

Annual Report
Division of Infectious Diseases and Diagnostic Microbiology
Department of Medicine - Jewish General Hospital
January 1 - December 31, 2012

SUMMARY

Introduction

Infectious diseases remain a major cause of mortality and morbidity worldwide. These often preventable and treatable diseases have seen the emergence of new infections such as SARS, reemergence of old foes such as measles and return of more virulent forms of known pathogens such as the superbugs MRSA, VRE and *C. difficile*. The emergence and reemergence of these pathogens have been greatly facilitated by increasing population migration, conflict and rapid air travel. These factors have the increasing burden of HIV, TB, chronic hepatitis' and other infections found in the diverse population served by the JGH. The JGH division of Infectious Diseases has thus focused on the following topics for its primary interests: 1) Emerging infections and "super-bugs" (e.g. MRSA, VRE, CRO), especially *Clostridium difficile* infection (CDI); 2) HIV immune response and vaccinology; 3) Refugee and immigrant health; 4) Vaccine-preventable diseases and new vaccines (i.e. hepatitis B virus, varicella-zoster virus, *human papilloma virus*, *C. difficile* and others); 5) Management and prevention of Tuberculosis and 6) Novel antibiotics and immune system modifiers for the treatment of infectious diseases.

1. Clinical programs, research and publications:

The division is responsible for a large number of inpatient consultations at the JGH and supervises the Diagnostic Microbiology laboratories. Resident and subspecialty fellow teaching are valued aspects of these services.

The walk-in outpatient Infectious Diseases Clinic operates on a daily basis (Monday to Friday) in the mornings (08h00-11h00). The clinic is staffed on rotation by Infectious Diseases specialists (i.e. Dr. Jack Mendelson, Dr. Mark Miller, Dr. David Portnoy, Dr. A. Dascal, Dr. K. Weiss, and Dr. M Teltscher). The clinic also provides teaching to residents who request this clinic as an elective.

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. Matthew Oughton.

In addition to his HIV vaccine related research, Dr. Zaharatos has maintained an active and growing HIV clinical practice. He also continues to be a co-investigator in clinical studies conducted at the JGH by our division.

There were more than 18,500 patient visits in Infectious Diseases Clinic, Tuberculosis and the GFT offices during the past year. Drs. Portnoy, Dascal, Zaharatos, Oughton, Miller, and Greenaway, see patients in their clinical offices. There were over 6,000 in-patient consultations

requested during the year.

Members of the Division continue to perform leading-edge research in the field of *Clostridium difficile* infections (CDI). The most noteworthy of these relate to the new agent Fidaxomicin. The JGH was one of the principal sites that investigated this novel antibiotic for the treatment of CDI – a drug now licensed in the USA and Canada. In addition to co-authoring a New England of Medicine publication in 2011 on Fidaxomicin, Dr. Miller was one of four panel members to address the FDA's "Anti-infective Advisory Board" for the successful submission of Fidaxomicin for licensing in the USA as a new therapy for CDI in 2012. The JGH continues its pivotal participation in trials of other novel antibiotics, *C. difficile* vaccine and anti-toxin monoclonal antibodies as improved therapies for this infection. Dr. Miller was a guest Co-Editor with Dr. Gerding on a supplement of Clinical Infectious Diseases (July 2012) dedicated to Fidaxomicin. The CDI genomics research by Drs. Oughton and Dascal, in collaboration with Institut national de santé publique du Quebec, (INSPQ funded) may lead to a better understanding of the epidemiology of Quebec *C. difficile* strains. This is an extension of their previous work that led to two New England Journal of Medicine articles in 2005 and 2011.

Dr. Zaharatos achieved success as a member of the Botswana Canada AIDS Vaccine Discovery Partnership (BCAVDP), led by Dr. Mark Wainberg of the McGill AIDS Centre and Lady Davis Institute (LDI) and Dr. Rosemary Musonda of the Botswana Harvard Partnership. His participation was key in the BCAVDP receiving a 2.47 million dollar team grant in HIV/AIDS Vaccine Discovery and Social Research, awarded in December of 2011 by the Canadian Institutes of Health Research and the Canadian HIV Vaccine Initiative. The research project was initiated in July 2012 and brings together investigators from Canada, Botswana, the Netherlands and the United States. Dr. Zaharatos is a BCAVDP co-investigator working on HIV-1 envelope immunogenicity and vaccine design. Dr. Zaharatos' interests in HIV in the developing world have recently encompassed a greater appreciation of the issues unique to HIV subtypes that predominate outside North America. Accordingly he has contributed to an important publication with a focus on the consequences of sequence diversity in HIV-1 subtype C in sub-Saharan Africa (Development of Antiretroviral Drug Resistance. Mark A. Wainberg, PhD, Gerasimos J. Zaharatos, M.D., and Bluma G. Brenner, PhD N Engl J Med 2011; 365:637-646.

