William A. Ghali, MD, MPH, FRCPC

Professor, Division of General Internal Medicine, Departments of Medicine and Community Health Sciences
AI-HS Health Senior Scholar
Tier 2 Canada Research Chair in Health Services
John A. Buchanan Chair in General Internal Medicine
Scientific Director, Calgary Institute for Population and Public Health

RESEARCH INTERESTS AND ACTIVITIES

Key Words: health services, quality of care, outcomes and processes of care, cardiovascular disease, diabetes, venous vascular disease, epidemiology, clinical epidemiology

Dr. Ghali's research is in the general area of health services research with a focus on quality of health care delivery for four inter-related conditions: cardiovascular disease, cerebrovascular disease, venous vascular disease, and diabetes. He conducts a combination of applied studies assessing care delivery for these conditions and methodological research relating to the assessment of quality of care and outcomes. In related research, he is also the lead investigator of a research and innovation initiative – 'the Medical Ward of the 21^{ST} Century' – that has as its focus the development of innovations to improve the quality of health care delivery.

RESEARCH IN PROGRESS

<u>ROLE</u>	FUNDING AGENCY	TITLE OF PROJECT	ALLOCATION
Principal Investigator	Government of Canada/ Province of Alberta	The medical ward of the 21st. century	1,200,000
	Canadian Institutes of Health Research	Deriving novel administrative data patient safety indicators for large-scale surveillance	48,000
	Canada Foundation for Innovation	Broadening the scope of APPROACH – 2	80,000
	Canadian Institute for Health Information	The quality and safety topic advisory group	25,000
Co- Principal Investigator	Canadian Institutes of Health Research	Understanding 'troponinitis': Exploring myocardial injury and its clinical and health services implications	54,000
Co- Investigator	Canadian Diabetes Association	Alliance for Canadian health outcomes research in diabetes	180,000
	Heart and Stroke Foundation of Canada	GENESIS PRAXY: Gender and sex determinants of cardiovascular disease	250,000
	Canadian Institutes of Health Research	The Canadian cardiovascular outcomes research team - 2	840,000



2010/11

<u>ROLE</u>	FUNDING AGENCY	TITLE OF PROJECT	<u>2010/11</u> ALLOCATION
Co- Investigator	Canadian Institutes of Health Research	Development, validation, and application of ICD-10 patient safety indicators	70,000
	Canadian Institutes of Health Research	Rates and waits for cancer surgery in Canada: A mixed methods assessment	140,000
	Canadian Institutes of Health Research	Access and quality of cardiac care for First Nations People	73,000
	Canadian Institutes of Health Research	Development of audit with feedback intervention to improve acute cardiovascular care using APPROACH	50,000
	Canadian Institutes of Health Research	Developing quality indicators to assess the care of adults with major traumatic injuries	74,000
	Canadian Institutes of Health Research	Effect of physician alternative payment plans on the completeness and validity of administrative data	68,000

PUBLICATIONS

Chapter in Book

Khan NA, **Ghali WA**, Cagliero E. Perioperative management of diabetes mellitus. In: *Up To Date*, Rose BD (ed). Up To Date Inc, December 2010.

Peer-Reviewed Journal Articles

- Metcalfe A, Lail P, **Ghali WA**, Sauve RS. The association between neighbourhoods and adverse birth outcomes: A systematic review and meta-analysis of multi-level studies. *Paediatric and Perinatal Epidemiology* 2011;25(3):236-45.
- Southern DA, Izadneghadar M, Humphries KH, Gao M, Wang F, Knudtson ML, Graham MM, Ghali WA. Trends in wait times for cardiac revascularization. *Canadian Journal of Cardiology* 2011;27(2):262.e21-7.
- Butalia S, Leung AA, **Ghali WA**, Rabi DM. Aspirin effect on the incidence of major adverse cardiovascular events in patients with diabetes mellitus: A systematic review and meta-analysis. *Cardiovascular Diabetology* 2011;10:25.
- Ronksley PE, Hemmelgarn BR, Heitman SJ, Flemons WW, **Ghali WA**, Manns B, Faris P, Tsai WH. Excessive daytime sleepiness is associated with increased health care utilization among patients referred for assessment of OSA. *Sleep* 2011;34(3):363-70.

