



DSM Clinical Microbiology Discipline Researchers



Dr. Heather Adam

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Dr. Adam is a principle editorial board member of the Canadian Antimicrobial Resistance Alliance (CARA). Accordingly, she is involved in the surveillance of antimicrobial resistant pathogens across Canada. Heather is particularly interested in the epidemiology of *Streptococcus pneumoniae* in Canada as well as antibiotic resistant organisms with infection control implications such as MRSA and hVISA/VISA/VRSA.

Recent Publications

1. Karlowsky JA, PRS Lagacé-Wiens, P Simner, MR DeCorby, **HJ Adam**, A Walkty, DJ Hoban, GG Zhanel. Antimicrobial Resistance in Urinary Tract Pathogens in Canada from 2007 to 2009: CANWARD Surveillance Study. 2011. *Antimicrob. Agents Chemother.* 55:3169-3175.
2. Karlowsky JA, **HJ Adam**, MR DeCorby, PRS Lagacé-Wiens, DJ Hoban, GG Zhanel. In vitro Activity of Ceftaroline against Gram-positive and Gram-negative Pathogens Isolated from Patients Attending Canadian Hospitals in 2009. 2011. *Antimicrob. Agents Chemother.* 55:2837-2846.
3. GG Zhanel, **HJ Adam**, DE Low, J Blondeau, M DeCorby, JA Karlowsky, B Weshnowski, R Vashisht, A Wierzbowski, DJ Hoban, the Canadian Antimicrobial Resistance Alliance. Antimicrobial susceptibility of 15 644 pathogens from Canadian hospitals: results of the CANWARD 2007-2009 study. 2011. *Diagn. Microbiol. Infect. Dis.* 69:291-306.
4. **HJ Adam**, M DeCorby, R Rennie, JA Karlowsky, DJ Hoban, GG Zhanel, the Canadian Antimicrobial Resistance Alliance. Prevalence of antimicrobial resistant pathogens from blood cultures from Canadian hospitals: results of the CANWARD 2007-2009 study. 2011. *Diagn. Microbiol. Infect. Dis.* 69:307-313.
5. Nichol KA, **HJ Adam**, Z Hussain, MR Mulvey, M McCracken, LF Mataseje, K Thompson, S Kost, PRS Lagace-Wiens, DJ Hoban, GG Zhanel, the Canadian Antimicrobial Resistance Alliance. Comparison of community-associated and health care-associated methicillin-resistant *Staphylococcus aureus* in Canada: results of the CANWARD 2007-2009 study. 2011. *Diagn. Microbiol. Infect. Dis.* 69:320-325.



Dr. Michelle Alfa

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Current research focuses on nosocomial infection transmission issues and involves studies related to; 1) the pathogenesis of *Clostridium difficile* and role of spores in the environment on nosocomial spread of this organism and 2) the role of biofilm and cleaning adequacy in infection transmission associated with complex medical devices.

Recent Publications

1. **Alfa, MJ**, Sepehri, S, Olson, N, Wald, A. Establishing a clinically relevant bioburden benchmark: A quality indicator for adequate reprocessing and storage of flexible gastrointestinal endoscopes. *Am J Infect Control.* 2011 Jun [Epub ahead of print].
2. Visser M, Shadi Sepehri, Olson N, T Du, M Mulvey, **M Alfa**. Detection of *Clostridium difficile* in retail ground meat products in Manitoba, Canada. *Canadian J Infect Dis. Med Microbiol* 2011 (in press).
3. **Alfa, MJ**, Evelyn Lo, Alana Wald, Christine Dueck, Pat DeGagne, Godfrey KM Harding. Improved eradication of *Clostridium difficile* spores from toilets of hospitalized patients using an accelerated hydrogen peroxide as the cleaning agent. *BMC Infectious Diseases* 2010 Sep 15;10:268.
4. **Alfa MJ**, Howie R. Modeling microbial survival in buildup biofilm for complex medical devices. *BMC Infect Dis.* 2009 May 8; 9:56.
5. Murray R, Boyd D, Mulvey MR, Levett PN, **Alfa MJ**. Truncation in the *tcdC* region of the *Clostridium difficile* PathLoc of clinical isolates does not predict increased biological activity of Toxin B or Toxin A. *BMC Infect Dis.* 2009 June 28;9(1)103.



Dr. Daryl Hoban:

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Current research interests include: molecular diagnostics, molecular basis of antimicrobial resistance, and the epidemiology of resistance in community and hospital acquired pathogens.

