

169 patients aged 18-35 years, and 202 patients over 35 years. The rates of positive urine culture, in the under 35 and over 35 population respectively, were 5% and 42% ($p < .0001$). The rates of positive NAAT were 10% and 4% ($p = .43$). Ultrasound was performed in 252 patients; 160 (63%) were positive. There was no significant difference in the rates of positive urine culture or NAAT between the ultrasound-positive patients and patients who had negative, indeterminate, or no ultrasound. **Conclusion:** Our findings are not concordant with clinical practice guidelines. While the over 35 age group had a statistically higher rate of positive urine culture, the rate of positive NAAT was not different from the younger group. Both urine culture and NAAT are usually negative in the under 35 group. Positive culture rates are not higher in the subgroup of ultrasound "proven" epididymitis. Physicians should exercise clinical judgement in selecting empiric antibiotics for patients with epididymitis; basing choice on patient age alone may not be appropriate. **Keywords:** epididymitis, sexually transmitted infections (STI), antibiotic

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Sentinel visits in emergency department patients with diabetes mellitus as a warning sign for hyperglycemic emergencies

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Introduction: Patients with poorly controlled diabetes mellitus (DM) often visit the emergency department (ED) for management of hyperglycemia, diabetic ketoacidosis (DKA) and hyperosmolar hyperglycemic state (HHS). Many of these patients have a "sentinel" ED visit for other medical conditions prior to their hyperglycemic visit, which may worsen their glucose control. The objective of this study was to describe the epidemiology and outcomes of patients presenting with a sentinel ED visit prior to their visit for a hyperglycemic emergency. **Methods:** This was a health records review of patients ≥ 18 years presenting to one of four tertiary care EDs (combined annual census 300,000) with a discharge diagnosis of DM, hyperglycemia, DKA or HHS in a one-year period. Visits for hypoglycemia were excluded. Trained research personnel collected data from medical records including demographics, clinical history and results of investigations. Electronic charts were reviewed to determine if the patient came to the ED within the prior 14 days of their index hyperglycemia visit, and the details and outcomes surrounding both visits. Descriptive statistics were used where appropriate to summarize the data. **Results:** From January-December 2014, 609 ED visits had a discharge diagnosis of hyperglycemia. Mean (SD) age was 50.4 (19.5) years, and 343 (56.3%) were male. 101/609 visitors (16.6%) had an ED presentation within the previous 14 days from their hyperglycemia visit. 71 (70.3%) of these were discharged from this initial visit and 49/71 (69.0%) were discharged either without their blood glucose checked or with an elevated blood glucose (>11.0 mmol/L). Of the sentinel visits, 58 (57.4%) were for hyperglycemia and 15 (14.9%) were for infection. Upon returning to the ED, 45/101 (44.6%) visitors were subsequently admitted for management of severe hyperglycemia, DKA or HHS. **Conclusion:** This unique ED-based study demonstrates that patients with DM presenting with hyperglycemia or infection often return and may ultimately require admission. Clinicians should be vigilant in checking blood glucose when these patients present to the ED and provide clear discharge instructions for follow-up and glucose management. Future research should focus on improving glycemic control in these patients in order to prevent further hyperglycemic emergencies from occurring. **Keywords:** diabetes, adverse events, sentinel visits

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HIV point of care testing by community paramedics in a vulnerable population: a pilot study

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Introduction: Literature suggests that up to 25% of people with HIV in North America are unaware of their status and are at risk to transmit the virus unknowingly. A high proportion of HIV patients are diagnosed when the disease is more advanced, with CD4 counts < 200 . This study examined the rates of HIV testing, detection, and treatment of clients at an inner city shelter and detoxification centre after the introduction of a point of care testing (POCT) program by on-site community paramedics (CP). **Methods:** In 2013, in collaboration with a regional HIV program, CP received training and instituted an HIV POCT program and post-test counselling initiative. A retrospective electronic database review from October 16, 2013 to October 15, 2014 of adult patients who received testing was performed. Demographic and testing details of each patient encounter were abstracted and select variables were compared to a historic population who received POC HIV testing at an inner city emergency department (ED) in the same city. **Results:** 1,207 HIV POC tests were performed on 997 patients during the pilot. 57% of the patients tested were less than 40 years of age (range 18-73 years) compared to 55% in the historic ED population. A total of 9 reactive cases were identified in the study population including 3 new cases, 5 previously known cases, and 1 false reactive result. The mean age of the new cases was 47 years, vs 44 in the historical control. All 3 new cases were referred to a local HIV clinic for further care and treatment. New HIV cases represented 0.25% of total tests performed, which is less than the expected prevalence rate of 1% for this population, as well as the rate of 1.4% found in the ED population. **Conclusion:** Despite lower than expected reactive rates, the large scale implementation of a CP HIV POCT program in an inner city shelter and detoxification centre is feasible. All patients with new reactive tests were immediately connected to care. Future research will focus on risk factors and barriers to testing. **Keywords:** community paramedicine, human immunodeficiency virus (HIV), point of care

