Project Title: Partnering to establish emergency medicine in Ethiopia: development, implementation and evaluation of a postgraduate residency training program at Addis Ababa University

IDCR Project Number: 106616-00020799-040

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Report Type: Appendices for Final Technical Report

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Country: Ethiopia

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<tr>
<th>Expected Results</th>
<th>Indicator</th>
<th>Means of Verification</th>
<th>Tool Information</th>
<th>Collection cycle</th>
<th>Accomplished</th>
<th>Date of Completion/Date of Expected Completion</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>1. The delivery of an effective emergency medicine residency program</td>
<td>PGY1s pass 1st year exams</td>
<td>descriptive statistics</td>
<td>yearly</td>
<td>Yes</td>
<td>October 2012 &amp; October 2013</td>
<td>100% pass rate</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PGY3s pass boards</td>
<td>descriptive statistics</td>
<td>yearly</td>
<td>Yes</td>
<td>Oct-13</td>
<td></td>
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<td></td>
<td>Monthly EM rotation evaluations from visiting faculty (pass/fail)</td>
<td>Evaluations</td>
<td>4x/year</td>
<td>Yes</td>
<td>October 2012, February 2013, May 2013, June 2013, October 2013 &amp; February 2014</td>
<td>97% pass rate (1 resident failed during 1 rotation but passed residency requirements and is now current graduate working in Ethiopia)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Procedures and U/S grades</td>
<td>logbook</td>
<td>ongoing</td>
<td>No</td>
<td></td>
<td>Intermittent compliance and unable to supervise during months not in country</td>
<td></td>
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<tr>
<td></td>
<td>Resident research project evaluations</td>
<td>A form for mentors to fill out on: question development, lit review, methodology, data collection &amp; analysis, presentation, overall pass/fail (AAU)</td>
<td>yearly</td>
<td>Yes</td>
<td>Oct-13</td>
<td>4 resident research projects mentored and completed. Ongoing mentorship of current projects of PGY-3's</td>
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<td>Expected Results</td>
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<tr>
<td>Retention of residents after graduation</td>
<td>% of resident cohort practicing EM in Ethiopia</td>
<td># maintained in the public system in Addis Ababa providing emergency services</td>
<td>descriptive statistics</td>
<td>yearly</td>
<td>Yes</td>
<td>Current</td>
<td>4 out of 4 graduates are currently working at least partly in the public system in Addis Ababa</td>
</tr>
<tr>
<td></td>
<td></td>
<td>establishment of leadership roles for graduates - in AAU (emergency dept director, program director)</td>
<td>descriptive statistics</td>
<td>yearly</td>
<td>Yes</td>
<td>Current</td>
<td>2 graduates are working as Staff Physicians and Faculty at Black Lion Hospital and AAU</td>
</tr>
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<td></td>
<td></td>
<td># maintained in the public system in peripheral hospitals providing emergency services</td>
<td>descriptive statistics</td>
<td>yearly</td>
<td>Yes</td>
<td>Current</td>
<td>2 graduates are working in peripheral hospitals as emergency doctors</td>
</tr>
<tr>
<td></td>
<td></td>
<td># maintained in the private system providing emergency services</td>
<td>descriptive statistics</td>
<td>yearly</td>
<td>Yes</td>
<td>Current</td>
<td>Current graduates as well as residents work in the private system to support their clinical work in the public system</td>
</tr>
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<td>Expected Results</td>
<td>Indicator</td>
<td>Means of Verification</td>
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<tr>
<td>Positive attitude and high satisfaction of residents towards TAAAC-EM and future career aspirations and opportunities in Ethiopia</td>
<td>Residents feel better equipped with the knowledge to effectively provide emergency care in Ethiopia</td>
<td>satisfaction questionnaire</td>
<td>survey</td>
<td>yearly</td>
<td>No</td>
<td>Oct-14</td>
<td>Survey in development</td>
</tr>
<tr>
<td></td>
<td>Resident experience information from IDRC policy analysis</td>
<td>focus groups and interviews</td>
<td>One time instance: October 2012</td>
<td>Yes</td>
<td>Oct-12</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Exit surveys</td>
<td>survey</td>
<td>yearly (at graduation)</td>
<td>No</td>
<td>Oct-14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Well-designed and taught program</td>
<td>Strong teachers</td>
<td>Lecture and teaching month evaluations of visiting faculty</td>
<td>survey</td>
<td>4x/year</td>
<td>Yes</td>
<td>October 2012, February 2013, May 2013, June 2013, October 2013 &amp; February 2014</td>
<td>All evaluations from each rotation have been collected, interpreted and summarized</td>
</tr>
<tr>
<td>Relevant curriculum</td>
<td>Teaching Modules project: Peer reviewed, resource appropriate lectures delivered</td>
<td>descriptive statistics</td>
<td>yearly</td>
<td>Yes</td>
<td></td>
<td>50 lectures have been generated by over 100 expert faculty, peer-reviewed, and then made available through open-access copyright for use in other settings</td>
<td></td>
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<tr>
<td></td>
<td>Hours of bedside teaching</td>
<td>estimated</td>
<td>yearly</td>
<td>Yes</td>
<td></td>
<td>Over 9 hours of bedside teaching over this period</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hours of didactic lectures/practical skills</td>
<td>estimated</td>
<td>yearly</td>
<td>Yes</td>
<td></td>
<td>Over 95 didactic lectures and 25 practical sessions were delivered over this period</td>
<td></td>
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<td>Expected Results</td>
<td>Indicator</td>
<td>Means of Verification</td>
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<tr>
<td>2. The provision of a quality experience for U of T post-graduate and faculty delegates</td>
<td>Quality EM resident rotation</td>
<td>Evaluation by U of T senior residents</td>
<td>Resident evaluations</td>
<td>4x/year</td>
<td>Yes</td>
<td>October 2012, February 2013, May 2013, June 2013, October 2013 &amp; February 2014</td>
<td>All evaluations from each rotation have been collected, interpreted and summarized</td>
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<td></td>
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<td>A resident is current in the initial stages of developing this survey</td>
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<tr>
<td></td>
<td>Publication</td>
<td>Resident experience survey</td>
<td>4x/year</td>
<td>No</td>
<td>October 2014</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Quality Faculty Experience</td>
<td>Positive trip reports</td>
<td>Faculty evaluations and debrief information</td>
<td>Monthly team leader trip reports/outgoing staff report.</td>
<td>4x/year</td>
<td>Yes</td>
<td>October 2012, February 2013, May 2013, June 2013, October 2013 &amp; February 2014</td>
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## TAAAC-EM Monitoring Evaluation Framework
### September 2012-March 2014