Recent Publications

1. Zhanel GG, Rossnagel E, Nichol K, Cox L, Karlowsky JA, Zelenitsky S, Noreddin AM, **Hoban DJ**. Ceftaroline pharmacodynamics activity versus community-associated and healthcare-associated methicillin-resistant *Staphylococcus aureus*, heteroresistant vancomycin-intermediate *S. aureus*, vancomycin-intermediate *S. aureus* and vancomycin-resistant *S. aureus* using an in vitro model. *Journal of Antimicrobial Chemotherapy*, 2011;66:1301-1305.
2. Zhanel GG, Adam HJ, Low DE, Blondeau J, DeCorby M, Karlowsky JA, Weshnoweski B, Vashisht R, Wierzbowski A, **Hoban DJ**, the Canadian Antimicrobial Resistance Alliance. Antimicrobial susceptibility of 15,644 pathogens from Canadian hospitals: results of the CANWARD 2007-2009 study. *Diagnostic Microbiology and Infectious Disease*, 2011;69:291-306.
3. Simner PJ, Zhanel GG, Pitout J, Taylor F, McCracken M, Mulvey MR, Lagacé-Wiens, Adam HJ, **Hoban DJ**, the Canadian Antimicrobial Resistance Alliance. Prevalence and characterization of extended-spectrum β -lactamase- and AmpC β -lactamase-producing *Escherichia coli*: results of the CANWARD 2007-2009 study. *Diagnostic Microbiology and Infectious Disease*, 2011;69:326-334.
4. **Hoban DJ**, Nicolle LE, Hawser S, Bouchillon S, Badal R. Antimicrobial susceptibility of global inpatient urinary tract isolates of *Escherichia coli*: results from the Study for Monitoring Antimicrobial Resistance Trends (SMART) program: 2009-2010. *Diagnostic Microbiology and Infectious Disease*, 2011;70:507-511.
5. Walkty A, DeCorby M, Lagacé-Wiens PRS, Karlowsky JA, **Hoban DJ**, Zhanel GG. In vitro Activity of Ceftazidime Combined with NXL104 versus *Pseudomonas aeruginosa* Isolates Obtained from Patients in Canadian Hospitals: CANWARD 2009. *Antimicrobial Agents and Chemotherapy*, 2011;55(6):2992-2994.



Dr. James Karlowsky:

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Current research interests include antimicrobial susceptibility testing and bacterial/fungal identification methods.

Recent Publications

1. **Karlowsky JA**, Lagacé-Wiens PRS, Simner PJ, DeCorby MR, Adam HA, Walkty A, Hoban DJ, Zhanel GG. Antimicrobial resistance in urinary tract pathogens in Canada from 2007 to 2009: CANWARD surveillance study. *Antimicrobial Agents and Chemotherapy*, 2011;55(7):3169-3175.
2. **Karlowsky JA**, Adam HA, DeCorby MR, Lagacé-Wiens PRS, Hoban DJ, Zhanel GG. In vitro activity of ceftaroline against gram-positive and gram-negative pathogens isolated from patients in Canadian hospitals in 2009. *Antimicrobial Agents and Chemotherapy*, 2011;55(6):2837-2846.
3. **Karlowsky JA**, Adam HJ, Poutanen SM, Hoban DJ, Zhanel GG. In vitro activity of dalbavancin and telavancin against staphylococci and streptococci isolated from patients in Canadian hospitals: results of the CANWARD 2007-2009 study. *Diagnostic Microbiology and Infectious Disease*, 2011;69(3):342-347.
4. **Karlowsky JA**, Kaplan N, Hafkin B, Hoban DJ, Zhanel GG. AFN-1252, a FabI inhibitor, demonstrates a *Staphylococcus*-specific spectrum of activity. *Antimicrobial Agents and Chemotherapy*, 2009;53(8):3544-3548.
5. **Karlowsky JA**, Lagacé-Wiens PRS, Low DE, Zhanel GG. Annual macrolide prescription rates and the emergence of macrolide resistance among *Streptococcus pneumoniae* in Canada from 1995 to 2005. *International Journal of Antimicrobial Agents*, 2009;34(4):375-379.



Dr. Philippe Lagacé-Wiens:

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Current research interests are in antimicrobial resistance, with a focus on gram-negative organisms and global public health, specifically the impact of resistance on developing countries. Other interests include travel and tropical medicine and parasitology.