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Designing better continuing education for rural emergency physicians

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Introduction / Innovation Concept: Rural emergency physicians often work alone, and identify higher needs for continuing professional development in emergency medicine (EM) than urban doctors. We have offered the Community Emergency Medicine Outreach program (CEMO) at 12 rural hospitals in Eastern Ontario since 2009. Each emergency team selects topics in Adult EM for discussion at half-day outreach sessions at their local hospital. **Methods:** The CEMO program director participated in a Masters of Health Professions Education program. Newly learned concepts were applied to further the development of CEMO. **Curriculum, Tool, or Material:** Five important lessons learned, and their impacts on CEMO: First, curriculum design is a dynamic process. While CEMO was originally developed for physicians, the program has attracted many participants from other disciplines including nurses, administrators, pharmacists, and learners. Content and delivery have been redesigned to enhance inter-professional learning, which promotes team harmony, local problem

solving, and knowledge translation into practice. Second, learning must be highly relevant to the local context to be effective. The content of each CEMO session is tailored to each group's perceived and ascribed learning needs. CEMO is informed by sociocultural, transformative, experiential and cognitivist learning theories. Teaching strategies include interactive discussion of locally encountered clinical cases, and simulation. Third, it is more effective to integrate new technologies into a larger curriculum than to offer them as stand-alone modules. CEMO incorporates innovative presentation software, screencasts, procedural videos, and online audience response systems to engage participants. Fourth, learning effectiveness is best measured using multiple sources of assessment, and multiple assessments over time. CEMO's learner assessment strategies include self-reflection at sessions, and months later. Participants consider CEMO's effects on their practice, including reactions of co-workers and patients to their new skills, knowledge and behaviours. Finally, program evaluation may take many forms, and begins with defining evaluation goals and questions. We have developed a program logic model for CEMO, and a combined process and outcome evaluation is in progress. **Conclusion:** The application of important educational concepts promotes the design of effective continuing education in emergency medicine for rural health professionals. **Keywords:** education innovation, continuing professional development, rural

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International scope of emergency ultrasound: barriers to utilizing ultrasound to guide central venous catheter placement by providers in Kenya

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Introduction: While ultrasound (U/S) use for internal jugular central venous catheter (CVC) placement is standard of care in many

institutions in North America, most developing countries have not adopted this practice. Previous surveys of American physicians who are not currently using U/S to place CVCs have identified lack of training and equipment availability as the most important barriers to the use of U/S. We sought to identify Kenyan physicians' perceived barriers to the use of U/S to guide CVC insertion in a resource-constrained environment. **Methods:** The study was conducted at the Aga Khan University Hospital in Nairobi, Kenya. Physicians participating in a one-hour course teaching U/S guided CVC placement were asked to complete a survey before beginning training, which was used to assess previous experience with U/S, and evaluate perceived barriers to U/S. Survey responses were analyzed using summary statistics and the Rank-Sum test to compare the difference between participants' responses based on different specialty, gender and previous history of using U/S. **Results:** There were 23 physicians who completed the course and the survey. They included 6 internal medicine, 5 critical care, 5 anesthesia, 2 emergency medicine and 5 physicians from other specialties. The mean length of practice was 5 years. 52% (95% CI: 0.30-0.73) had put in >20 CVCs. 21.7% (95% CI: 0.08-0.44) of participants had previous U/S training, but none have received any training on the use of U/S for CVC insertion. The respondents expressed agreement on the ease of the use, improved success rate, and decreased failure rate with U/S guidance. However, less agreement was found regarding the perceived superior convenience and cost effectiveness of U/S CVC placement (see Figure). The lack of training or comfort with the U/S and the availability of U/S and equipment to maintain sterility were reported as the main barriers for use. Neither previous U/S experience nor specialty of the respondent significantly affected responses. **Conclusion:** Barriers to the use of U/S guidance for the placement of CVCs in Nairobi, Kenya are similar to those found among American physicians. These include training and comfort level with U/S in placement of CVCs, as well as resources required for U/S equipment and to keep the field sterile.

Keywords: ultrasound, international, central venous access