In International, Refugee and Migrant Health as well as Vaccinology Dr. Greenaway continues her high profile research activities. Dr. Marc Brisson (PI) and Dr. Greenaway (Co-Investigator) received \$532,776 (June 2012-June 2015) from CIHR for their study: "Reducing inequalities in the burden of human papillomavirus (HPV) related diseases in Canada through optimal vaccination and screening policies: A multidisciplinary model-based approach". Dr. Greenaway was also awarded a Jewish General Hospital Dept of Medicine Clinical Research Award of \$ 12,000 to study the "The Burden of Infectious Diseases in New Adult Immigrants and Refugees: Reviewing the Evidence". She presented on vaccine preventable disease at a symposium held during the 2nd North American Refugee Health conference in Rochester, NY in June 2012. Her continued involvement in the International Society of Travel Medicine (ISTM) GeoSentinel Surveillance Network resulted in a key publication: Boggild AK, Castelli F, Gautret P, Torresi J, von Sonnenburg F, Barnett ED, Greenaway C, Lim PL, Schwartz E, Wilder-Smith A, and Wilson ME for the GeoSentinel Surveillance Network. Latitudinal Patterns of Travel among Returned Travelers with Influenza: Results from the GeoSentinel Surveillance Network, 1997-2007. *Journal of Travel Medicine* 2012; Jan-Feb;19(1):4-8.

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

2. Teaching and learning (undergraduate and graduate):

Under the mentorship of Dr. Greenaway Carmine Rossi and Naylah Hamour obtained their MSc in the McGill Department of Epidemiology and Biostatistics. Carmine Rossi was extremely successful and productive. He obtained a 2-year Master’s studentship award from FRSQ (2011-2013), published a paper on his thesis work (PlosOne 2012. “*Seroprevalence of Chronic Hepatitis B Virus Infection and Prior Immunity in Immigrants and Refugees, a systematic review and meta-analysis*”) and has submitted a second manuscript on the “*Cost-Effectiveness of Hepatitis B Screening and Vaccination Strategies among Adult Immigrants*”. In addition Dr. Greenaway supervised Nazila Bettache, a medical resident, on a research project regarding TB Screening in Immigrants. She had one oral and one poster presentations accepted at the American Thoracic Meeting in May 2012.

Dr. Zaharatos has established his laboratory at the Lady Davis Institute and begun mentoring number of individuals in studies related to HIV immunity and vaccinology. Lara Ajamian - Postdoctoral Fellow, Division of Experimental Medicine (August 2012 until present), Luca Melnychuk - Graduate Student, Division of Experimental Medicine (August 2012 until present), Abbesha Nadarajah - Undergraduate Student, Department of Anatomy and Cell Biology, Sean Seltzer - Undergraduate Student, Department of Microbiology and Immunology. Dr. Zaharatos served as an examiner for the Royal College of Physicians in Medical Microbiology

Dr. Miller supervised Dr. Schwartz on a project that describes the “*Epidemiology and management and outcome of Group A strep Necrotizing fasciitis and Myositis*”. Kristin Popiel under the supervision of Dr. Miller evaluated the “*Epidemiology and Change in Incidence of vancomycin Resistant Enterococci after relaxation of Infection Prevention and Control Strategies*”

Drs Miller and Dascal continued their teaching in Unit 7 of the Faculty of Medicine. Dr. Dascal continued lecturing on *C. difficile* and Anthrax in MMIM 465, Dr. Zaharatos thought in MIMM 396/97 as well as EXMD632

All Division members serve as teachers and examiners for medical students, and also serve on various Hospital committees. Residents and fellows are supervised all year round on the ID consultation service and in the ID outpatient clinic.

3. Involvement in the community:

In International, Refugee and Migrant Health the Division is continuing, under Dr. Greenaway’s leadership, its “Multicultural Communication” project in order to increase the understanding of “Infectious Diseases” and “Infection Prevention & Control” among our ethnically and linguistically diverse patient population. A language survey of JGH patients has been conducted

and analyzed, which will be the cornerstone for the introduction in collaboration with the Department of Family Medicine at the JGH of a multicultural resource center to improve the quality of care of our patients with language barriers.