Recent Publications

1. Karlowsky JA, **Lagacé-Wiens PR**, Simner PJ, Decorby MR, Adam HJ, Walkty A, Hoban DJ, Zhanel GG. Antimicrobial Resistance in Urinary Tract Pathogens in Canada from 2007 to 2009: CANWARD Surveillance Study. *Antimicrob Agents Chemother.* 2011 Jul;55(7):3169-75.
2. Walkty A, DeCorby M, **Lagacé-Wiens PRS**, Karlowsky JA, Hoban DJ, Zhanel GG. In Vitro Activity of Ceftazidime Combined with NXL-104 versus *Pseudomonas aeruginosa* Isolates Obtained from Patients in Canadian Hospitals: CANWARD 2009. *Antimicrob Agents Chemother.* 2011 Jun;55(6):2992-4.
3. **Lagacé-Wiens PRS**, Tailor F, Simner P, DeCorby M, Karlowsky JA, Walkty A, Hoban DJ, Zhanel GG. Activity of NXL104 in Combination with Beta-Lactams Against Genetically Characterized Class A ESBL and Class C β -lactamase-Producing *Escherichia coli* and *Klebsiella pneumoniae*. *Antimicrob Agents Chemother.* 2011 May;55(5):2434-7.
4. Simner PJ, Zhanel GG, Pitout J, Tailor F, McCracken M, Mulvey MR, **Lagacé-Wiens PR**, Adam HJ, Hoban DJ; Canadian Antimicrobial Resistance Alliance (CARA). Prevalence and characterization of extended-spectrum β -lactamase- and AmpC β -lactamase-producing *Escherichia coli*: results of the CANWARD 2007-2009 study. *Diagn Microbiol Infect Dis.* 2011 Mar;69(3):326-34.
5. **Lagacé-Wiens P**. Neutrophilic Inclusions in a Hunter. *Clin Infect Dis.* 2010. Nov; 51(9):1073, 1102-03. Lagacé-Wiens PR, Simner PJ, Forward KR, Tailor F, Adam HJ, Decorby M, Karlowsky J, Hoban DJ, Zhanel GG; Canadian Antimicrobial Resistance Alliance (CARA). Analysis of 3789 in- and outpatient *Escherichia coli* isolates from across Canada--results of the CANWARD 2007-2009 study. *Diagn Microbiol Infect Dis.* 2011 Mar;69(3):314-9. Tailor F, Lagacé-Wiens P, Simner PJ, Adam H, Karlowsky JA, Denisuik A, Hoban DJ, Zhanel GG. Activity of Avibactam (NXL-104) in Combination with β -Lactams Against Molecularly Characterized AmpC- and ESBL-Producing *Escherichia coli* and *Klebsiella pneumoniae* from CANWARD 2007-2010. Presented at the 51st ICAAC Annual Meeting in Chicago, IL, September 17-20, 2011.



Dr. Kanchana Manickam

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Current research interests include; R&D for rapid diagnosis in the Microbiology lab, especially in the Mycobacteriology section.

Recent Publications

1. Kadkhoda K, **Manickam K**, DeGagne P, Sokolowsky P, Pang P, Kontzie N, Alfa M. UF-1000iTM flow cytometry is an effective screening method for urine specimens. *Diagn Microbiol Infect Dis* 2011;69: 130-136
2. Larios OE, Bernard KA, Manickam K, Ng B, Alfa M, Ronald A. First report of *Actinobaculum schaalii* urinary tract infection in North America. *Diagn Microbiol Infect Dis* 2010; 67:282-285.
3. Walkty A, Lo E, **Manickam K**, Alfa M, Xiao L, Waites K. *Ureaplasma parvum* as a cause of sternal wound infection. *J Clin Microbiol.* 2009;47: 1976-1978.
4. Haleis A Alfa M, Gottschalk M, Bernard K, Ronald A, **Manickam K**. Meningitis Caused by *Streptococcus suis* Serotype 14, North America. *Emerg Infect Dis* 2009; 15: 350-352.
4. Lagacé-Wiens P, Alfa MJ, **Manickam K**, and Harding GKM. Reduction in Workload and Reporting Time by Use of Methicillin-Resistant *Staphylococcus aureus* Screening with MRSA>Select Medium Compared to Mannitol-Salt Medium Supplemented with Oxacillin. *J. Clin. Microbiol.* 2008; 46: 1174-1177
4. Lagacé-Wiens P, Alfa MJ, **Manickam K**, Karlowsky JA. Thermostable DNase is superior to Tube Coagulase for Direct Detection of *Staphylococcus aureus* in positive blood cultures. *J Clin Microbiol* 2007; 45: 3478-3479.



Kim Nichol

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Kim is an active member of the Canadian Antibiotic Resistance Alliance (CARA). Her current research interest is in the development and application of molecular diagnostics for the rapid detection and identification of pathogens. Current research projects include the comparison of community-associated and healthcare-associated methicillin-resistant *Staphylococcus aureus* (MRSA) in Canada.