<table>
<thead>
<tr>
<th>Expected Results</th>
<th>Indicator</th>
<th>Means of Verification</th>
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<tr>
<td>Quality Faculty Experience (cont)</td>
<td>U of T volunteers feel appropriately briefed and prepared for their experience</td>
<td>Safety (physical and emotional), cultural preparedness, work.</td>
<td>survey</td>
<td>4x/year</td>
<td>Yes</td>
<td>October 2012, February 2013, May 2013, June 2013, October 2013 &amp; February 2014</td>
<td>This is part of our team debriefing. All faculty feel that they have been prepared. A formal survey focused on faculty preparedness and overall experience is currently in development</td>
</tr>
<tr>
<td>Interest of delegates to continue to contribute/stay involved</td>
<td># or % of returned delegates</td>
<td>descriptive statistics</td>
<td>4x/year</td>
<td>Yes</td>
<td>October 2012, February 2013, May 2013, June 2013, October 2013 &amp; February 2014</td>
<td>5/14 (36%) faculty delegates were returning participants while 1/1 program managers (100%) returned for a second TAAAC-EM trip. In addition 2 of the faculty delegates for the upcoming May 2014 trip previously participated in a TAAAC-EM trip as a resident and the 3rd faculty delegate for the upcoming May 2014 trip will be returning for his second trip.</td>
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<tr>
<td>Active post-graduate partnerships</td>
<td>Resident Committee Member</td>
<td>Consecutive Terms Filled</td>
<td>descriptive statistics</td>
<td>yearly</td>
<td>Yes</td>
<td>June 2013 &amp; ongoing</td>
<td>All terms filled</td>
</tr>
<tr>
<td>Expected Results</td>
<td>Indicator</td>
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<td>Tool Information</td>
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<tr>
<td>Active post-graduate partnerships (cont)</td>
<td>Resident Research projects</td>
<td># of resident research projects being supervised by TAAAC-EM faculty</td>
<td>descriptive statistics</td>
<td>yearly</td>
<td>Yes</td>
<td>June 2013 &amp; ongoing</td>
<td>4 projects undertaken; 3 of which have been taken through concept, design and analysis</td>
</tr>
<tr>
<td>3. Lasting and strong institutional relationship between AAU and International Partners (U of T and Wisconsin)</td>
<td>All university stakeholders feel appropriately represented and respected - governance</td>
<td>Both universities # of shared abstracts and papers; formal partnership agreements between universities</td>
<td>descriptive statistics</td>
<td>ongoing</td>
<td>Yes</td>
<td>ongoing</td>
<td>Reciprocal exchanges of lectures, co-authoring of abstracts and papers. Joint MOU signed between AAU and UofT in November 2013</td>
</tr>
<tr>
<td>University inputs shared (financial and in-kind) - resources</td>
<td>AAU and U of T</td>
<td>budget</td>
<td>budget including $, in-kind, and volunteer inputs</td>
<td>yearly</td>
<td>Yes</td>
<td>ongoing</td>
<td>AAU provides $3000/month for flights and $1500/month for accommodations and $2000/month for stipend for UofT staff. UofT teachers volunteer their time estimated at $40,000/month of devoted clinical and teaching time</td>
</tr>
<tr>
<td>Expected Results</td>
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<tr>
<td>Enhancing the reputation the University of Toronto nationally and international</td>
<td>Academic deliverables and dissemination (outputs)</td>
<td>Papers written/published, teleconferences, presentations, abstracts, teaching modules, etc.</td>
<td>List</td>
<td>ongoing</td>
<td>Yes</td>
<td>ongoing</td>
<td>TAAAC-EM faculty and residents have led the development of papers, abstracts, presentations and, lectures throughout the granting period and currently have several in progress</td>
</tr>
<tr>
<td>Consistant communication and collaboration</td>
<td>Meetings and documents</td>
<td>Contracts/MOUs/meeting minutes/LOI. TAAAC-EM monthly meetings (minutes). All partners meeting (UW, AAU, UofT) once a year</td>
<td>collection of documents</td>
<td>yearly, or continuous as necessary</td>
<td>Yes</td>
<td>ongoing</td>
<td>All partner meetings occurred as scheduled and all documentation recorded.</td>
</tr>
<tr>
<td>Institutional capacity building</td>
<td># of anciliary staff trained and supported by TAAAC-EM; SIM Centre, clerks and assistant, admin support</td>
<td>$ figure (nurses, yoseph, Tigist, research assistants etc.)</td>
<td>highlighted in the budget</td>
<td>yearly</td>
<td>Yes</td>
<td>ongoing</td>
<td>This grant allowed for significant capacity building with the opportunity to support development of research capacity at Black Lion Hospital and improve the relationship between the Emergency Department and other departments at Black Lion Hospital.</td>
</tr>
</tbody>
</table>

**TAAAC-EM Monitoring Evaluation Framework**  
**September 2012-March 2014**
<table>
<thead>
<tr>
<th>Multi-disciplinary approach</th>
<th>Engaging multidisciplinary staff to improve provision of efficient and safe emergency care</th>
<th>Development and delivery of a nursing leadership program</th>
<th># of TAAAC-EM trips with nurse participant</th>
<th>October 2012</th>
<th>Yes</th>
<th>ongoing</th>
</tr>
</thead>
</table>

TAAAC-EM has been successful at engaging the Faculty of Nursing at UofT and at AAU, who have assumed responsibility for cultivating nursing leadership in emergency medicine and critical care. TAAAC-EM continues to advise UofT Nursing leadership on ED priorities.
Appendix 2a. Abstracts accepted to the Canadian Association for Emergency Physicians (CAEP) Conference 2014 – Head Trauma

Title: Epidemiology and outcomes of head injury patients in an urban Ethiopian emergency department

Authors:
Megan Landes, MD, MSc.
Raghu Venugopal, MD, MPH, FRCPC
Sara Berman, MPH
Aklilu Aza, MD

Introduction

Head injury is a leading cause of mortality in Africa where many countries are in the early stages of developing pre-hospital, emergency and critical care services. The objective of this study was to characterize the epidemiology and outcomes of head injury at a large urban academic hospital with a newly active emergency medicine program in Ethiopia.

Methods

We conducted a prospective cohort of all head injured (including both isolated head injury and multisystem trauma with head injury) patients over 4 months presenting to the Emergency Department of Tikur Anbessa Specialized Hospital, Addis Ababa, Ethiopia. Using a standardized data collection form, demographic and clinical information was extracted from the patient’s chart, radiology reports and/or operative reports. Patients were followed until they reached one of the following endpoints: discharge, referral to another hospital, death, or 7 days in the hospital. Consent for study participation was obtained from the patient or substitute decision maker.

Results

Overall, 204 patients with head injury were enrolled of which 53 (26.0%) had multisystem trauma. The majority of head injuries occurred in those 16 to 30 years old (51.0%) and among men (86.8%). Over half of all head injuries were a result of road traffic accidents (RTAs): 24.5% in pedestrians struck by a vehicle and 25.7% as a driver or passenger. Other mechanisms included: assault with blunt injury (38.2%) or penetrating injury (2.5%) and falls (17.7%).

Head injury severity (as per the Glasgow Coma Scale (GCS)) on presentation was as follows: 108 patients had mild injury (GCS 13-15; 53.0%), 39 with moderate (GCS 9-12; 19.1%), and 51 with severe (GCS 3-8; 25.0%). Overall, 149 (73.0%) patients were discharged from hospital, 34 (16.7%) were referred to another hospital, and 21 patients died (10.3%). The majority (62.6%) of deaths occurred within 48 hours of admission to the emergency department. In multivariable analysis, death was significantly associated with the following characteristics on presentation to the emergency department: age over 60 years (aOR 68.8, 95%CI 2.0-2329.0, p=0.02), GCS less than 9 (aOR 14.8, 95%CI 2.2-99.5, p=0.01), fixed bilateral pupils (aOR 39.1, 95%CI 4.2-362.8, p<0.01) and hypoxia (oxygen saturation<90%; aOR 14.2%, 95%CI 6.1-123.9, p=0.01).
Conclusion

Head injury after trauma represents a significant risk of morbidity and mortality in this setting in Ethiopia, for which the ongoing development of emergency and surgical services may improve outcomes. Appropriate identification and services for patients at risk of mortality may guide this continued development.
Appendix 2b. Abstracts accepted to Canadian Association for Emergency Physicians (CAEP) Conference 2014 – Graduate Retention Context Analysis

CONTROL ID: 1923923

TITLE: Examining the current health care milieu of the new Ethiopian emergency medicine system: A qualitative analysis of Ethiopian Emergency Medicine Residents

AUTHORS/INSTITUTIONS: J. Lockwood, M. Landes, Division of Emergency Medicine, Department of Medicine, University of Toronto, Toronto, Ontario, CANADA; A. Azaj, Department of Emergency Medicine, School of Medicine, Addis Ababa University, Addis Ababa, ETHIOPIA; S. Berman, University Health Network, Toronto, Ontario, CANADA; S. Vaillancourt, J. Maskalyk, Department of Emergency Medicine, St. Michael's Hospital, Toronto, Ontario, CANADA; M. Landes, Division of Emergency Medicine, Department of Family and Community Medicine, Toronto, Ontario, CANADA;

PRESENTATION TYPE: Oral or Poster

CURRENT CATEGORY: International medicine | Education/Teaching

CURRENT INVESTIGATION TYPE: Qualitative Research | Qualitative Research

KEYWORDS: administration, postgraduate education, international.

