 12, 2006. Montreal, Quebec.

-“Screening Immigrants to Canada. Why do we Screen for TB and not for other Diseases?” The Dorothy Wiselberg Seminar. Mtl Chest Institute. June 12/06. Montreal, Quebec.

-“Seroprevalence of Vaccine Preventable Diseases among Immigrants to Montreal, Canada.” Monthly rounds at the Montreal Department of Public Health. September 20/06. Montreal.

-Seroprevalence of Vaccine Preventable Diseases among Immigrants to Canada.” Presented at the 55<sup>th</sup> American Society of Tropical Medicine and Hygiene (ASTMH), Annual Meeting. Symposium on “Refugee and Immigrant Health Issues in the US and Canada- a two part clinical care series”. November 12-16, 2006. Atlanta, Georgia.

-“Seroprevalence of Vaccine Preventable Diseases among Immigrants to Montreal, Canada.” Presented at Monthly rounds at the CLSC Côte-des-Neiges. December 13, 2006. Montreal, Quebec.

### **Dr. Mark Miller**

-Symposium: Clinical management of *Clostridium difficile* associated diarrhea. NFID 2006 Annual Conference on Antimicrobial resistance: Science, prevention & control. Bethesda, MD, June 2006.

-Clostridium difficile.CHICA Canada “Bridging Global Partnerships”, London, Ont. May 6-10, 2006.

-“Clinical Management of *Clostridium difficile*-associated Diarrhea”. 2006 Annual Conference on Antimicrobial Resistance – Science-Prevention-Control. Bethesda, Maryland. June 2006

-“C.difficile: Update on a new disease”. Update on digestive diseases for physicians and

surgeons 2006. CME University of Toronto and Mount Sinai Hospital, Toronto, Ontario. November 2006

-“Emerging Community and Healthcare Acquired Infectious Diseases”. 37<sup>th</sup> Annual Symposium, Eastern Pennsylvania Branch of the American Society for Microbiology. University of Pennsylvania, Pennsylvania, PA. November 2006

-“Canadian and American system for the surveillance of Infection Control”. La Surveillance au service de la prévention et du contrôle des infections nosocomiales symposium. Montreal (Canada) November 2006.

## 8) Publications & Abstracts

--Brewer T. Association of Faculties of Medicine of Canada Resource Group on Global Health. Towards a Medical Education Relevant to All: The Case for Global Health in Medical Education. Ottawa: Association of Faculties of Medicine of Canada; 2006:25

--Gretha De Beer, Mark Miller, Lucie Tremblay, Johanne Monette. An outbreak of scabies in a long term care facility : the role of misdiagnosis and the costs associated with control. *Infection Control and Hospital Epidemiology* 2006;27:517-8.

--Boyd DA, Miller MA, and Mulvey MR. *E.gallinarum* N04-0414 harbors a VanD-type Vancomycin resistance operon and does not contain a D-alanine: D-alanine 2 (*ddl2*) gene. *Antimicrobial Agents & Chemotherapy*, 50(3),1067-70, 2006.

--Miller MA. Surveillance for Nosocomial *Clostridium difficile* Associated Diarrhea (N-CDAD) within Acute-Care Hospitals in Canada: Results of the 2005 Nosocomial Infections Surveillance Program (CNISP) Study Shows Escalating Mortality. Presented at Society for Healthcare Epidemiology of America (SHEA) Mar, 2006. Chicago, Ill, USA.

--Miller MA. Presence of highly-virulent clone of *Clostridium difficile* (CD) among Canadian hospitals: strain characterization and correlation with severe disease and death. Presented at Society for Healthcare Epidemiology of America (SHEA) Mar 18-21, 2006. Chicago, Ill, USA.

--Gravel D, Miller M, Boyd D et al. Presence of a highly-virulent clone of *Clostridium difficile* (CD) among Canadian hospitals: strain characterization and correlation with severe disease and death. 6<sup>th</sup> International Conference of the Hospital Infection Society, Amsterdam, the Netherlands, 15-18 October 2006.

--Gravel D, Miller M, Mulvey M, et al. Surveillance for *Clostridium difficile* Associated Diarrhea (CDAD) within acute-care hospitals in Canada: results of the 2005 Canadian Nosocomial Infections Surveillance Program (CNISP) study shows escalating mortality.

6<sup>th</sup> International Conference of the Hospital Infection Society, Amsterdam, the Netherlands, 15-18 October 2006.

--Farhat M, Greenaway C, Pai M, Menzies D. "False positive tuberculin skin tests-What is the absolute effect of BCG and non-tuberculous mycobacteria?" *The International J of Tuberculosis and Lung Disease*. 2006;10(11):1192-1204.

### **III. Objectives and Priorities**

The objectives of the Division of Infectious Diseases remain:

- high-quality service to the outpatients and inpatients of the Hospital
- continued research in the fields of new anti-infectives, novel vaccines, and cutting-edge diagnostic techniques
- ongoing education in the vast field of Infectious Diseases for students, residents, fellows, nurses, other healthcare personnel, and affiliated fields

The priorities of the Division of Infectious Diseases continue to be the expansion of our clinical and basic science research platforms. Since this Division has been in the forefront of *C. difficile* research for the past 3 years, we have prioritized this as an important continuing endeavor. We hope to expand our group to include new members with expertise in the analysis, typing, and control of *C. difficile*, while we maintain a high profile in our other areas of expertise.

Respectfully submitted,

Mark Miller, MD  
Chief, Division of Infectious Diseases