

CURRICULUM VITAE

I. BIOGRAPHICAL DATA

Karen L. Tang
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Assistant Professor
Department of Medicine
University of Calgary

Clinical Lecturer
Division of General Internal Medicine
Department of Medicine
University of Calgary

II. ACADEMIC RECORD

2004- 2008 Doctor of Medicine
University of Alberta, Edmonton, Canada

i. Undergraduate

2002- 2007 Bachelor of Medical Science
University of Alberta, Edmonton, Canada

ii. Special Professional

2008- 2011 Internal Medicine Residency
University of Alberta, Edmonton, Canada

2011- 2013 General Internal Medicine Subspecialty Residency
University of Calgary, Canada

iii. Graduate and Post-Doctoral

2013-2017 Master of Science
Convocation June 2017
Health Services Research Specialization
Department of Community Health Sciences
University of Calgary, Canada

2013-2017 Post-Doctoral Fellowship
Department of Medicine
University of Calgary, Canada

iv. **Licensure**

2013 General Register—Specialist Physician, Internal Medicine
College of Physicians and Surgeons of Alberta

2012 Fellow of the Royal College of Physicians and Surgeons of
Canada

2009 Licentiate of the Medical Council of Canada

III. **AWARDS AND DISTINCTIONS**

2017 Governor General’s Gold Medal

2014-2017 Canadian Institutes of Health Research Fellowship

2014-2017 Alberta Innovates- Health Solutions Clinician Fellowship

2013-2017 Supported by John A. Buchanan Chair in General Internal
Medicine

2014 Alberta Graduate Student Scholarship

2008 Percy H. Sprague Prize in Medicine

2008 The Dr. Frank Elliot Memorial Scholarship

2008 The Dr. Charles T. Fried Award in Paediatrics

2003 Louise McKinney Post-Secondary Scholarship

2003 The Birks Family Foundation Undergraduate Scholarship

2003 Alberta Heritage Foundation for Medical Research Summer
Studentship Scholarship

2002 Ivy and William Thomson Academic Excellence Scholarship

2002 Carlson Academic Excellence Faculty of Science Scholarship

2002 Rutherford Scholars Award

IV. ACADEMIC APPOINTMENTS

- 2018-Present Assistant Professor
Division of General Internal Medicine
Department of Medicine
University of Calgary
- 2013-2017 Clinical Lecturer
Division of General Internal Medicine
Department of Medicine
University of Calgary

V. EDUCATIONAL ACTIVITIES

i. Undergraduate

- 2011-2012;
2015- 2016 **Physical Exam Course Preceptor**
Cumming School of Medicine, University of Calgary
Taught first year medical students bedside physical exam skills using standardized patients.
- 2013 **Global Health Elective Preceptor**
Cumming School of Medicine, University of Calgary
Taught pre and post-departure training to first year students going on international electives. Brought medical students to Lao PDR for an international elective and coordinated their clinical exposures with local physicians in Lao PDR.
- 2012 **Examiner for Internal Medicine OSCE**
Cumming School of Medicine, University of Calgary
Examined for the internal medicine OSCE for third year medical students.

ii. Graduate

- 2015- 2016 **MDCH 741: Systematic Reviews & Meta-analysis**
Teaching Assistant
Cumming School of Medicine, Department of Community Health Sciences, University of Calgary

Acted as a co-preceptor, provided methodological support, provided feedback on research protocols and final manuscripts, and graded assignments for students in this graduate course.