ABSTRACT BODY:

Introduction: Despite a significant burden of acute illness, infrastructure for emergency medical care remains in the early stages of development in Ethiopia. The Toronto-Addis Ababa Academic Collaboration in Emergency Medicine (TAAAC-EM) is a collaboration between Addis Ababa University and the University of Toronto to address the design and implementation of the first Ethiopian Emergency Medicine (EM) resident training program. The Collaboration seeks to build national emergency care capacity, but similar programs elsewhere have had unintended consequences on human resources migrations. The objective of this study was to improve understanding of the health care and human resources issues that new graduates will be encountering as Ethiopia’s first emergency medicine physicians. Furthermore, we wished to explore emergency medicine residents’ perspectives on factors affecting retention post graduation.

Methods: A series of semi-structured qualitative interviews were conducted with six Ethiopian EM residents in October 2012 in Addis Ababa. Two residents were interviewed from each academic year of the three-year program. The interviews, after verbatim transcription, were imported into Weft QDA software for coding and analysis. Themes and sub-themes were identified and thematic analysis of the data was conducted with the retrieved coded data. Finally, a narrative account of the findings was developed.

Results: A number of push and pull factors were identified pertaining to graduate retention including: financial, workplace (including concerns about supplies and resources), career expectations and current unmet training needs. All residents expressed a desire to remain in Ethiopia, and the interviewees identified potential solutions to mitigate forces encouraging emigration, including financial incentives, improvements to workplace conditions and continuing education. Cohesive forces were identified including social familiarity and return to service agreements that encourage graduates to pursue careers within Ethiopia.

Conclusion: A number of ‘push’ and ‘pull’ forces were identified which may affect retention of the first cohorts of emergency medicine graduates in Ethiopia. Solutions regarding retention of emergency medical professionals must be specific for the Ethiopian context. The attitudes and opinion of other important stakeholders, including politicians and health care administrators, must be ascertained for a more complete understanding of the human resources context for this developing emergency medicine system.
Appendix 3b. Abstracts accepted to Canadian Association for Emergency Physicians (CAEP) Conference 2014 - Telesimulation

CONTROL ID: 1935122 TITLE: ‘Telesimulation’ in Emergency Medicine: connecting Canadian faculty to Ethiopian residents to provide procedural teaching
AUTHORS/INSTITUTIONS: E. Austin, M. Landes, N. Meshkat, J. Maskalyk, A. Okrainec, University of Toronto, Toronto, Ontario, CANADA; P. Miller, Lion’s Gate Hospital, North Vancouver, British Columbia, CANADA; A. Azazh, Addis Ababa University, Addis Ababa, ETHIOPIA;
PRESENTATION TYPE: Poster
CURRENT CATEGORY: Education/Teaching | International medicine
CURRENT INVESTIGATION TYPE: Qualitative Research | Qualitative Research
KEYWORDS: Innovation in EM Education, International Medicine, Simulation.

ABSTRACT BODY:
Introduction: Simulation is a prevalent training method in Canada for teaching technical skills in emergency medicine. In resource-limited settings, challenges to simulation training often include a lack of equipment and/or qualified trainers. ‘Telesimulation’ is a low-cost and validated tool that remotely connects teachers with trainees using the Internet and re-creates a similar environment to simulation in which the teacher and trainees are in the same room.

Methods: In 2010, Addis Ababa University launched Ethiopia’s first emergency medicine residency program, supported in part by the University of Toronto (UofT). In 2012, a telesimulation lab was setup at Tikur Anbessa Hospital, Addis Ababa, to connect with the existing lab at the Telemerty/Chang Telesimulation Centre in Toronto. Each telesimulation lab contains a simulation “box” where one set of webcams allow visualization of hands and procedural equipment, and a second direct visualization of each person using the simulator. Cameras are connected using SkypeTM software, allowing both the instructor and trainee to simultaneously see the contents of each other’s simulation box and to communicate.

Results: To date we have developed and implemented a teaching module for central venous catheter insertion using telesimulation. Each course consists of a thirty-minute didactic lecture over SkypeTM, a one-hour skills training session with 2-3 participants, and 15 minutes per participant of 1:1 training with the instructor. Participants are evaluated at the end of the session for skill competency and provided feedback.

Conclusion: Telesimulation has been used to train surgeons worldwide in laparoscopy (1) and in Botswana for pediatric intraosseous insertion (2). This project provides a method, telesimulation, to remotely connect teachers from UofT with EM trainees in Ethiopia to develop procedural skills. Telesimulation alleviates the time and cost of travel for teachers while still providing an excellent educational opportunity for trainees. Future directions of this project involve teaching more procedures (ie. pericardiocentesis and burr holes), performing a validation study of this teaching method in comparison to in-country teaching, and developing the site in Ethiopia as a centre to provide further telesimulation to other more remote sites.

Appendix 3a. Abstracts accepted to the Division of Emergency Medicine Faculty and Resident Research Day – Graduate Retention Context Analysis

Abstract Title: Examining the current health care milieu of the new Ethiopian emergency medicine system: A qualitative analysis of Ethiopian Emergency Medicine Residents

Author(s): Joel R. Lockwood, MD¹, Aklilu Azahj, MD², Sara Berman, MPH³, James Maskalyk, MD¹, James¹, Megan Landes, MD MSc¹,³,⁴.

¹Division of Emergency Medicine, Department of Medicine, University of Toronto
²Faculty of Medicine, Addis Ababa University, Addis Ababa, Ethiopia
³University Health Network, Department of Emergency Medicine, University of Toronto
⁴Department of Family and Community Medicine, University of Toronto

Abstract:
Introduction: Despite a significant burden of acute illness, infrastructure for emergency medical care remains underdeveloped in Ethiopia. The Toronto-Addis Ababa Academic Collaboration in Emergency Medicine (TAAAC-EM) is a collaborative effort tasked to address the design and implementation of the first Ethiopian Emergency Medicine (EM) training program. This developing system represents a complex health care milieu that will require support from many stakeholders including governmental organizations, hospital administration, and the current residents in order to build an efficient and equitable system. Graduate retention within this specialty and within Ethiopia will depend on the outcomes of this ongoing development. The objective of this study was to improve understanding the health care and human resources issues that new graduates will be encountering as Ethiopia’s first emergency medicine physicians. Furthermore we wished to explore emergency medicine residents’ perceptions around factors affecting retention post graduation.

Methods: A series of semi-structured qualitative interviews were conducted with six Ethiopian EM residents in October 2012 in Addis Ababa. The interviews, after verbatim transcription, were imported into WEFT QDA software for coding and analysis. Themes and sub-themes were identified and thematic analysis of the data was conducted with the retrieved coded data, and a narrative account of the findings was developed.