4. Partnerships:

Dr. Miller continued to co-chair the Canadian group which performs annual surveillance for CDI, as part of a joint effort with the Public Health Agency of Canada. His international reputation has resulted in collaborations with numerous academics worldwide and at McGill.

Dr. Zaharatos with the BCAVDP award established partnerships Botswana, Netherlands and other investigators in Canada.

Dr. Greenaway is a member of the Committee to Advise on Tropical Medicine and Travel (CATMAT) an advisory committee to the Public Health Agency of Canada (PHAC) that provides advice on Tropical and Travel Medicine related subjects through producing evidenced based statements on these topics. She has also been involved in many different aspects of the activities of the International Society of Travel Medicine (ISTM) a global organization committed to the promotion of healthy and safe travel with over 3000 members in 80 countries. She is the co-chair of the Scientific program Committee for the ISTM biannual meeting in Maastricht, Netherlands 2013. Dr. Greenaway also collaborates with colleagues (Drs. Kevin Schwartzman and Dick Menzies) at the Montreal Chest Hospital, McGill University on tuberculosis related projects.

Dr. Dascal and Oughton continue their partnerships with the INSPQ on *C. difficile* genomics. Dr. Dascal was the Infectious Disease / Microbiologist consultant to the Montreal Department of Public Health.

5. Milestones: New hires, promotions, and retirements

-Dr. Matthew Oughton, Ivan Brukner and Andre Dascal developed and evaluated a new assay for MRSA that significantly improves upon existing approved commercial assay. Previously they completed similar developments for *C. difficile* and VRE.

-Dr. Jack Mendelson retired in June 2012 after a long and notable career in Infectious Diseases and Microbiology. Dr. Mendelson was a pioneer in Infectious Diseases and Microbiology in Canada and headed the JGH divisions from 1966-1994. He served as the first training program director for Infectious Diseases and Microbiology at McGill until 1987.

-Dr. Mark Miller was promoted to Full Professor at McGill University in 2012. Dr. Miller also accepted the position as Chief Medical Officer and head of the Biomarkers Unit at BioMerieux in Lyons France (75% of his time). He will continue to direct and undertake Infectious Diseases research at the JGH (25% of his time).

-Dr. Timothy Brewer (Associate member Infectious Diseases) has accepted a position at UCLA as Vice-Provost for Interdisciplinary and Cross-Campus Affairs effective January 1 2013. He was an active associate member of the Division until December 15, 2012.

-Dr. Andre Dascal was named as Interim Chief of Infectious diseases and Microbiology at the Jewish general Hospital as of September 1, 2012.

-Dr. Gerasimos Jerry Zaharatos has been appointed as Section Head of Serology and Blood

Borne Virus Diagnostics in Division of Microbiology, JGH.

-Dr. Matthew Oughton and Ivan Brukner PhD are leading the Molecular Microbiology section at the JGH.

-Dr. Greenaway was appointed Section Head of Mycobacteriology, Mycology and Parasitology in Diagnostics in Division of Microbiology, JGH.

-Dr. Portnoy continues to serve the Hospital in the capacity of Director of Professional Services and his dedication has been recognized with a special award.

6. Honours, awards, and prizes: None to report in 2012

7. Fundraising

The planning for the construction of the new JGH Microbiology Laboratories has been initiated with the hope that the project be completed by late 2014. This project has been made possible through the generous donation of Allan Rossy and his family.

SECTION I - DIVISION STATUS UPDATE

1. Mission and objectives of the Division

The objectives of the Division of Infectious Diseases and Microbiology remain:

- high-quality service to the outpatients and inpatients of the Hospital,
- high-quality cost effective performance in diagnostic microbiology services,
- 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,
- developing strategies for improving the health of migrant and refugee populations by optimizing preventive and improved communication strategies

The research priorities of the division are:

- Emerging infections and “super-bugs” (e.g. MRSA, VRE, CRO), especially *Clostridium difficile* infection (CDI)
- HIV immune response and vaccinology
- Refugee and immigrant health
- Vaccine-preventable diseases and new vaccines (i.e. hepatitis B virus, varicella-zoster virus, *human papilloma virus*, *C. difficile* and others)
- Management and prevention of tuberculosis
- Novel antibiotics and immune system modifiers for the treatment of infectious diseases.