iii. Postgraduate

- 2016-Present **Co-director of the Health of Vulnerable Populations Elective**
Cumming School of Medicine, Department of Medicine, University of Calgary
This elective is offered through the Internal Medicine Residency Program, to provide ambulatory clinics and other clinical exposures focused on the social determinants of health and care for vulnerable populations. I, along with Dr. Gabriel Fabreau, have designed and revised this elective, and also meet with and evaluate each student participating in this elective.
- 2016-Present **Mentor, Internal Medicine Residency Mentorship Program**
Cumming School of Medicine, Department of Medicine, University of Calgary
I was invited to be a mentor for the internal medicine mentorship program. I meet with a small group of internal medicine residents (one resident each from years 1-4) both formally and informally throughout the academic year. We discuss their experiences, successes, and challenges during training, professional development, well-being, and career trajectories.
- 2016-Present **Co-supervisor for Luke Ranelli**
Cumming School of Medicine, Department of Medicine, University of Calgary
General internal medicine fellow working with Dr. G. Fabreau and me to revise and evaluate the Health of Vulnerable Populations Elective.
- 2015-Present **Co-supervisor for Anshula Ambasta**
Cumming School of Medicine, Department of Medicine, University of Calgary
General internal medicine fellow completing research projects on discharge against medical advice in medical inpatients.
- 2011- Present **Lao Improving Rural Health Initiative**
Collaboration between University of Calgary, Canada and University Health Sciences, Lao PDR
I work with Lao physicians to improve the quality of the Lao family medicine residency program by engaging in faculty development, helping to organize Continuing Medication Education Conferences, conducting workshops in provincial and small district hospitals, and teaching Lao trainees.

2015 **Co-supervisor for Leonie Tesorero**
Research summer student and recipient of Alberta
Innovates—Health Solutions summer studentship

VI. ADMINISTRATIVE RESPONSIBILITIES

- 2015-2016 **Alberta Urban Health Research Forum Planning Committee**
Chair, Cumming School of Medicine, University of Calgary
As a recipient of a Campus Alberta Health Outcomes and Public Health meeting grant, I was the chair of the planning committee for the pan-provincial meeting held in April 2016. The goal of this forum was to cultivate partnerships across academic, social, community, and health sectors to improve health and health care access for vulnerable populations. Nearly 200 individuals from Edmonton and Calgary, from community agencies, universities, and Alberta Health Services attended this meeting.
- 2012-2014 **Rocky Mountain/ ACP Internal Medicine Conference Report Review Committee**
Cumming School of Medicine, University of Calgary
As a committee formed to review conference presentations and workshops at the annual Rocky Mountain/ American College of Physicians Internal Medicine Conference, we determined topics and presentations of highest relevance and priority. At the conference, we attended these high priority presentations, writing a commentary on the main take-home messages, the evidence and controversies surrounding the topic, and clinical relevance of the presented material for each presentation. These were then published in conference reports annually.
- 2012-2013 **General Internal Medicine Residency Training Committee**
Cumming School of Medicine, University of Calgary
As a member of the residency training committee throughout my general internal medicine subspecialty residency training, I provided feedback and contributed to changes regarding the curriculum, clinical experience, and professional training of this subspecialty training program.
- 2012-2013 **Selection Committee for General Internal Medicine Subspecialty Residency Program**
Cumming School of Medicine, University of Calgary
I reviewed the files, interviewed applicants, scored all applications, and provided a ranking of the applicants for admission into the University of Calgary General Internal Medicine Subspecialty Residency Program.
- 2010-2011 **Interview Committee for Internal Medicine Residency Program**
Faculty of Medicine, University of Alberta

I interviewed applicants for admission into the University of Alberta Internal Medicine Residency Program.

VII. PROFESSIONAL ACTIVITIES

i. Membership in professional and learned societies

2016-Present	Canadian Society of Internal Medicine
2014-Present	Society of General Internal Medicine
2012-Present	Fellow of the Royal College of Physicians and Surgeons of Canada
2009-Present	Medical Council of Canada
2008-Present	College of Physicians and Surgeons of Alberta
2008-Present	Canadian Medical Protection Association
2004-Present	Canadian Medical Association
2004-Present	Alberta Medical Association

ii. Professional service

Internal Peer Reviewer for Grant and Award Applications

2016	Canadian Institutes of Health Research Project Scheme Competition Invited to act as a University of Calgary, Department of Community Health Sciences internal peer reviewer for grant applications to the CIHR Project Scheme Spring 2016 and Fall 2016 competitions
2015- Present	Alberta Innovates – Health Solutions Graduate Studentship Competition Invited to act as a University of Calgary, Department of Community Health Sciences internal peer reviewer for graduate studentship applications

Journal Review

BMJ Open

Circulation
 International Journal of Health Policy and Management
 The American Journal of Managed Care

