2016 ESCN Studentship Update

A core function of the Scientific Office of the Emergency Strategic Clinical Network (ESCN) is to build research capacity in emergency medicine. The ESCN Summer Studentship Award is designed to foster research interest in emergency medicine and related disciplines among students at the undergraduate level of study. Through the results of the research projects conducted by the students, this initiative contributes to the quality of emergency medicine care delivery within the Health Quality Council of Alberta’s six domains of quality: appropriateness, accessibility, effectiveness, efficiency, safety, and acceptability.

The ESCN is pleased to report the progress of the 2016 Summer Studentship Award winners. We look forward to their continued success.

Student: Shashwat Desai, BSc, MD Candidate 2019, University of Alberta
Supervisor: Brian Rowe MD, MSc, CCFP (EM), FCCP
Project: Effectiveness of Implementing Evidence Based Interventions to Reduce C-Spine Imaging in the Emergency Department: A systematic review

Six electronic databases and the grey literature were searched. Comparative studies examining interventions to reduce C-spine imaging in adults presenting with stable neck trauma were eligible for inclusion. Two independent reviewers screened for study eligibility, assessed study quality, and extracted data. A total of 848 unique citations were screened for relevance of which six before-after studies and one randomized controlled trial (RCT) were included. The systematic review shows inconclusive evidence on the effectiveness of interventions to reduce C-spine imaging in adult ED patients with stable neck trauma.

Student: Rashi Hiranandani, BSc, MSc, MD candidate 2019, University of Ottawa
Supervisor: Eddy Lang, MD Professor and Department Head for Emergency Medicine, University of Calgary & Alberta Health Services, Calgary Zone
Project: Analysis of imaging practices for uncomplicated headaches and atraumatic back pain by ED physicians in the Calgary Zone

Data for 2 years for the 180 physicians in the 4 hospitals in Calgary were examined. The percentage of patients who receive Lumbar Spine X-rays for atraumatic uncomplicated back pain in the Calgary area is 16.5%, as opposed to 35.2% for patients who receive head CT scans for uncomplicated headaches. Various chi-square tests were run to determine factors impacting CT ordering practices. The project was presented at the National Choosing Wisely meeting in Calgary and has been accepted for both the Calgary Emergency Medicine Department Research Day as well as the Canadian Association of Emergency Physicians 2017 conference.

Student: Anne Kemp, BSc (Hons), MD candidate 2019, University of Alberta
Supervisor: Dr. Amy Metcalfe, MSc, PhD Assistant Professor, Departments of Obstetrics & Gynecology, Medicine, and Community Health Sciences, University of Calgary
Project: Postpartum utilization of the Emergency Department for women with a hypertensive disorder

This study aimed to determine what proportion of women who present to an Emergency Department in Calgary within 42 days postpartum, with signs and symptoms of postpartum Hypertensive
Disorders of Pregnancy (HDP), are diagnosed with the disorder, and to characterize how these women are managed in the Emergency Department. The study team pulled a random sample of charts of women with a diagnostic code for HDP, as well women who presented with related but ultimately alternate diagnoses such as headache or nausea. In total, 100 charts for HDP and 50 charts of women with alternate diagnoses were reviewed. The findings were presented at the Canadian National Perinatal Research Meeting in Montebello Quebec in February 2017 and a draft manuscript is being revised by the study team.

Student: Harry Liu, BSc, MD Candidate 2019, University of Alberta
Supervisor: Brian Rowe MD, MSc, CCFP (EM), FCCP
Professor in the Department of Emergency Medicine and the School of Public Health at the University of Alberta in Edmonton. Tier I Canada Research Chair (CRC) in Evidence-based Emergency Medicine (2011-2018).
Project: Choosing Wisely: The role of imaging in low back pain management in the emergency department

Six bibliographic databases and grey literature were searched. Comparative studies assessing interventions aimed at reducing imaging in the ED for adult patients with LBP were eligible for inclusion. Two reviewers independently screened study eligibility, completed data extraction, and assessed the quality of included studies. Due to a limited number of studies and significant heterogeneity, a descriptive analysis was performed. The project team is currently preparing a manuscript for submission to Academic Emergency Medicine. An abstract derived from the project was published in the 2017 Choosing Wisely Canada Annual Conference Abstract Book. Mr. Liu also recently received the Dr. Gary McPherson Leadership Scholarship and Laurence Decore Award for Student Leadership. Mr. Liu credits his ESCN studentship experience as playing “an important role” in supporting his applications for these awards.

Student: Shari Li, BSc, MD Candidate 2018, Queen’s University
Supervisor: Eddy Lang, MD
Professor and Department Head for Emergency Medicine, University of Calgary & Alberta Health Services, Calgary Zone
Project: Use of CT Angiography in Emergency Departments for Minor Strokes and Transient Ischemic Attacks (TIAs): A Systematic Review and Meta-analysis

The study team searched MEDLINE, EMBASE, and Cochrane Central for eligible studies. They included observational cohort studies evaluating secondary stroke rate, mortality, ED revisits, disability, or changes in medical or surgical management in patients presenting acutely with strokes or TIAs. To be included, studies had to include data on CT angiography use and contain a control group. Randomized controlled trials were also eligible, but none were found meeting our criteria. Results have been accepted for presentation at the Canadian Association of Emergency Physicians 2017 conference.

Student: Catherine Stewart, Undergraduate Student – Biology, University of Alberta
Supervisor: Sarah Curtis MD, M.Sc., FRCPC (PEM), FAAP
Associate Professor, Departments of Pediatrics & Emergency Medicine, University of Alberta
Project: Does breed specific legislation protect children from dog bites and associated trauma? Chart-Reviews from a Sentinel Site
732 charts were identified via discharge diagnosis terms including ‘Bite’, ‘Dog Bite’, and ‘Animal Bite’. Included charts are for are children age 1 day to 16 years old who have sustained a dog-related injury requiring an ED visit. The most notable results are the incredibly low rate of reporting these incidents to Public Health (12.3%), a very high consult rate (58.8%) implying these incidents are costly, and the most common location of injury being the face (65.2%). This last finding may explain for a high rate of plastic surgery consultations (45.9% from all cases requiring consults, or 27.0% of all cases). Understanding the common injury characteristics and injury circumstances as well as common patient demographics will reveal which youth groups are more likely to experience a dog-related injury and thus allow for better targeted prevention measures. Posters based on the work were presented at the Research Day for The University of Alberta Department of Emergency Medicine in June 2016; Clinical Pediatrics, Family and Emergency Medicine Conference in Vancouver in September 2016; and Women & Children's Health Research Institute Research Day in November 2016.

**Student:** Jonas Buttenschoen, Undergraduate Student – Neuroscience, University of Alberta  
**Supervisor:** Sander Veldhuyzen van Zanten, MD, PhD, FRCPC  
Professor & Division Director, Gastroenterology, University of Alberta  
**Project:** A chart review of management of patients presenting with upper Gastro-Intestinal bleeding (UGIB) in the ED at the University of Alberta Hospital.

Due to delay in Research Ethics Board approval and subsequent operational approvals, Mr. Buttenschoen was unable to complete the planned chart review. However, in developing the protocol for the chart review, he learned about the way patients with UGIB present, how they should be managed and chart review methodology. In lieu of conducting his own project, Dr. Buttenschoen participated in conducting chart reviews for a separate research project related to GI bleeding.