2. A nominative list of academic staff, their academic rank

Full-time (GFT) members:

Dr. Andre Dascal (Interim Chief as of September 2012), Associate Professor, Active

Dr. Christina Greenaway, Associate Professor, Active

Dr. Matthew Oughton, Assistant Professor, Active

Dr. Joseph Portnoy, Associate Professor, Active
Dr. G. Zaharatos, Assistant Professor Active
Dr. Mark Miller, Professor, Active
Dr. Jack Mendelson, Professor, Retired July 2012

Part-time (associate) members are as busy as full-time clinicians at other Montreal hospitals, contribute their time and expertise to the JGH for the high-quality clinical care which we give to our patients:

Dr. David Portnoy
Dr. Karl Weiss
Dr. Marty Teltscher
Dr. Donald Vinh
Dr. Timothy Brewer accepted position at UCLA effective Jan 1, 2013. He was an active member until Dec 15, 2012.

Molecular laboratory:

Ivan Brukner PhD - Assistant Professor

Clinical Research Nurse Coordinator of ID Research Unit (IDRU):

Jennifer Eastmond, inf/N., BSc.N.

SECTION II - GRANTS, PUBLICATIONS, AND SERVICE OUTSIDE OF MCGILL

1. Grants and Awards received

Dr. Zaharatos

-Wainberg MA, Musonda R, **Zaharatos GJ**, Scott JK, Pantophet R, Novitsky V, Essex M, Mills E, Lianf C, Brenner B, Bernard N, Sangers R. The Botswana-Canada AIDS Vaccine Discovery Partnership. (CIHR Canada) . 2012- 2015. \$2.47 million CAD over 3 years

-Zaharatos GJ, Miller M, Lipman and observer blinded. Randomized Study Comparing the Safety in Immunogenicity of HEPLISAV™ to Licensed Vaccine (Engerix-B®) Among Adults (18 to 70 Years of Age) with Chronic Kidney Disease (CKD) DV2- HBV-17- (Dynavax). March 2010- February 2012. **(Protocol #10-001)**

Dr. Greenaway

-Brisson M, Boily MC, Deeks S, Coldman A, Franco E, **Greenaway C**, Harper S, Kliwer E, Mayran MH, Ogilvie G, Paszat L, Van de Velde N. “Reducing inequalities in the burden of human papillomavirus (HPV) related diseases in Canada through optimal vaccination and screening policies: A multidisciplinary model-based approach”. (CIHR, Canada) – 2012 – present. \$524,776

-Pottie K, Gagnon A, Mayhew M, Tugwell P, Ahmed R, Chomienne M-H, Dahrouge S, Glazier R, **Greenaway C**, Hogg W, Kendall C, Kirmayer L, Loignon C, Muggah E, Rosengerg E, Welch V, Vissandjee B. “The last Mile Project: Improving the Delivery of Primary Care for Vulnerable Migrants” Meeting, Planning & Dissemination Grant. (CIHR Canada) – 2011-2012 \$24,989

-Greenaway C, Miller M, Oughton M. A Phase 2/3 Randomized, Double-Blind, Placebo Controlled Study of the Safety and Efficacy of Talactoferrin Alfa in Patients with Severe Sepsis (OASIS). August 2011 – April 2012. **(Protocol #11-054)**

- Greenaway C**, Miller M, Zaharatos GJ, Oughton M. A phase I, Open-Label, Multicenter Clinical Trial to Evaluate the Safety and Immunogenicity of V212/Inactivated Varicella-Zoster Virus (VZV) Vaccine in Adults with Hematologic Malignancies Receiving with Anti-CD20 Monoclonal Antibodies- (Merck) April 2012 - November 2012. (**Protocol #12-039**)
- Greenaway C**, Menzies. Understanding the keys to tuberculosis: from exposure to infection and from infection to disease. 2007-present. (**Protocol #07-015**)
- Greenaway C**, “The Burden of Infectious Diseases in New Adult Immigrants and Refugees: Reviewing the Evidence” JGH Department of Medicine GFT-H Clinical Research Awards. PI \$12,000 (June 2012-June 2013)