Professional Service to the Community

2015- 2016 **Physician Volunteer for Calgary Flames Health Training Camp**
 Provided consultations to the general public regarding cardiovascular risk assessments and both primary and secondary cardiovascular disease prevention

VIII. RESEARCH SUPPORT

Dates	Source	Total (\$)	Role	Other Investigators	Title
2016-2018	Canadian Institutes of Health Research	285,000	Co-I ^a	William Ghali (PI), Richard Musto, Braden Manns, Maria Santana, Jenny Godley, Nick Falvo, Doreen Rabi, Eddy Lang, Tolulope Sajobi, Van Nguyen	Social determinants of post-discharge readmissions, emergency department visits, and mortality in medical inpatients
2016-2019	Alberta Innovates – Health Solutions	1,800,000	Collaborator	Gabriel Fabreau (PI), Kerry McBrien, Van Nguyen, Eddy Lang	Coordinated care team for vulnerable patients with complex care needs
2015-2016	Campus Alberta Health Outcomes and Public Health Meeting Grant	5,000	Co-PI	Gabriel Fabreau, Kerry McBrien, Van Nguyen, Nick Falvo (all co-PIs)	Addressing social vulnerabilities in urban Alberta

Dates	Source	Total (\$)	Role	Other Investigators	Title
2015-2016	University of Calgary Bridge Funding, awarded for a strong ranking in Canadian Institutes of Health Research Transitional Open Operating Grant Program competition	40,000	Co-PI	William Ghali (co-PI)	Social determinants of post-discharge readmissions, emergency department visits, and mortality in medical inpatients
2015-2016	O'Brien Institute for Public Health, University of Calgary, Catalyst Funding	15,000	Co-PI	Hude Quan (co-PI)	Barriers to high quality coding of hospital chart information to administrative data: A qualitative study

Where PI = Principal investigator, Co-PI = Co-Principal investigator, Co-I = Co-investigator
^aDue to restrictions in the grant application process, as a research trainee, I could not be listed as the co-PI on this grant though I had the responsibilities of a co-PI in this work; therefore Dr. William Ghali was the nominated PI. I led the pilot study that led to this grant being funded, led the grant application and writing process, and led the coordination of the ten co-investigators on the team.

IX. PRESENTATIONS

Conference abstract presentations

- Aug 2016 Tang KL, Lucyk K, Quan H. Barriers to high quality coding of hospital chart information to administrative data: A qualitative study. Poster Presentation by H. Quan. International Population Data Linkage Conference. Swansea, Wales.
- Aug 2016 Tang KL, Lucyk K, Quan H. Canadian data sources on ethnic classifications. Rapid Fire Presentation by H. Quan. International Population Data Linkage Conference. Swansea, Wales.
- Aug 2016 Tang KL, Quan H, Rabi DM. Assessment of operational definitions for medication adherence using long-term outcomes in patients with hypertension. Oral Presentation by Dr. H. Quan. International Population Data Linkage Conference. Swansea, Wales.
- May 2016 Tang KL, Lucyk K, Quan H. Barriers to high quality coding of hospital chart information to administrative data: A qualitative study. Poster