Recent Publications:

1. **Nichol KA**, HJ Adam, Z Hussain, MR Mulvey, M McCracken, LF Mataseje, K Thompson, S Kost, PR Lagacé-Wiens, DJ Hoban, GG Zhanel GG; The Canadian Antimicrobial Resistance Alliance (CARA). Comparison of community-associated and health care-associated methicillin-resistant *Staphylococcus aureus* in Canada: results of the CANWARD 2007-2009 study. 2011. *Diagn. Microbiol. Infect. Dis.* 69:320-325.
2. Zhanel GG, M Decorby, H Adam, MR Mulvey, M McCracken, P Lagacé-Wiens, **KA Nichol**, A Wierzbowski, PJ Baudry, F Tailor, JA Karlowsky, A Walkty, F Schweizer, J Johnson, the Canadian Antimicrobial Resistance Alliance (CARA), DJ Hoban. Prevalence of antimicrobial-resistant pathogens in Canadian hospitals: results of the Canadian Ward Surveillance Study (CANWARD 2008). 2010. *Antimicrob. Agents Chemother.* 54:4684-4693.
3. **Nichol KA**, M McCracken, MR DeCorby, K Thompson, MR Mulvey, JA Karlowsky, DJ Hoban, GG Zhanel. Comparison of community-associated and health care-associated methicillin-resistant *Staphylococcus aureus* in Canada: results from CANWARD 2007. 2009. *Can. J. Infect. Dis. Med. Microbiol.* 20(Suppl.):31A-36A.
4. **Nichol KA**, HJ Adam, JA Karlowsky, GG Zhanel, DJ Hoban. Increasing genetic relatedness of ciprofloxacin-resistant *Streptococcus pneumoniae* isolated in Canada from 1997 to 2005. 2008. *Antimicrob. Agents Chemother.* 52:1190-1194.

Dr. Peter Pieroni

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Research interests include: point of care testing and rapid molecular diagnostics in microbiology, epidemiological surveillance and microbial resistance in urinary and gastro intestinal infections.

Recent Publications

1. Vergis, A. S., D. Thomson, **P. Pieroni**, and S. Dhalla. Reprocessing flexible gastrointestinal endoscopes after a period of disuse: is it necessary? *Endoscopy.* 39: 737 – 739. 2007.
2. Czarnecki, Andrew., G.H. f. Ong, **P. Pieroni**, E. Trepman, J.M. Embil, and L. Hurley. Gemella morbillorum septic arthritis of the knee and infective endocarditis. *Am. J. Orthop.* 2007; 36(1): E7-E9.
3. E. Chan, N. Antonishyn, R. McDonald, T. Maksymiw, **P. Pieroni**, E. Nagle, and G. B. Horsman. The use of TaqMan PCR assay for detection of *Bordetella pertussis* infection from clinical specimens. *Arch. Pathol. Lab Med.* 2002. Feb; 126(2): 173-6.
4. **Pieroni, P.**, Caroline Mills, Colin Ohrt, Mary Anne Harrington, and Kevin C. Kain. A blinded evaluation of ParaSight[®] F and the ICT[®] malaria P.f. tests with PCR for the diagnosis of *Plasmodium falciparum* malaria in travellers. *Transactions of the Royal Society of Tropical Medicine and Hygiene* 92: 166- 169, 1998.
5. **Pieroni, P.**, J. Goodfellow, L. Reesor, M. Louie, and A. E. Simor. Antimicrobial susceptibility of blood culture isolates obtained before and after the introduction of ciprofloxacin. *J. Antimicrobial Chemotherapy* 39: 419 – 422, 1997.



Dr. Andrew Walkty

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Current research interests include: Antimicrobial resistance, including antimicrobial susceptibility and mechanisms of resistance.

Recent Publications

1. Karlowsky JA, Lagace-Wiens PR, Simner PJ, DeCorby MR, Adam HJ, **Walkty A**, Hoban DJ, Zhanel GG. Antimicrobial resistance in urinary tract pathogens in Canada from 2007 to 2009: CANWARD. *Antimicrob Agents Chemother* 2011;55:3169-75.
2. **Walkty A**, DeCorby M, Lagace-Wiens PR, Karlowsky JA, Hoban DJ, Zhanel GG. In vitro activity of ceftazidime combined with NXL104 versus *Pseudomonas aeruginosa* isolates obtained from patients in Canadian hospitals (CANWARD 2009 Study). *Antimicrob Agents Chemother* 2011;55:2992-4.
3. **Walkty A**, Adam HJ, Laverdiere M, Karlowsky JA, Hoban DJ, Zhanel GG; Canadian Antimicrobial Resistance Alliance (CARA). In vitro activity of ceftobiprole against frequently encountered aerobic and facultative Gram-positive and Gram-negative bacterial pathogens: results of the CANWARD 2007-2009 study. *Diagn Microbiol Infect Dis* 2011;69:348-55.
4. Fanella S, **Walkty A**, Bridger N, Crockett M, Consuji-Araneta, Embree J, Karlowsky J. Gastric lavage for the diagnosis of blastomycosis in pediatric patients. *Pediatr Infect Dis J* 2010;29:1146-8.
5. **Walkty A**, Boyd DA, Gravel D, et al. Molecular characterization of moxifloxacin resistance from Canadian *Clostridium difficile* isolates. *Diagn Microbiol Infect Dis* 2010;66:419-24.