- Ronksley PE, Brien SE, Turner BJ, Mukamal KJ, **Ghali WA**. Association of alcohol consumption with selected cardiovascular disease outcomes: A systematic review and meta-analysis. *British Medical Journal* 2011;342:d671.
- Brien SE, Ronksley PE, Turner BJ, Mukamal KJ, **Ghali WA**. Effect of alcohol consumption on biological markers associated with risk of coronary heart disease: systematic review and metaanalysis of interventional studies. *British Medical Journal* 2011;342:d636.
- Wilton SB, Leung AA, **Ghali WA**, Faris P, Exner DV. Outcomes of cardiac resynchronization therapy in patients with versus those without atrial fibrillation: A systematic review and meta-analysis. *Heart Rhythm* 2011;8(7):1088-94.
- Hamilton MG, Yee WH, Hull RD, Ghali WA. Venous thromboembolism prophylaxis in patients undergoing cranial neurosurgery: A systematic review and meta-analysis. *Neurosurgery* 2011;68(3):571-81.
- Barnabe C, Martin BJ, **Ghali WA**. Systematic review and meta-analysis: Anti-tumor necrosis factor ? Therapy and cardiovascular events in rheumatoid arthritis. *Arthritis Care and Research* 2011;63(4):522-9.
- Althaus F, Paroz S, Hugli O, Ghali WA, Daeppen JB, Peytremann-Bridevaux I, Bodenmann P. Effectiveness of interventions targeting frequent users of emergency departments: A systematic review. Annals of Emergency Medicine 2011;58(1):41-52.
- McMurty MS, Lewin AM, Knudtson ML, **Ghali WA**, Galbraith PD, Schulte F, Norris CM, Graham MM. The clinical profile and outcomes associated with coronary collaterals in patients with coronary artery disease. *Canadian Journal of Cardiology* 2011; July 8.
- Kent D, Ditsios G, Hill MD, Almekhlafie MA, Wilton SB, **Ghali WA**. Recurrent cerebral ischemia in medically-treated patent foramen ovale, a meta-analysis. *Neurology* 2011;77(3):301-2.
- Ma IW, Brindle ME, Ronksley PE, Lorenzetti DL, Sauve RS, **Ghali WA**. Use of a simulation-based education to improve outcomes of central venous catheterization: A systematic review and meta-analysis. *Academic Medicine* 2011;86(9):1137-47.
- Januel JM, Luthi JC, Quan H, Borst F, Taffe P, **Ghali WA**, Burnand B. Improved accuracy of comorbidity coding over time after the introduction of ICD-10 administrative data. *BMC Health Services Research* 2011;11(1):194.
- Li P, Stelfox HT, Ghali WA. A prospective observational study of physician handoff for intensive-careunit-to-ward patient transfers. *American Journal of Medicine* 2011;124(9):860-7.
- Jette N, Quan H, Hemmelgarn B, Drosler S, Maass C, Moskal L, Paoin W, Sundararajan V, Gao S, Jakob R, Ustun B, Ghali WA; IMECCHI Investigators. The development, evolution, and modifications of ICD-10: Challenges to the international comparability of morbidity data. *MedicalCare* 2010;48(12):1105-10.
- Wilton SB, Fundytus A, Ghali WA, Veenhuyzen GD, Quinn FR, Mitchell LB, Hill MD, Faris P, Exner DV. Meta-analysis of the effectiveness and safety of catheter ablation of atrial fibrillation in patients with versus without left ventricular systolic dysfunction. *American Journal of Cardiology* 2010;106(9):1284-91.