- Presentation. Society of General Internal Medicine Annual Meeting. Hollywood, Florida.
- May 2016 Tang KL, Lucyk K, Quan H. Canadian data sources on ethnic classifications. Poster Presentation. Society of General Internal Medicine Annual Meeting. Hollywood, Florida.
- May 2016 Lucyk K, Tang KL, Quan H. The historical development of heterogeneity in measuring ethnicity and their implications for health: Findings from the Canadian census, 1871-Present. Poster Presentation. Society of General Internal Medicine Annual Meeting. Hollywood, Florida.
- May 2016 Tang KL, Lucyk K, Quan H. Barriers to high quality coding of hospital chart information to administrative data: A qualitative study. Oral Presentation by K. Lucyk. Canadian Association for Health Services and Policy Research Conference. Toronto, ON.
- May 2016 Tang KL, Lucyk K, Quan H. Canadian data sources on ethnic classifications. Poster Presentation by K. Lucyk. Canadian Association for Health Services and Policy Research Conference. Toronto, ON
- Mar 2016 Stokes WB, Fenton C, Clement F, Tang KL. 12 weeks of Sofosbuvir-Ledipasvir versus Sofosbuvir-Ledipasvir-Ribavirin in Chronic Hepatitis C, genotype 1: A Systematic Review and Meta-Analysis. Poster Presentation by W. Stokes. Canadian Association for Clinical Microbiology and Infectious Diseases – Association of Medical Microbiology and Infectious Diseases (CACMID – AMMI) Canada Annual Conference. Vancouver, BC.
- Oct 2015 Tang KL, Lucyk K, Quan H. Barriers to high quality coding of hospital chart information to administrative data: An upcoming qualitative study. Poster Presentation by H. Quan. World Health Organization- Family of International Classifications (WHO-FIC) Annual Meeting. Manchester, UK.
- April 2015 Tang KL, Quan H, Rabi DM. Assessment of operational definitions for medication adherence using long-term outcomes in patients with hypertension. Poster Presentation. Society of General Internal Medicine Annual Meeting. Toronto, ON.
- April 2015 Tang KL, Rashid R, Godley J, Ghali WA. Association between subjective social status and cardiovascular disease and cardiovascular risk factors: A systematic review and meta-analysis. Poster Presentation. Society of General Internal Medicine Annual Meeting. Toronto, ON.

Invited Addresses

- Mar 2017 **2nd Guideline Development Group Meeting for the Development of a WHO guideline on the use of antimicrobials in food producing animals based on the WHO list of critically important antimicrobials for human medicine**
Geneva, Switzerland
Restriction in the use of antibiotics in food animals and antibiotic resistance in food animals and humans -- A systematic review and meta-analysis: Summary of original findings and presentation of new findings.
- Oct 2016 **7th Meeting of the World Health Organization Advisory Group on the Integrated Surveillance of Antimicrobial Resistance**
Raleigh, North Carolina
Restriction in the use of antibiotics in food animals and antibiotic resistance in food animals and humans -- A systematic review and meta-analysis. Co-presenter: W. Ghali.
- Oct 2016 **Canadian Health Information Management Association National Conference**
Edmonton, Alberta
Coding health information and administrative data: Barriers to quality as perceived by coding specialists in Alberta. Co-presenter: K. Lucyk.
- Oct 2014 **Canadian Society of Internal Medicine Annual Meeting**
Calgary, Alberta
Palliative care extended workshop: Identifying patients with palliative care needs.
- Nov 2013 **Rocky Mountain/ ACP Internal Medicine Conference**
Banff, Alberta
Workshop: Informing patients on outcomes following in-hospital cardiac arrest.
- Nov 2013 **Calgary Hospital Medicine Conference**
Calgary, Alberta
Workshop: Hypertensive crisis on the ward.
- June 2011 **Medical Grand Rounds**
Royal Alexandra Hospital, Edmonton
Working through diagnostic challenges.
- Nov 2010 **Medical Grand Rounds**
University of Alberta Hospital, Edmonton
Stump the Professor Rounds. Supervised by Dr. Steven Caldwell.

- Oct 2010 **Medical Grand Rounds**
Royal Alexandra Hospital, Edmonton
 Professor's Rounds: Working through diagnostic challenges. Supervised by Dr. Arnold Voth.
- Sept, Oct 2009 **Medical Grand Rounds**
University of Alberta Hospital and Royal Alexandra Hospital, Edmonton
 Approaching falls in hospitalized older adults with a quality care perspective. Supervised by Dr. Katherine Lechelt.