Results: A number of retentive and repulsive influences were identified pertaining to graduate retention including: financial, workplace (including concerns about supplies and resources), career expectations and current unmet training needs. All residents expressed a desire to remain in Ethiopia, and the interviewees identified potential solutions to mitigate forces encouraging emigration, including financial incentives, improvements to workplace conditions and continuing education. Cohesive forces were identified including social familiarity and return to service agreements that encourage graduates to pursue careers within Ethiopia.

Conclusion: A number of ‘push’ and ‘pull’ forces were identified which may affect retention of the first cohorts of emergency medicine graduates in Ethiopia. Solutions regarding retention of emergency medical professionals must be specific for the Ethiopian context. The attitudes and opinion of other important stakeholders must be ascertained for a more complete understanding of the complex cultural milieu.
Appendix 3b. Abstracts accepted to the Division of Emergency Medicine Faculty and Resident Research Day - Telesimulation

Title: ‘Telesimulation’ in Emergency Medicine: connecting Canadian faculty to Ethiopian residents to provide procedural teaching

Emily Austin, MD
Megan Landes, MD, MSc.,
Nazanin Meshkat, MD, MHSc
Phil Miller, MD
James Maskalyk, MD
Allan Okrainec, MD
Aklilu Azazh, MD

Introduction: Simulation is a prevalent training method in Canada for teaching technical skills in emergency medicine. In resource-limited settings, challenges to simulation training often include a lack of equipment and/or qualified trainers. ‘Telesimulation’ is a low-cost and validated tool which remotely connects teachers with trainees using the internet and re-creates a similar environment to simulation in which the teacher and trainees are in the same room.

Methods: In 2010, Addis Ababa University launched Ethiopia’s first emergency medicine residency program, supported in part by the University of Toronto (UofT). In 2012, a telesimulation lab was setup at Tikur Anbessa Hospital, Addis Ababa, to connect with the existing lab at the Telemerty/Chang Telesimulation Centre in Toronto. Each telesimulation lab contains a simulation “box” where one set of webcams allow visualization of hands and procedural equipment, and a second direct visualization of each person using the simulator. Cameras are connected using Skype™ software, allowing both the instructor and trainee to simultaneously see the contents of each other’s simulation box and to communicate.

Results: To date we have developed and implemented a teaching module for central venous catheter insertion using telesimulation. Each course consists of a thirty-minute didactic lecture over Skype™, a one-hour skills training session with 2-3 participants, and 15 minutes per participant of 1:1 training with the instructor. Participants are evaluated at the end of the session for skill competency and provided feedback.

Conclusion: Telesimulation has been used to train surgeons worldwide in laparoscopy1 and in Botswana for pediatric intraosseous insertion.2 This project provides a method, telesimulation, to remotely connect teachers from UofT with EM trainees in Ethiopia to develop procedural skills. Telesimulation alleviates the time and cost of travel for teachers while still providing an excellent educational opportunity for trainees. Expansion of this project is underway to include more procedures (ie. pericardiocentesis and burr holes), a validation study of this teaching method in comparison to in-country teaching and
developing the site in Ethiopia as a centre for further telesimulation to other more remote sites.


Appendix 4a. Abstracts accepted to 2014 Department of Family and Community Medicine (DFCM) Conference – Graduate Retention Context Analysis

1) Title of Poster and Description

Examining graduate retention in a developing medical system: A qualitative analysis of Ethiopian Emergency Medicine Residents

ABSTRACT:

Introduction: Despite a significant burden of acute illness, infrastructure for emergency medical care remains in the early stages of development in Ethiopia. The Toronto-Addis Ababa Academic Collaboration in Emergency Medicine (TAAAC-EM) is a collaboration between Addis Ababa University and the University of Toronto to address the design and implementation of the first Ethiopian Emergency Medicine (EM) resident training program. The Collaboration seeks to build national emergency care capacity, but similar programs elsewhere have had unintended consequences on human resources migrations. The objective of this study was to improve understanding of the health care and human resources issues that new graduates will be encountering as Ethiopia’s first emergency medicine physicians. Furthermore, we wished to explore emergency medicine residents’ perspectives on factors affecting retention post graduation.

Methods: A series of semi-structured qualitative interviews were conducted with six Ethiopian EM residents in October 2012 in Addis Ababa. Two residents were interviewed from each academic year of the three-year program. The interviews, after verbatim transcription, were imported into Weft QDA software for coding and analysis. Themes and sub-themes were identified and thematic analysis of the data was conducted with the retrieved coded data. Finally, a narrative account of the findings was developed.

Results: A number of push and pull factors were identified pertaining to graduate retention including: financial, workplace (including concerns about supplies and resources), career expectations and current unmet training needs. All residents expressed a desire to remain in Ethiopia, and the interviewees identified potential solutions to mitigate forces encouraging emigration, including financial incentives, improvements to workplace conditions and continuing education. Cohesive forces were identified including social familiarity and return to service agreements that encourage graduates to pursue careers within Ethiopia.

Conclusion: A number of ‘push’ and ‘pull’ forces were identified which may affect retention of the first cohorts of emergency medicine graduates in Ethiopia. Solutions regarding retention of emergency medical professionals must be specific for the Ethiopian context. The attitudes and opinion of other important stakeholders, including politicians and health care administrators, must be ascertained for a more complete understanding of the human resources context for this developing emergency medicine system.
2) Principle Author & Title

Joel Lockwood, PGY4, Department of Medicine

3) Co-Author(s) & Title

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M. Landes, Assistant Professor, Division of Emergency Medicine, Department of Family and Community Medicine, University of Toronto, Toronto, Ontario, CANADA;

4) Name of Presenter & Title

Megan Landes, Assistant Professor, DFCM

The Toronto - Addis Ababa Academic Collaboration: Emergency Medicine

James Maskalyk MD $^{1,3}$
Megan Landes MD$^{2,4}$

On behalf of the Toronto Addis Ababa Academic Collaboration in Emergency Medicine Working Group

Word Count: 1362

Author Affiliations: 1. St. Michael’s Hospital, University of Toronto, Toronto, Canada 2. University Health Network, University of Toronto, Toronto, Canada 3. Department of Medicine, University of Toronto  4. Department of Family and Community Medicine, University of Toronto

Conflicts of interest: none declared
Ethiopia has a long history of being a strong and independent country, and of rich support of its institutions of higher education. In recent years, investment in the educational sector has expanded as Ethiopia embarked on an ambitious plan to improve educational opportunities, particularly at the postgraduate level\(^1\). Enrollment in existing universities has greatly increased, as has construction of new ones across the country. By directing proportionally more of the country’s GDP towards higher education, it hopes to extend the academic possibilities available in the country. One of the barriers to this, in the past, has been a diaspora of its trained professionals, a risk increased by training outside of the country\(^2\). By improving access within its own borders, Ethiopia hopes to reverse this tide, and make a strong cohort of academic teachers with the necessary investigative and pedagogical skills to inspire a new generation of Ethiopian students.

Addis Ababa University, as the country’s oldest higher learning institution, has been entrusted with the critical task of providing qualified faculty members to the fast growing national demand\(^3\). It has, as one of its objectives, to graduate 5000 PhD’s in the next decade (66 have been graduated in the past 30), and establish 14 centres of excellence in research and teaching\(^4\). Their need for post-graduate health care professionals was given a similar, high priority, and an effort was made to increase the number of mid level health professionals; nurses and health officers, as well as medical subspecialists. The challenge, as is the case in much of sub-Saharan Africa, is an insufficient number of both clinicians and faculty\(^5\). In 2006, there were 638 physicians practicing in Ethiopia’s public sector\(^6\), in

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1 A Plan for Accelerated and Sustained Development to End Poverty (PASDEP)’.
comparison to 2810 general physicians alone in Toronto, Canada\textsuperscript{7}.