- Khan NA, Campbell NR, Frost SD, Gilbert K, Michota FA, Usmani A, Seal D, **Ghali WA**. Risk of intraoperative hypotension with loop diuretics: a randomized controlled trial. *American Journal of Medicine* 2010;123(11):1059.e1-8.
- Hassan A, Newman A, Ko DT, Rinfret S, Hirsch G, **Ghali WA**, Tu JV. Increasing rates of angioplasty versus bypass surgery in Canada, 1994-2005. *American Heart Journal* 2010;160(5):958-65.
- Wijeysundera HC, Tomlinson G, Norris CM, **Ghali WA**, Ko DT, Krahn MD. Predicting EQ-5D utility scores from the Seattle angina questionnaire in coronary artery disease: A mapping algorithm using a Bayesian framework. *Medical Decision Making* 2011;31(3):481-93.
- Lemaire JB, Wallace JE, Dinsmore K, Lewin AM, **Ghali WA**, Roberts D. Physician nutrition and cognition during work hours: effect of a nutrition-based intervention. *BMC Health Services Research* 2010;10(1):241.
- Stelfox HT, Straus SE, Ghali WA, Conly J, Laupland K, Lewin A. Temporal artery versus bladder thermometry during adult medical-surgical intensive care monitoring: An observational study. BMC Anesthesiology 2010;10(1):13.
- Taylor CM, Humphries KH, Pu A, Ghali WA, Gao M, Knudtson M, Hoffmann U, Carere RG. A proposed clinical model for efficient utilization of invasive coronary angiography. *American Journal* of Cardiology 2010;106(4):457-62.
- James MT, Ghali WA, Tonelli M, Faris P, Knudtson ML, Pannu N, Klarenbach SW, Manns BJ, Hemmelgarn BR. Acute kidney injury following coronary angiography is associated with a long-term decline in kidney function. *Kidney International* 2010;78(8):803-9.
- Freiheit EA, Hogan DB, Eliasziw M, Meekes MF, Ghali WA, Partlo LA, Maxwell CJ. Development of a frailty index for patients with coronary artery disease. *Journal of the American Geriatric Society* 2010;58(8):1526-31.
- So L, Beck CA, Brien S, Kennedy J, Feasby TE, **Ghali WA**, Quan H. Chart documentation quality and its relationship to the validity of administrative data discharge records. *Health Informatics Journal* 2010;16(2):101-13.
- Cantor WJ, Strauss BH, Graham MM, Southern DA, Woo K, Tyrrell B, Knudtson M, **Ghali WA**. Time of day and outcomes of nonurgent percutaneous coronary intervention performed during working hours. *American Heart Journal* 2010;159(6):1133-8.
- Rabi D, Clement F, McAlister F, Majumdar S, Sauve R, Johnson J, Ghali WA. Effect of perioperative glucose-insulin-potassium infusions on mortality and atrial fibrillation after coronary artery bypass grafting: A systematic review and meta-analysis. *Canadian Journal of Cardiology* 2010;26(6):178-84.
- Southern DA, Roberts B, Edwards A, Dean S, Norton P, Svenson LW, Larsen E, Sargious P, Lau DC, **Ghali WA**. Validity of administrative data claim-based methods for identifying individuals with diabetes at a population level. *Canadian Journal of Public Health* 2010;101(1):61-4.

- Patel AB, Tu JV, Waters NM, Ko DT, Eisenberg MJ, Huynh T, Rinfret S, Knudtson M, **Ghali WA**. Access to primary percutaneous coronary intervention for ST-segment elevation myocardial infarction in Canada: A geographic analysis. *Open Medicine* 2010;1(1):13.
- Bodenmann P, Cornuz J, Vaucher P, **Ghali WA**, Daeppen JB, Favrat B. A health behavior cross-sectional study of immigrants and non-immigrants in a Swiss urban general-practice setting. *Journal of Immigrant and Minority Health* 2010;12(1):24-32.
- Quan H, Khan N, Li B, Humphries KH, Faris P, Galbraith PD, Graham M, Knudtson ML, **Ghali WA**. Invasive cardiac procedure use and mortality among South Asian and Chinese Canadians with coronary artery disease. *Canadian Journal of Cardiology* 2010;26(7):e236-42.