X. PUBLICATIONS

i. Peer reviewed manuscripts

Liu Q, Chen G, **Tang KL**, Quan H. Ethnic disparity for health resources utilization among newly diagnosed hypertension patients. (Under Review)

Boyne DJ, Mickle A, Brenner DR, Friedenreich CM, Cheung WY, **Tang KL**, Wilson T, Lorenzetti DL, James MT, Ronksley PE, Rabi DM. Long-term risk of cardiovascular mortality in lymphoma survivors: A systematic review and meta-analysis. *JAMA Oncology*. 2018 (Under Review)

Lunney M, Lee R, **Tang K**, Wiebe N, Bello AK, Thomas C, Rabi D, Tonelli M, James MT. Systematic Review of the effectiveness of telehealth interventions for patients with end-stage renal disease. *American Journal of Kidney Diseases*. 2018 (Revisions Requested)

Ranelli L, **Tang K**, Kachra R, Desy J, Fabreau G. Integrating the health of socially vulnerable populations into residency programs. *Canadian Journal of General Internal Medicine*. 2018 (In Press)

Tang KL, Siad FM, Arafah D, Lockyer J. An exploration of the content and usability of web-based resources to help individuals find and access family physicians. *Healthcare Policy*. 2018 (In Press)

Smith SA, Yamamoto JM, Roberts DJ, **Tang KL**, Ronksley PE, Dixon E, Buie WD, James MT. Weekend surgical care and postoperative mortality: A systematic review and meta-analysis of cohort studies. *Medical Care*. 2018; 56(2); 122-9.

Peng M, Chen G, **Tang KL**, Quan H, Smith EE, Faris P, Hachinski V, Campbell NR. Blood pressure at age 60-65 versus age 70-75 and vascular dementia: a population based observational study. *BMC geriatrics*. 2018;18(1):22.

Tang KL, Pilote L, Behloul H, Godley J, Ghali WA. An exploration of the subjective social status construct in patients with acute coronary syndrome. *BMC cardiovascular disorders*. 2018 Dec;18(1):22.

Tang KL, Caffrey NP, Nobrega DB, Cork SC, Ronksley PE, Barkema HW, Polachek AJ, Ganshorn H, Sharma N, Kellner JD, Ghali WA. Restricting the use of antibiotics in food animals and antibiotic resistance in food animals and humans -- A systematic review and meta-analysis. *The Lancet Planetary Health*. 2017;1(8):e316-e27.

Blanchard IE, Ahmad A, **Tang KL**, Ronksley PE, Lorenzetti D, Lazarenko G, Lang ES, Doig CJ, Stelfox HT. The effectiveness of prehospital hypertonic saline for hypotensive trauma patients: a systematic review and meta-analysis. *BMC emergency medicine*. 2017 Dec;17(1):35.

Lucyk K, **Tang KL**, Quan H. Barriers to data quality resulting from the process of coding health information to administrative data: A qualitative study. *BMC health services research*. 2017;17(1):766.

Tang KL, Lucyk K, Quan H. Coder perspectives on physician-related barriers to producing high-quality administrative data: a qualitative study. *CMAJ open*. 2017 Jul;5(3):E617.

Sevick LK, Esmail R, **Tang K**, Lorenzetti DL, Ronksley P, James M, Santana M, Ghali W, Clement F. A systematic review on the cost and cost-effectiveness of electronic discharge communications. *BMJ Open*. 2017;7(6):e014722

Tran KC, Leung AA, **Tang KL**, Quan H, Khan NA. Efficacy of calcium channel blockers on major cardiovascular outcomes for the treatment of hypertension in Asian populations: A meta-analysis. *Canadian Journal of Cardiology* 2017;33:635-43.

Stokes W, Fenton C, Clement FM, James MT, Ronksley PE, **Tang K**. The efficacy and safety of 12 weeks of Sofosbuvir and Ledipasvir versus Sofosbuvir, Ledipasvir and Ribavirin in patients with chronic Hepatitis C, genotype 1, who have cirrhosis and have failed prior therapy: A Systematic Review and Meta-Analysis. *Canadian Journal of Gastroenterology and Hepatology*. 2017:6468309.

Tang KL, Quan H, Rabi DM. Measuring medication adherence in patients with incident hypertension: A retrospective cohort study. *BMC Health Services Research*. 2017;17(1):135.

Tang KL, Rashid R, Godley J, Ghali WA. Association between subjective social status and cardiovascular disease and cardiovascular risk factors: A systematic review and meta-analysis. *BMJ Open*. 2016;6:e010137.

