data from Ontario, Canada. Patients who were discharged home from an ED in Ontario with a primary diagnosis of chest pain from April 1, 2004 to March 31, 2010 were included. High-risk patients were defined as the presence of diabetes or pre-existing cardiovascular disease, while low-risk patients were defined as the absence of these conditions. ED volume was categorized as low, medium, or high, based on tertiles of annual chest pain patient volume. The primary outcome of this study was all-cause mortality one year after the index ED visit. Mantel-Haenszel Chi-Square was used to compare crude outcome rates.

**Results:** There were 56,767 high-risk patients. The average age was 66 years and 53% were male. All-cause mortality rates were 6.8%, 6.3%, and 6.0% (p = 0.028), and rates of hospitalization for acute coronary syndrome were 5.8%, 4.6%, and 4.0% (p < 0.001) among low, medium, and high volume EDs respectively. There were 216,527 low-risk patients. The average age was 64 years and 42% were male. All-cause mortality rates were 2.0%, 1.9%, and 1.6% (p < 0.001), and rates of hospitalization for acute coronary syndrome were 1.5%, 1.4%, and 1.0% (p < 0.001) among low, medium, and high volume EDs respectively.

**Conclusion:** Higher volume EDs were associated with decreased rates of all-cause mortality and admission for acute coronary syndrome among chest pain patients who were discharged home. Future research should study the reasons for this finding and attempt to improve outcomes in lower volume EDs.

**Keywords:** chest pain

**LO007**

A pragmatic randomized and controlled evaluation of nurse-initiated protocols

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**Introduction:** Emergency department (ED) overcrowding is a common and complicated challenge for EDs worldwide. Nurse-initiated protocols, diagnostics and/or treatments implemented by nurses prior to patients being seen by a physician or nurse practitioner, have been suggested as a potential strategy to improve patient flow. **Methods:** This randomized, pragmatic, controlled evaluation of 5 nurse-initiated protocols occurred in a crowded inner-city ED. Six physicians and 44 registered nurses, 3 clinical nurse educators and 3 unit managers were involved in revising 5 patient-complaint focused protocols prior to evaluation. Thirty (30/180) emergency nurses were provided 1 hour of training on inclusion and exclusion criteria, procedure and evaluation methods. Data was abstracted in a manner concealing patient allocation. Primary outcomes evaluated included time to diagnostic test, treatment, consultation or ED length of stay. This evaluation was completed following both the CONSORT and SQUIRE guidelines. **Results:** Time to acetaminophen for the intervention group (n = 11) was 1h:04 min on average (95%CI 30min to 1h:37min) whereas the control group (n = 9) was 3h:35min (95%CI 2h:21min to 4h:48min). The average length of stay of a suspected fractured hip in the intervention group (n = 5) was 3h:34min (95%CI 1h:49min to 5h:19min) and 7h:34min for the control group (n = 4) was (95%CI 5h:26min to 9h:42min). Time to troponin in the intervention group (n = 29) was one quarter (average 48min, 95% CI 32min to 64min) of the time it was in the control group (n = 14) (average 3h:16min, 95% CI 1h:53min to 4h:39min; p < 0.001). The vaginal bleeding in pregnancy protocol reduced length of stay by roughly fifty-percent; the intervention group (n = 11) had a length of stay of 4h:57min (95%CI 3h:46min to 6h:08min) compared to 8h:33min (95% CI 6h:23min to 10h:44min) for the control group (n = 7) (p < 0.001). There was no statistical difference in the length of stay for patients who received protocolized diagnostics for abdominal pain. **Conclusion:** Targeting specific patient groups with carefully written protocols can improve the timeliness of care. A cooperative and collaborative interdisciplinary group are essential to success. Having a system in place to ensure ongoing quality in protocol application and interdisciplinary support has proven more difficult than improving the primary outcomes in this evaluation.

**Keywords:** nurse protocols, standing orders, order sets

**LO008**

Assessment of the need for diagnostic imaging in extremity injuries by advanced care paramedics

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**Introduction:** Emergency department (ED) crowding is a national challenge. Initiatives to help address this at our ED include the use of a six-bed fast-track unit staffed by advanced-care paramedics (ACPs). Institutional byelaws only allow diagnostic imaging (DI) ordering by