Abstracts Published in Journals

- Butalia S, Leung AA, **Ghali WA**, Rabi DM. Aspirin effect on the incidence of major adverse cardiovascular events in patients with diabetes mellitus: A systematic review and meta-analysis. *Canadian Journal of Cardiology* 2010;26(Suppl SD):167.
- Humphries KH, Karp I, **Ghali WA**, Izadnegahdar M, Pilote L, on behalf of the GENESIS-PRAXY Investigators. Are there sex differences in the treatment of young adults admitted to hospital with ACS? *Canadian Journal of Cardiology* 2010;26(Suppl SD):34.
- Martin B, Hauer T, Lewin AM, Galbraith D, **Ghali WA**, Knudtson ML, Arena R, Stone JA, Aggarwal. The impact of cardiac rehabilitation on outcomes in patients with coronary artery disease: Focus on women and the elderly. *Canadian Journal of Cardiology* 2010;26(Suppl SD):163.
- Butalia S, Shaheen AA, Myers RP, **Ghali WA**, Rabi DM. Sex differences in diagnostic and therapeutic procedures for acute myocardial infarction in hospitalized patients with diabetes mellitus. *Canadian Journal of Cardiology* 2010;26(Suppl SD):178.
- Lemaire J, Roberts D, Wallace J, Dinsmore K, Ghali WA, Lewin A. Physician nutrition and cognition during work hours: effect of a nutrition-based intervention. *Journal of General Internal Medicine* 2010;25(Suppl 3):S351.
- Auer R, Ghali WA, Rodondi N, de Bosset-Sulzer V, Cornuz J. Is atherosclerosis screening by noninvasive imaging effective in cardiovascular prevention? A systematic review. *Journal of General Internal Medicine* 2010;25(Suppl 3):S317.
- Patel A, Quan H, Faris P, **Ghali WA**. Evaluation of a regional myocardial infarction care model: Effects on acute patient transfers and mortality. *Journal of General Internal Medicine* 2010;25(Suppl 3):S272.
- Althaus F, Daeppen JB, Paroz S, Hugli O, Peytremann-Bridevaux I, Ghali WA, Bodenmann P. Effectiveness of interventions targeting frequent users of emergency departments: A systematic review. *Journal of General Internal Medicine* 2010;25(Suppl 3):S266.
- Fabreau G, Minty E, Yang J, Parsons G, Quan H, **Ghali WA**. Creation of a global health metadata catalogue to inform international studies of disease burden and health system performance. *Journal of General Internal Medicine* 2010;25(Suppl 3):S250.

- Leung AA, Southern DA, Galbraith PD, Knudtson ML, **Ghali WA**. Time-dependency of outcome relationships for drug-eluting stents versus bare-metal stents. *Journal of General Internal Medicine* 2011;26(Suppl 1):8787.
- Wilson BJ, Ghali WA. A case of histamine fish poisoning. *Journal of General Internal Medicine* 2011;26(Suppl 1):10042.

GRADUATE STUDENT SUPERVISION

Alka Patel, PhD student, Department of Community Health Sciences

- Thesis Topic: Evaluating geographic access to cardiac catheterization facilities to inform regionalized models of care for acute myocardial infarction
- Soror Mona Motamedi, MSc student, Department of Community Health Sciences (completed September 2010)
- Thesis Topic: Seamless discharge: Understanding the challenges of hospital discharge and development of a web-based solution

Ghazwan Altabbaa, MSc student, Department of Community Health Sciences

Thesis Topic: The visualization of uncertainty in clinical diagnostic reasoning for pulmonary embolism: A randomized controlled study

Dean Yergens, MSc student, Department of Community Health Sciences Thesis Topic: Approaches for understanding and improving patient flow in acute care hospitals

Simona Burs, MSc student, Department of Community Health Sciences (Co-Supervisor) Thesis Topic: Diabetes health services research

Billie-Jean Martin, PhD student, Department of Cardiac Sciences (Co-Supervisor) Thesis Topic: Obesity and cardiovascular disease

POSTDOCTORAL RESEARCH FELLOW

Pin Li, Postdoctoral Fellow, Department of Medicine Research Topic: Transitions of care from ICU to medical wards

Susan Brien, Postdoctoral Fellow, Department of Community Health Sciences Research Topic: Performance measurement in health care