Tang KL, Barnieh L, Mann B, Clement F, Campbell DJT, Hemmelgarn BR, Tonelli M, Lorenzetti D, Manns BJ. A systematic review of value-based insurance design in chronic diseases. *The American journal of managed care*. Jun 2014;20(6):e229-241.

Mann BS, Barnieh L, **Tang KL**, Campbell DJT, Clement F, Hemmelgarn BR, Tonelli M, Lorenzetti D, Manns BJ. Association between drug insurance cost sharing

strategies and outcomes in patients with chronic diseases: a systematic review. *PLOS ONE*. 2014;9(3):e89168.

Tang KL, Ghali WA, Manns BJ. Addressing cost-related barriers to prescription drug use in Canada. *CMAJ*. 2014;186(4):276-80.

Tang KL, Eurich DT, Minhas-Sandhu JK, Marrie TJ, Majumdar SR. Incidence, correlates, and chest radiographic yield of new lung cancer diagnosis in 3398 patients with pneumonia. *Arch Intern Med*. 2011;171:1193-1198.

ii. Abstracts- Published

Tang KL, Lucyk K, Quan H. Barriers to high quality coding of hospital chart information to administrative data: A qualitative study. *J Gen Intern Med*. 2016; 31(Suppl 2):133.

Tang KL, Lucyk K, Quan H. Canadian data sources on ethnic classifications. *J Gen Intern Med*. 2016; 31(Suppl 2):144.

Lucyk K, **Tang KL**, Quan H. The historical development of heterogeneity in measuring ethnicity and their implications for health: Findings from the Canadian census, 1871-Present. *J Gen Intern Med*. 2016; 31(Suppl 2):420.

Tang KL, Quan H, Rabi DM. Assessment of operational definitions for medication adherence using long-term outcomes in patients with hypertension. *J Gen Intern Med*. 2015; Suppl 2:103.

Tang KL, Rashid R, Godley J, Ghali WA. Association between subjective social status and cardiovascular disease and cardiovascular risk factors: A systematic review and meta-analysis. *J Gen Intern Med*. 2015; Suppl 2:104.

iii. Commissioned Reports and Consultations

Tang KL, Caffrey NP, Nobrega DB, Cork SC, Ronksley PE, Barkema HW, Polachek AJ, Ganshorn H, Sharma N, Kellner JD, Ghali WA. Supplemental Report to: Restriction in the use of antibiotics in food animals and antibiotic resistance in food animals and humans -- A systematic review and meta-analysis; March 2017. Supplemental Analyses and Report commissioned by the World Health Organization.

Tang KL, Caffrey NP, Nobrega DB, Cork SC, Ronksley PE, Barkema HW, Polachek AJ, Ganshorn H, Sharma N, Kellner JD, Ghali WA. Restriction in the use of antibiotics in food animals and antibiotic resistance in food animals and humans -- A systematic review and meta-analysis; October 2016. Report commissioned by the World Health Organization.

Tang KL, Ghali WA. Overview of patient navigation and mapping of Health Link to a patient navigation framework; July 2016. Consultation and report requested by

Dr. Verna Yiu, President and CEO of Alberta Health Services, and Dr. Francois Belanger, Vice President, Quality and Chief Medical Officer, Alberta Health Services.

Lucyk K, **Tang K**, Quan H. Heterogeneity / Granularity in Ethnicity Classifications Outside the United States. Chapter 5: Ethnic group classifications in Canada; October 2016. Report to the Robert Wood Johnson Foundation.

Shaw J, Archer-Kuhn B, Hodgins D, Patten S, Haines-Saah R, Badry D, Nichols D, **Tang K**, Smart A, Barron G, Fotheringham S. Social Impacts for an Economic Downturn: Considerations for the City of Calgary; April 2016. Consultation and report requested by the City of Calgary.

iv. Communications

Herman RJ, Zarnke KB, **Tang KL**, Lenz R, Walzak A, editors. Rocky Mountain/ ACP Internal Medicine Conference Report; 2013: Nov 14-17; Banff, Alberta.

Herman RJ, Pollak PT, Zarnke KB, Minty E, **Tang KL**, editors. Rocky Mountain/ ACP Internal Medicine Conference Report; 2012: Nov 22-25; Banff, Alberta.