Toronto and Addis Ababa are both the largest city in their country, and host to the largest university. In 2008, a high level academic delegation from Addis Ababa University (AAU), Ethiopia visited the University of Toronto (UofT) to request an expanded educational collaboration between AAU and the U of T, similar to one developed by the U of T's Department of Psychiatry (the Toronto-Addis Ababa Psychiatry Project (TAAPP)) that has increased the number of Ethiopian psychiatrists from nine to 34 in the past five years\textsuperscript{8}. This endeavor allowed for a self-sustaining mass of educators who are currently engaged in spreading psychiatric care from the capital, throughout the country, and have made Ethiopia a pre-eminent site for psychiatric teaching and research in Africa. Most notably, TAAPP has a 97% retention rate in-country to date, thus mitigating the effect of brain drain on the health sector\textsuperscript{9}. AAU requested similar help from the broader UofT medical community to enhance existing residency training programs, and to develop new ones.

In response to this request, The Toronto Addis Ababa Academic Collaboration (TAAAC) was formed, bringing together leaders from the many different divisions and departments in the Faculty of Medicine. The Toronto-Addis Ababa Academic Collaboration in Emergency Medicine (TAAAC-EM) was the first division to respond to the challenge, and joined the University of Wisconsin in assisting AAU and Black Lion Hospital begin the long task of developing an emergency specialty. After a series of exchanges that included bilateral site visits in 2008 and 2009, TAAAC-EM carried out its first formal teaching trip in October 2010. At its two year anniversary, in October 2012, it will have delivered seven month long teaching trips, 19 person months of dedicated, in-country training of emergency professionals, both postgraduate physicians and nurses. The trips, one month in duration, are generously supported by Addis Ababa University, and are made up of two to three traveling emergency medicine faculty from

\begin{itemize}
  \item \textsuperscript{6} Berhan Y. Medical doctors profile in Ethiopia: production, attrition and retention. In memory of 100- years Ethiopian modern medicine & the new Ethiopian millennium. Ethio Med J. 2008 Jan;46 Suppl 1:1-77.
  \item \textsuperscript{9} Personal communication, Dr. Clare Pain, TAAAP, 2012
\end{itemize}
the University of Toronto, a senior level postgraduate EM resident from UofT and an emergency nurse, who do bedside teaching in the emergency department, supplemented this with didactic lectures and skills session. Monthly distance video-conferences with the postgraduates, research teaching and support, and individual career mentoring help strengthen the partnership. Three operational research studies have been initiated with Ethiopian partners, and are focused on improving emergency medicine knowledge and performance at Black Lion Hospital. Further expansion into ultrasound training, pediatric emergency medicine, and nursing education has been accomplished with great success. Integrating simulation centres between the two universities is in progress, and will greatly enhance the opportunity for distance education to supplement months when there are no emergency teachers in the country.

There are particular, unique strengths to TAAAC-EM. Importantly, as the name implies, it is a true collaboration. This contrasts with more typical engagements between north-south partners, because it directly responds to the expressed wishes of the host country. Traditionally, conditions of engagement have been determined not by the host, but by the partner institution who, having resources, decides on both the means and measures of success. In the case of TAAAC-EM, AAU determines the conditions of the engagement, and provides administrative and logistical support. Secondly, by supporting the endeavor financially, AAU has created a unique model for north-south endeavors, whereby each party is a contributing member. This creates a positive environment for accountability and allows for more equitable sharing of responsibility. Third, given the U of T’s history in Ethiopia, through TAAAP and continuing with TAAAC-EM, the relationship between the two institutions is one built over years, on trust and mutual respect. This ensures not only that the engagement will outlast funding cycles, but means that it is likely to spread over the years to involve different divisions, departments, and even faculties. Already the Faculties of Dentistry, Engineering, and History are all determining how best to replicate the successes of the collaboration. Lastly, the endeavor is a true exchange, both of medicine and of culture. It provides an opportunity for U of T faculty to teach the best of what they know to a capable audience ready to use what they learn to maximum effect. This act transforms both parties. The trainees at AAU are inspired by their practice and deliver better care to their countrymen who so dearly need it. Further, having received such dedicated attention, they are more qualified to continue to teach what they’ve learned to colleagues and future generations, improving their chance of remaining affiliated with the University and in contact with the public system. It also allows postgraduates to identify

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opportunities available in this new specialty so that it might grow, and provide employment opportunities as it does.

Similarly, the effect on the Toronto volunteer is as profound. There are no opportunities in Canada that allow Canadian Faculty to engage internationally in this manner, and each of the delegates thus far has been positively impacted by the experience, and inspired by the context. To date, there have been eleven faculty to travel to Addis for a month, and each has expressed their keen desire to return. Senior postgraduates from the U of T, who accompany faculty on most trips and share some teaching responsibilities, consistently site the rotation as one of the best in their training.

The World Health Organization (WHO), in an effort to improve health systems and address the migration of health professionals from low-resource countries, urges the countries who have benefited from it to “to support the strengthening of health systems, in particular human resources development, in the countries of origin”\textsuperscript{11}. TAAAC-EM does this by providing access to one of Canada’s most valuable resources: its wealth of talented teachers in a true collaboration built on mutual respect, working towards common goals. With it, it is possible for Addis Ababa University, and Ethiopia, to emerge as world leaders in the practice and research of emergency medicine in low-resource settings, and to serve as an example for other countries who struggle against similar constraints to build a strong and effective system of health provision.

Acknowledgements: The TAAAC-EM working group is composed of five core members, the two authors, and Drs Cheryl Hunchak, Raghu Venugopal, and Lisa Puchalski-Ritchie. Each has been pivotal in making this endeavor a success. The AAU Emergency Taskforce, generously supported by the University of Wisconsin, has labored for many years to make an excellent teaching environment, and Drs Sisay Teklu, Aklilu Azaj, Assefu Woldetsadik, among others, are to be credited.

Salem’no team,
I wanted to say that Dave and I made it back safely on the same flight from Addis, with even
enough power left in the laptop to watch a 4th movie! (we haven’t heard from Shobana - she’s
coming next week)

As far as the "rotation" is concerned, honestly I wish I could complete the rest of my residency
there... not only that every case is a chapter in Rosen's, but the full experience was so rewarding.

I wrote the following paragraphs in my POWER rotation evaluation so it is in the official record:

"This rotation was invaluable to me both as a physician and a person. Working at AAU Black Lion
Hospital, taught me about humility, compassion and collaboration like no other rotation.

Beyond the enormous case-mix and acuity of patients, the Black Lion ED offers an opportunity to
teach non-technical skills to these "neo-nascent" EM residents, such as team building, giving
feedback, inter-professional care, advocating and many more. We try to role model aspects of care
that go above emergency medicine, at this exact task was teaching me at the same time about how
to be a better EM resident and physician.

The residents and interns there are probably what makes this experience most rewarding. It would
be very difficult to teach and provide care in that environment, but some of the young man and
women working at Black Lion make it very easy, pleasant, and exciting everyday!

The sum total of this experience cannot be reduced to a paragraph; it wouldn't do justice to rate this
elective as simply "5/5" because working along side the AAU residents and getting their
appreciation and thirst for knowledge is not quantifiable in any form. It was an experience of a
lifetime!"