Dr. Miller

- Miller M**, Leung V, Manges A. Fecal transplantation for treating recurrent *C. difficile* infection. (Investigator-initiated research with own funding). June 2010 – present. (**Protocol # 10-050**)
- Miller M**, Greenaway C, Zaharatos GJ, Oughton M. A phase 2, Randomized, Double-Blind, Placebo-Controlled, Dose Ranging Study TO Assess The Safety And Efficacy of Vp 20621 For Prevention of *C. difficile* infection (CDI) with oral prophylactic administration of non-toxigenic *C. difficile*. (Viropharma Inc.) November 2011 – present. \$100,000 (**Protocol #11-117**)
- Miller M**, Vinh D. Immunogenetic defects in adults with laryngeal papillomatosis. (Investigator-initiated research with own funding). August, 2011 – present. (**Protocol #12-060**)
- Miller M**, Greenaway C, Oughton M, Zaharatos GJ, Gyger. A multi-center, double-blind, randomized, active reference, parallel group study to evaluate the efficacy, safety and tolerability of a 10-day twice daily oral administration of 3 doses of ACT-179811 in subjects with *Clostridium difficile* infection (CDI). (Actelion Pharma Inc.) December 2010- January 2013. \$85,000 (**Protocol #10-156**)
- Loo V, **Miller M**. Household transmission of *C. difficile*. (Joint funding from CHICA-Canada, JGH, MUHC.) January 2010 – present. \$65,000 (**Protocol # McGill A01-M128-09B**)
- Miller M**, Greenaway C, Gerasimos Zaharatos J, Oughton M, Gyger. A Phase III, Double-Blind, Randomized, Placebo-Controlled, Multicenter Clinical Trial Study, Tolerability, Efficacy and Immunogenic of V212 in the Prevention of Shingles in Patients Receiving an Autologous Bone Marrow or Stem Cell Transplant. Merck Inc. (Merck). August 2011 - present. \$75,000(**Protocol #11-051**)
- Miller M**, Greenaway C, Zaharatos GJ, Oughton M. A Study to Appraise the Proposed Surveillance Model for *Clostridium difficile* Infection to be Used in the Sanofi Pasteur Phase 111 Vaccine Efficacy Study CDI16- (Sanofi Pasteur). December 2012- present. (**Protocol 12-144**)
- Miller M**, Greenaway C, Gerasimos Zaharatos J, Oughton M. A Phase 111, Randomized , Double-Blind, Placebo-Controlled, Adaptive Design Study of the Efficacy, Safety and Tolerability of a Single Infusion of MK-3415 (Human Monoclonal Antibody to *Clostridium difficile* toxin A), MK-6072 (Human Monoclonal Antibody to *Clostridium difficile* Toxin B) and MK-3415 (Human Monoclonal Antibody to *Clostridium difficile* Toxin A and B) in Patients Receiving Antibiotic Therapy for *Clostridium difficile* Infections (Modify 1) –(Merck). March 2012- present.(**Protocol # MP- CSSSTR11-017**)

Drs Dascal and Oughton

- Dascal A**, **Oughton M**, Fortin A, Gilca R, Levesque S. Variations génétiques des souches de *C. difficile* du Québec 2005-2010. 2010-2012 INSPQ, 17,000

2. Scholarly works published in 2012 calendar year:

--Cornely OA, **Miller MA**, Louie TJ, et al. Treatment of First Recurrence of Clostridium difficile infection: Fidaxomicin versus Vancomycin. *Clinical Infectious Diseases*, S154-61, 2012;55 (S2).

--Sears P, Crook DW, Louie TJ, **Miller MA**, Weiss K. Fidaxomicin attains high fecal concentrations following oral administration in patients with Clostridium difficile infection. *Clinical Infectious Diseases*, S116-20, 2012;55 (S2).

--Crook DW, Walker AS, Kean Y, et al (**including Miller MA**). Fidaxomicin versus Vancomycin for Clostridium difficile infection: Meta-analysis of pivotal randomized controlled trials. *Clinical Infectious Diseases*, S93-103, 2012;55 (S2).

--Bauer MP, Hensgens MPM, **Miller MA**, et al. Renal failure and leukocytosis are predictors of a complicated course of Clostridium difficile infection if measured on day of diagnosis. *Clinical Infectious Diseases*, S149-53, 2012;55 (S2).

--Nerandzic, MM, Mullane K, **Miller MA**, et al. Reduced acquisition and overgrowth of Vancomycin-resistant Enterococci with Candida species in patients treated with Fidaxomicin versus Vancomycin for Clostridium difficile infection. *Clinical Infectious Diseases*, S121-126, 2012;55 (S2).