Looking forward to our official debrief!

Thank you for making it awesome,
Max

P.S. Megan - I got your cell! Rest - tablets project still hanging there, waiting for final reply from
Kidest. The residents are very excited about the possibility.
Appendix 6b. Unsolicited letter from University of Manitoba resident (March 2014)

Aaron Webb is a PGY-3 resident in Emergency Medicine at the University of Manitoba. He arranged his own clinical elective at Black Lion Hospital for February 2013 and was therefore there at the same time that a TAAAC-EM team was there and informally worked with the TAAAC-EM team. This was an unsolicited email that he sent to the team upon his return home.

From: Aaron Webb <umwebbam@myumanitoba.ca>
Date: March 25, 2014 at 11:01:17 AM EDT
To: David MacKinnon <davemack9@gmail.com>, Ross Claybo <rclaybo@hotmail.com>, "Dr. Andrew McDonald" <Andrew.McDonald@sunnybrook.ca>, Anne Aspler <anneaspler@gmail.com>
Subject: Thanks from Winnipeg

Hello Team TAAAC,

I've had some time to readjust to life in Winnipeg and reflect on my time in Ethiopia. Besides deciding that I should have stayed there due to the unseasonably cold spring we're continuing to have, it was a fantastic trip. I wanted to thank all of you for helping to make it such a great experience. It was very inspiring seeing the relationship fostered between the AAU residents and TAAAC, and it has definitely changed my perception of how I would like to get involved with international medicine. Thanks for welcoming me into your group and letting me participate in a meaningful way. It was also so nice to have people to socialize with after work.

I gave a presentation to my residency group on Ethiopian health care and some of the interesting cases I saw while I was there. I've kept notes on most of the cases and have a limited amount of photos of diagnostic imaging. If anyone is interested in a copy, I'd be happy to share them.

Things are going well at home. We had our 2nd trimester ultrasound last week, and everything seems to be developing as it should be.

I had a wonderful hike in the Simien mountains at the end of the trip - I added 2 photos from along the route.

Thanks again for everything last month. Keep in touch, and maybe sometime in the future we can collaborate on a TAAAC expansion elsewhere in the country or the continent!

Aaron
Rotation Effectiveness Score

Emergency Medicine (Int Med)

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Rotation Effectiveness Score (max=10) 9.89 9.89 9.89

* Questions included in Rotation Effectiveness Score calculation

Comments

This evaluation is for the TAAAC-EM elective I participated in in Addis Ababa Ethiopia during October 2012.

Great experience seeing very sick patients in an ED in a resource limited setting. Great to work alongside Ethiopian colleagues who often really impressed me. A learning experience I couldn't have here in Toronto.

This rotation was invaluable to me both as a physician and a person. Working at AAU Black Lion Hospital, taught me about humility, compassion and collaboration like no other rotation. Beyond the enormous case-mix and acuity of patients, the Black Lion ED offers an opportunity to teach non-technical skills to these "neo-nascent" EM residents, such as team building, giving feedback, inter-professional care, advocating and many more. We try to role model aspects of care that go above emergency medicine, at this exact task was teaching me at the same time about how to be a better EM resident and physician. The residents and interns there are probably what makes this experience so rewarding. It would be very difficult to teach and provide care in that environment, but some of the young man and women working at Black Lion make it very easy, pleasant, and exciting everyday! The sum total of this experience cannot be reduced to a paragraph; it wouldn't do justice to rate this elective as simply "5/5" because working along side the AAU residents and getting their appreciation and thirst for knowledge is not quantifiable in any form. It was an experience of a lifetime!
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**Rotation Effectiveness Score (max=10)**

10.00 10.00 10.00

* Questions included in Rotation Effectiveness Score calculation

**Comments**

The Ethiopia rotation was one of the best in residency. Incredible cases, very motivated residents in the emergency department, and very different work environment than in Canada. Learned a huge amount. Very grateful for opportunity.
The *Toronto Addis Ababa Academic Collaboration in Emergency Medicine* (TAAAC-EM) is a collaboration between the University of Toronto (U of T) and our Ethiopian partners at Addis Ababa University (AAU) to support the establishment of the country's first Emergency Medicine Residency Program.

*TAAAC-EM* sends visiting faculty to teach and clinically mentor Ethiopian EM residents four times a year. Teaching trips cover a longitudinal, three-year curriculum through didactic teaching sessions, practical seminars, and bedside clinical supervision. Each trip consists of three U of T Faculty, one postgraduate resident and an emergency medicine nurse.

*TAAAC-EM* also supports our Ethiopian partners through curriculum design and development, operational research development and support, and a variety of innovative educational initiatives including videoconferencing, hand-held educational device program, online mentorship, and monitoring and evaluation.

With its first formal teaching trip in 2010, the 10-year goal of TAAAC-EM is to assist in the graduation of a self-sustaining critical mass of Emergency Medicine leaders at AAU who will continue to train future generations of Ethiopians, and spread emergency medicine expertise throughout the country and East Africa.
**TAAAC-EM Highlights of 2012**

**Ethiopia Society of Emergency Practitioners (ESEP)**
- TAAAC-EM supported the establishment of ESEP, and in October, TAAAC-EM delegates attended the inaugural meeting of ESEP in Addis Ababa. Over 350 emergency professionals attended the 2-day conference. Drs. Megan Landes, Cheryl Hunchak, and Anil Chopra were invited lecturers and Dr. James Maskalyk participated in a symposium with the Ministry of Health and key stakeholders on graduate retention.

**AAU EM Residents**
- 100% pass rate for first year exams in October 2012!
- 6 additional residents were accepted into the 1st year class. 17 residents are now enrolled in the AAU EM residency program. Upon graduation, approximately half of them will leave to sponsoring sites outside of Addis Ababa to develop emergency medicine there.

**Curriculum**
- TAAAC-EM continues to develop curriculum streams for clinical emergency medicine, clinical epidemiology, and health administration. These lectures are peer reviewed and being archived openly online for future use.
- ED Ultrasound Curriculum was developed for Black Lion Hospital. Drs. Fasika Aklilu and Maja Stachura spent two months in Addis Ababa working with the students on ultrasound techniques and further developing a context-appropriate curriculum.

**Examinations**
- Drs. Megan Landes and James Maskalyk, with the University of Wisconsin, participated in development of exams that are necessary to pass from first year of the residency into second, and assisted in conducting the exam in October. 100% of residents graduated into second year.

**Adult EM Teaching Months in Addis: February, May, and October**
- Three adult emergency medicine teaching months were successfully completed! Thanks to the following faculty for volunteering their time: Drs. Andrew Macdonald, Dominic Shelton, Kim deSouza, Raghu Venugopal, Nazanin Meshkat, David Ng, Fasika Aklilu, Megan Landes, Cheryl Hunchak and James Maskalyk

**Continued Integration of Emergency Nursing from U of T**
- Vanessa Wright, NP, developed and implemented a nursing leadership course and continued nursing mentorship in the ED. Thanks to Colleen Dockery, RN, from SMH for supporting the nursing program in October!

**Integration of Pediatric Emergency Medicine Teaching with Faculty from the Department of Pediatrics (Hospital for Sick Children)**
- Dr. Dennis Scolnik led a pediatric-specific teaching trip in June. The pediatric focus was very well received and will become an annual trip in May of each year. The first teaching delegates were Drs. Dennis Scolnik and Tanya Solano.

**Senior Resident Elective**
- The elective for a senior U of T resident on each teaching trip is unique in its ability to provide a structured and supervised clinical global health educational opportunity in a low-resource setting. Three U of T postgraduate residents completed successful rotations in 2012 at Black Lion Hospital with our teaching teams. All were integral parts of the team. Thank you to: Lucas Chartier, Adam Kaufman, and Joel Lockwood for their excellent contributions!
- Dr. Dave MacKinnon has joined the TAAAC-EM working group as the PGY Coordinator Co-lead.
Research

• With funding support from the UHN ED Practice Plan Pilot Grant, TAAAC-EM successfully launched 3 operational research projects at Black Lion Hospital
  • Clinical outcomes of head trauma in the Black Lion ED
  • All-cause early mortality in the Black Lion ED
  • Evaluation of a bedside ultrasound teaching curriculum in the Black Lion ED

Telesimulation teaching was launched in partnership with the UHN Temerty/Chang Telesimulation Centre

• TAAAC-EM is now able to provide weekly case conference rounds for the AAU residents even when we are not in Ethiopia on a clear video connection
• Procedural teaching has begun with models in Addis Ababa and Toronto via telesimulation for EZIO, CVC insertion, burr holes and pericardiocentesis. Many thanks to Drs. Phil Miller, Kim deSouza and Emily Austin for their assistance in this process!

Grants and Funding Support

• In April, TAAAC-EM received a grant from the International Development Research Council entitled (IDRC): “Partnering to Establish Emergency Medicine in Ethiopia”

• In September, the DFCM and DoM announced their commitment to support TAAAC-EM through 2015. Many thanks to Drs. Lynn Wilson, Wendy Levinson, Michael Schull and Eric Letovsky for their ongoing support of this project!

Project Manager

• In June, TAAAC-EM hired a Project Manager, Sara Berman, MPH. Sara has five years of field experience in international health and development with her last position as a Research and Program Advisor in Lesotho, Southern Africa.

Conferences

• Co-directors Drs. Megan Landes and James Maskalyk were invited to present to the Canadian Association of Emergency Physicians (CAEP) Annual Convention in June, 2012. The title of the lecture was “Developing an emergency medicine residency program in Ethiopia”
Upcoming Plans for 2013 Include:

- **Four Teaching trips:** 3 adult emergency focused and 1 pediatric emergency
- **Resident Rotation:** Four senior residents will be given the opportunity to pursue an interest in global emergency medicine
- **Nursing:** first nursing leadership course scheduled for completion in June
- **Long-term volunteer:** A full-time long-term volunteer acting as a senior visiting professor in-country (rotating 3 month blocks). Dr. James Maskalyk to launch the program in March.
- **Research:** Completion of operational studies and publication
- **Certifying Exams:** TAAAC-EM will work with the University of Wisconsin, AAU, and local regional partners to develop context-appropriate exam questions for the country's first certifying exams
- **ESEP 2013:** All are welcome to the second meeting of ESEP in October 2013!
- **Curriculum:** The three-year curriculum will be complete by the Spring 2013. It has been developed by curriculum co-directors Drs. Nazanin Meshkat and Cheryl Hunchak, based on a rotating schedule for the junior and senior residents over their three years of residency.

Thank you for your continued support!

TAAAC-EM Working Group:

- **Megan Landes, MD** Co-Director, UHN ED, Dept. of Family and Community Medicine (DFCM)
- **Cheryl Hunchak, MD** Curriculum Co-Lead, UHN/MSH ED, DFCM
- **Raghu Venugopal, MD** Postgraduate Coordinator, UHN ED, DoM
- **Lisa Puchalski-Ritchie, MD** Research Coordinator, UHN ED, DoM
- **Sara Berman, MPH** Program Manager
- **Jeremy Rose** EM Resident Representative, DoM

**James Maskalyk, MD** Co-Director, SMH ED, Department of Medicine (DoM)

**Nazanin Meshkat, MD** Curriculum Co-Lead, UHN ED, DoM

**David MacKinnon, MD** Postgraduate Coordinator, SMH ED, DFCM

**Dennis Scolnik, MD** Pediatrics Lead, Hospital for Sick Children ED, Department of Pediatrics, U of T

**Vanessa Wright, NP** EM Nursing Lead, School of Nursing, U of T

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**For more information:**

TAAAC Website
[www.taaac.com](http://www.taaac.com)

Global Health Emergency Medicine
[www.ghem.ca](http://www.ghem.ca)

**Contact:**

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[taaac.em@gmail.com](mailto:taaac.em@gmail.com)

Sara Berman
[sberman@ghem](mailto:sberman@ghem)
The Toronto Addis Ababa Academic Collaboration in Emergency Medicine (TAAAC-EM) is an effort that involves the University of Toronto (U of T) and Ethiopian partners at Addis Ababa University (AAU). Established in 2010, it’s intention is to foster the development of the country’s first Emergency Medicine (EM) Residency Program, and support the growth of the specialty. This commitment has led to the graduation of the country’s first emergency physicians in October 2013. This next year, we will explore opportunities for EM development outside of Addis Ababa, as well as developing the professional skills of the newly graduated faculty.

TAAAC-EM sends visiting faculty to teach and clinically mentor Ethiopian EM residents 3-4 times a year. Teaching trips cover a longitudinal, three-year curriculum through didactic teaching sessions, practical seminars, and bedside clinical supervision. Each trip consists of three U of T Faculty, one postgraduate resident and when possible, an emergency nurse.

TAAAC-EM also supports our Ethiopian partners through curriculum design and development, operational research and support, and a variety of innovative educational initiatives including videoconferencing, hand-held educational device program, online mentorship, and monitoring and evaluation. In 2013, TAAAC-EM members drafted and conducted certifying exams, and conducted a distance “administrative” course to help prepare the new graduates for their new responsibilities.

With its first formal teaching trip in 2010, the 10-year goal of TAAAC-EM is to assist in the graduation of a self-sustaining critical mass of Emergency Medicine leaders at AAU who will continue to train future generations of Ethiopians, and spread emergency medicine expertise throughout the country and East Africa.
TAAAC-EM Highlights of 2013

Graduation of the First Cohort of Ethiopian Emergency Physicians
• In October 2013, a team of Toronto teachers, with Wisconsin partners, developed and delivered Ethiopia’s first certifying exams. The success rate was 100%, and the graduation ceremony was attended by our delegates, AAU faculty, the President of Addis Ababa University, and Deputy Minister of Health.
• As part of their graduation, the AAU graduates developed, administered and presented clinical research projects supervised by UofT mentors. Topics included: ED management of DKA, incidence and clinical management of hemorrhagic stroke, and pattern of vertebral fractures in Black Lion ED.

Long-Term Volunteer
• Dr. James Maskalyk was TAAAC-EM’s, and AAU’s, first long-term volunteer from Feb to June, with support from the U of T, AAU, CUSO - International, and the Royal College. During this time, he functioned as a visiting professor in EM as well as supported activity in the post-graduate training program, the emergency department, and lectured at the University. He also worked with AAU partners to develop a Black Lion Hospital Foundation, something that is hoped to emerge in 2014.

Inter-University Memorandum of Understanding (MOU)
• In November 2013, Dr. Admasu Tsegaye, President of Addis Ababa University and Ms. Judith Wolfson, Vice-President, University Relations, University of Toronto signed a historic MOU between the two institutions.

AAU EM Residents
• We continued our success with the PGY-1 exams (a certifying requirement), having 100% of residents pass for the 3rd consecutive year.
• One EM resident won a scholarship to the South African conference in Emergency Medicine in Cape Town for her participation in a multi-site ultrasound nerve-block study.
• All residents were given focused nerve block training: brachial, femoral, popliteal. It has greatly improved analgesia in the ED.