--Loo VG, Bourgault AM, **Dascal A**. Clostridium difficile Infection and Colonization. *N Engl J Med* 2012; 366:276-277 January 19, 2012 DOI: 10.1056/NEJMc1113861 Correspondence Re: Loo VG, Bourgault AM, Poirier L, Lamothe F, Michaud S, Turgeon N, Toye B, Beaudoin A, Frost EH, Gilca R, Brassard P, Dendukuri N, Béliveau C, **Oughton M**, Brukner I, **Dascal A**. Host and pathogen factors for Clostridium difficile infection and colonization. *N Engl J Med*. 2011 Nov 3;365(18):1693-703. PMID: 22047560

--Beaulieu M, Otis J, Blais M, Godin G, Cox J, Côté J, Alary M MD, Rouleau D, Beck E, Côté P, **Dascal A**, Fréchette M, Gaul N, Gélinas J, Lalonde R, Lapointe N, Lavoie R, Leblanc R, Machouf N, Pelletier R, Toma E, Trottier B, Vincelette J & Zunzunegui MV, A Model of Quality of Life of Women Living With HIV. *Journal of HIV/AIDS & Social Services* Volume 11, Issue 3, 17 Aug 2012 Preview View [Download full text](#). DOI: 10.1080/15381501.2012.703559

--**Zaharatos GJ**, Wainberg MA, Update on rilpivirine: A new potent non-nucleoside reverse transcriptase inhibitor (NNRTI) of HIV replication. *Ann Med*. 2012 Nov 17. [Epub ahead of print]

--Afilalo M, Stern E, **Oughton M**. Evaluation and management of seasonal influenza in the emergency department. *Emerg Med Clin North Am*. 2012 May;30(2):271-305, viii. doi: 10.1016/j.emc.2011.10.011.

--Boggild AK, Castelli F, Gautret P, Torresi J, von Sonnenburg F, Barnett ED, **Greenaway C**, Lim PL, Schwartz E, Wilder-Smith A, and Wilson ME for the GeoSentinel Surveillance Network. Latitudinal Patterns of Travel among Returned Travelers with Influenza: Results from the GeoSentinel Surveillance Network, 1997—2007. *Journal of Travel Medicine* 2012: Jan-Feb;19(1):4-8.

--Rossi C, Shrier I, Marshall L, Cnossen S, Schwartzman K, Klein MB, Schwarzer G, **Greenaway C**. Seroprevalence of chronic hepatitis B virus infection and prior immunity in immigrants and refugees: a systematic review and meta-analysis. *PLoS One*. 2012;7(9):e44611. doi: 10.1371/journal.pone.0044611. Epub 2012 Sep 5.

Book Chapters, Special Publications

--Gerding DN, **Miller MA** – Guest Editors – Clinical Infectious Diseases, Supplement 2, July 2012. Fidaxomicin and the evolving approach to the treatment of Clostridium difficile infection.

--Matthew T. **Oughton**, MD, FRCPC, Andre **Dascal**, MD, FRCPC, Acute Infectious Diarrhea, Bope & Kellerman: Conn's Current Therapy 2012, p 526-532 Elsevier Saunders Philadelphia ISBN-10: 1455707384 | ISBN-13: 978-1455707386

3. Academic and community engagement service outside of McGill by individual members of the unit

Dr. Miller continued to co-chair the Canadian group which performs annual surveillance for CDI, as part of a joint effort with the Public Health Agency of Canada. His international reputation has resulted in collaborations with other academics worldwide.

Dr. Zaharatos with the BCAVDP award established partnerships Botswana, Netherlands and other investigators in Canada.

Dr. Greenaway is a member of the Committee to Advise on Tropical Medicine and Travel (CATMAT) an advisory committee to the Public Health Agency of Canada (PHAC) that provides advice on Tropical and Travel Medicine related subjects through producing evidenced based statements on these topics (since 2002).

She has been involved in many different aspects of the activities of the International Society of Travel Medicine (ISTM) a global organization committed to the promotion of healthy and safe travel with over 3000 members in 80 countries. I am the co-chair of the Scientific program Committee for the ISTM biannual meeting in Maastricht, Netherlands 2013.

Dr. Dascal and Oughton continue their partnerships with the INSPQ on C. difficile genomics. Dr. Dascal was the Infectious Disease / Microbiologist consultant to the Montreal Department of Public Health.

SECTION III - CONFIDENTIAL INFORMATION

1. Consulting activities:

Dr. Miller accepted the position as Chief Medical Officer and head of the Biomarkers Unit at BioMerieux in Lyons, France, as of Oct 1, 2012 (75% of his time) , one of the leading medical diagnostic companies in the world. He will continue to direct and undertake Infectious Diseases research at the JGH (25%); as such, he will reside in both Canada and France to balance his BioMerieux and JGH research activities.

Respectfully submitted

Andre Dascal, MD, FRCPC, FIDSA
Interim Chief, Division of Infectious Diseases and Diagnostic Microbiology