Curriculum
• TAAAC-EM continues to develop curriculum streams for clinical emergency medicine, clinical epidemiology, and health administration. These lectures are peer reviewed and being archived openly online for future use.
• Dr. Margaret Salmon brought both ultrasound, and nerve-block ultrasound training to the AAU residents as part of a multi-site study, that is also being administered in the Democratic Republic of Congo and Tanzania.

Examinations
• Many former TAAAC-EM delegates, with the University of Wisconsin, participated in development of exams that are necessary to pass from first year of the residency into second, as well as the country’s first certifying exams. Drs Natalie Wolpert and James Maskalyk assisted in conducting the exam in October.

Adult EM Teaching Months in Addis: February, June, and October
& Paediatric EM Teaching Month in Addis: May
• Three adult emergency medicine teaching months, and one pediatric, were successfully completed! Thanks to the following faculty for volunteering their time: David MacKinnon, Shobana Ananth, Gabrielle Magnall, Dennis Scolnik, Ross Claybo, Wendy Lai, and Natalie Wolpert.
Senior Resident Elective
• The elective for a senior U of T resident on each teaching trip is unique in its ability to provide a structured and supervised clinical global health educational opportunity in a low-resource setting. Four U of T post-graduate residents completed successful rotations in 2013 at Black Lion Hospital with our teaching teams. All were integral parts of the team. Thank you to: Maxim Ben-Yakov, Julia Wytsma, Anna MacDonald, and Emily Austin.

Research
• The following studies were completed, and papers are in the process of being drafted
  • Clinical outcomes of head trauma in the Black Lion ED
  • All-cause early mortality in the Black Lion ED
  • Evaluation of a bedside ultrasound teaching curriculum in the Black Lion ED
  • Using telesimulation to teach emergency medicine procedures
• Four abstracts were submitted to CAEP 2014

Telesimulation Administration Course
• TAAAC-EM provided 6 lectures for the graduating and senior residents on topics such as: Setting up an ED where one does not exist, Leadership/Advocacy and Disaster planning. Thank you to: Barry McLellan, Doug Sinclair, Glen Bandiera, Anil Chopra, Sam Sabbah and Laurie Mazurik.

Grants and Funding Support
• TAAAC-EM won a Grand Challenges Canada “Stars in Global Health” Phase I - grant! It will allow us to expand research opportunities, as well as contribute to Ethiopia’s vision of creating residency programs outside of Addis Ababa.

Project Manager
• Elayna Fremes joined TAAAC-EM in late 2013 to fill in for Sara Berman’s maternity leave

Upcoming Plans for 2014 Include:
• Three Teaching trips: 3 adult emergency trips in February, May, October.
• Resident Rotation: Three senior residents, in both Canadian EM programs, will be given the opportunity to pursue an interest in global emergency medicine.
• TAAAC-EM expansion - in May, Dr. Maskalyk will travel to Hawassa University, to assess the possibility of developing and supporting a similar program in this large city.
• Trauma Registry - develop a trauma database, capturing important information on the demographics and pattern of injury of trauma patients at Black Lion, and sharing it with Tanzania and the Congo, as a first multicentre trauma registry effort to address the high burden of injury.
• African Federation of Emergency Medicine (AFEM) Conference - October 2014 - Addis Ababa, with the help of TAAAC-EM and the University of Wisconsin, will host the continent’s second conference on Emergency Medicine. All past and future U of T delegates are encouraged to come!
• Black Lion Hospital Foundation - The final stages of the hospital foundation will be complete, and should coincide with breaking the ground on a new emergency department at Black Lion Hospital, which will follow with construction of a new hospital in 2015 or 2016.
• AAU Faculty Development - TAAAC-EM will support the professional development of its new graduates, both academically and clinically, such that they can begin to assume the necessary skills to advance EM as teachers and advocates, eventually assuming full responsibility to take Ethiopian EM in new directions.
Thank you for your continued support!

TAAAC-EM Working Group

Megan Landes, MD
Co-Director
UHN ED, Dept. of Family and Community Medicine (DFCM)

Cheryl Hunchak, MD
Curriculum Coordinator, UHN/MSH ED, DFCM

Raghu Venugopal, MD
Postgraduate Coordinator, UHN ED, DoM

Lisa Puchalski-Ritchie, MD
Research Coordinator, UHN ED, DoM

Sara Berman, MPH
Program Manager (on maternity leave)

Emily Austin
EM Resident Representative, DoM

James Maskalyk, MD
Co-Director
SMH ED, Department of Medicine (DoM)

David MacKinnon, MD
Postgraduate Coordinator, SMH ED, DFCM

Dennis Scolnik, MD
Pediatrics Lead, Hospital for Sick Children ED
Department of Pediatrics, U of T

Vanessa Wright, NP
EM Nursing Lead, School of Nursing, U of T

Elayna Fremes
Program Coordinator
(Dec 2013 – June 2014)

For More Information

TAAAC Website
www.taaac.com

Global Health Emergency Medicine
www.ghem.ca

Excerpt from Dr. James Maskalyk’s commencement speech to 2013’s first EM graduates

“I know you think emergency medicine is about what you know, the skills we’ve helped you learn on resuscitation, ultrasound, reading electrocardiograms. Maybe you think it is about decision making in times of crisis, or how to manage many things at once with grace and compassion. Or you might even think it is about research that allows you to do better medicine, or advocate for societal change.

It’s not. It’s about a room that never closes. It might be the only room in the city that is open twenty four hours per day, seven days per week, Eid, Timket, Easter too, and anyone can enter it, rich or poor, no one is turned away, and in that room, they will be asked “how can we help you” by someone who means it, with nothing to sell, someone with no other interest except listening to the answer and working to satisfy it, no matter the difficulty.

What will you do with that rooms sacred space? That place where you make no distinction between man, woman, tribe, country, but see the sickest first, then everyone else in the order they come. Take it throughout the country, let it put the young men and women who are knocked down firmly back on their feet so they can help pull your entire nation towards easier days? Maybe take it to Sudan, Somalia, let the peace it promises do its work, and watch that space grow….”

(Text of the full speech can be found here:
http://www.jamesmaskalyk.com/2013/10/17/graduation-speech-to-ethiopias-first-emergency-doctors/)
Welcome to GHEMA

We are a group of emergency health care providers dedicated to improving the health of individuals in resource poor settings by the empowerment of local populations through clinical practice, education, research, and advocacy.

About Us

We are a group of emergency health care providers dedicated to improving the health of individuals in resource poor settings by the empowerment of local populations through clinical practice, education, research, and advocacy.

Projects

Through collaboration and inclusivity GHEM projects integrate education, clinical work, and research with a mandate of achieving equitable access to effective emergency care for all those who require it in low resource countries.

News

» Dr. Venugopal blogs from Chad

» SASA Conference
Teaching Modules

Welcome to the GHEM Teaching Modules!
The Teaching Modules provide:
A comprehensive pool of modules developed by experts in emergency medicine and global health
Low-resource setting appropriate modules
High quality modules: ALL our modules are peer reviewed by experts, including our pharmacist editor (Mark McIntyre), and published under editorial review. Click here for a list of our contributors.
Low-bandwidth PowerPoint modules for easy download
Open access modules that can be used and adapted by emergency medicine teachers around the globe to fit the context of their country of practice under a non-commercial, attribution, and share-a-like Creative Commons License (click here for the license and definitions).

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Drs. Nazanin Meshkat and Cheryl Hunchak
Editors-in-Chief

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