



# SOCIETY FOR ACADEMIC EMERGENCY MEDICINE ANNUAL MEETING ABSTRACTS - 2012

The editors of *Academic Emergency Medicine (AEM)* are honored to present these abstracts accepted for presentation at the 2012 annual meeting of the Society for Academic Emergency Medicine (SAEM), May 9 to 12 in Chicago, Illinois. These abstracts represent countless hours of labor, exciting intellectual discovery, and unending dedication by our specialty's academicians. We are grateful for their consistent enthusiasm, and are privileged to publish these brief summaries of their research.

This year, SAEM received 1172 abstracts for consideration, and accepted 746. Each abstract was independently reviewed by up to six dedicated topic experts blinded to the identity of the authors. Final determinations for scientific presentation were made by the SAEM Program Scientific Subcommittee co-chaired by Ali S. Raja, MD, MBA, MPH and Steven B. Bird, MD, and the SAEM Program Committee, chaired by Michael L. Hochberg, MD. Their decisions were based on the final review scores and the time and space available at the annual meeting for oral and poster presentations. There were also 125 Innovation in Emergency Medicine Education (IEME) abstracts submitted, of which 37 were accepted. The IEME Subcommittee was co-chaired by JoAnna Leuck, MD and Laurie Thibodeau, MD.

We present these abstracts as they were received, with minimal proofreading and copy editing. Any questions related to the content of the abstracts should be directed to the authors. Presentation numbers precede the abstract titles; these match the listings for the various oral and poster sessions at the annual meeting in Chicago, as well as the abstract numbers (not page numbers) shown in the key word and author indexes at the end of this supplement. All authors attested to institutional review board or animal care and use committee approval at the time of abstract submission, when relevant. Abstracts marked as "late-breakers" are prospective research projects that were still in the process of data collection at the time of the December abstract deadline, but were deemed by the Scientific Subcommittee to be of exceptional interest. These projects will be completed by the time of the annual meeting; data shown here may be preliminary or interim.

On behalf of the editors of *AEM*, the membership of SAEM, and the leadership of our specialty, we sincerely thank our research colleagues for these contributions, and their continuing efforts to expand our knowledge base and allow us to better treat our patients.

David C. Cone, MD  
Editor-in-Chief  
*Academic Emergency Medicine*

## 1 **Policy-driven Improvements In Crowding: System-level Changes Introduced By A Provincial Health Authority And Its Impact On Emergency Department Operations In 15 Centers**

Grant Innes<sup>1</sup>, Andrew McRae<sup>1</sup>, Brian Holroyd<sup>2</sup>, Brian Rowe<sup>2</sup>, Christian Schmid<sup>3</sup>, MingFu Liu<sup>3</sup>, Lester Mercuur<sup>1</sup>, Nancy Guebert<sup>3</sup>, Dongmei Wang<sup>3</sup>, Jason Scarlett<sup>3</sup>, Eddy S. Lang<sup>1</sup>

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**Background:** System-level changes that target both ED throughput and output show the most promise in alleviating crowding. In December 2010, Alberta Health Services (AHS) implemented a province-wide hospital overcapacity protocol (OCP) structured upon the Viccellio model.

**Objectives:** We sought to determine if the OCP policy resulted in a meaningful and sustained improvement in ED throughput and output metrics.

**Methods:** A prospective pre-post experimental study was conducted using administrative data from 15 community and tertiary centers across the province. The study phases consisted of the 8 months from February to September 2010 compared against the same months in 2011. Operational data for all centres were collected through the EDIS tracking systems used in the province. The OCP included 3 main triggers: ED bed occupancy >110%, at least 35% of ED stretchers blocked by patients awaiting inpatient bed or disposition decision, and no stretcher available for high acuity patients. When all criteria were met, selected boarded patients were moved to an inpatient unit (non-traditional care space if no bed available). The primary outcome was ED length of stay (LOS) for admitted patients. The ED load of boarded patients from 10–11 am was reported

**389 Homeless Frequent Flyers: The Impact of Homelessness on Frequent Use Of The Emergency Department**

Michael Bouton, Larry Nathanson, Jonathan Fisher, Alden Landry  
*Beth Israel Deaconess, Boston, MA*

**Background:** Homelessness has been associated with many poor health outcomes and frequent ED utilization. It has been shown that frequent use of the ED in any given year is not a strong predictor of subsequent use. Identifying a group of patients who are chronic high users of the ED could help guide intervention.

**Objectives:** The purpose of this study is to identify if homelessness is associated with chronic ED utilization.

**Methods:** A retrospective chart review was accomplished looking at the records of the 100 most frequently seen patients in the ED for each year from 2005–2010 at a large, urban academic hospital with an annual volume of 55,000. Patients' visit dates, chief complaints, dispositions, and housing status were reviewed. Homelessness was defined by self-report at registration. Patients were categorized according to their ED utilization with those seen >4 times in at least three of the five years of the study identified as Chronic High Utilizers; and those who visited the ED >20 times in at least three of the five years of the study were identified as Chronic Ultra-High Utilizers. Descriptive statistics with confidence intervals were calculated, and comparisons were made using non-parametric tests.

**Results:** During the 5-year study period, 189,371 unique patients were seen, of whom 0.7% patients were homeless. 335 patients were identified as frequent users. There were patients who presented on the top 100 utilizer lists from multiple years. 67 (20%, 95%CI 16–25) patients were identified as homeless. 148 patients were seen >4 times in at least three of the 5 years and 23 (16%, 11–22) were homeless. 12 patients were seen >20 times in at least three of the 5 years and 5 (41%, 19–68) were homeless. Our facility has a 40% admission rate; however, non homeless Chronic Ultra-High Utilizers had admission rates of 24% and homeless Chronic Ultra-High Utilizers were admitted 14%.

**Conclusion:** Chronic Ultra-High Utilizers of our ED are disproportionately homeless and present with lower severity of illness. These patients may prove to be a cost-effective group to house or otherwise involve with aggressive case management. The debate over homeless housing programs and case management solutions can be sharpened by better defining the groups who would most benefit and who represent the greatest potential saving for the health system.

**390 Hospital Readmission Rates: Related To ED Volume, Population, And Economic Variables**

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**Background:** The Center for Medicare and Medicaid Services (CMS) is reducing reimbursement when hospitals discharge patients who are readmitted within a month. CMS aims to motivate hospitals to identify and control factors which cause readmission, including factors not traditionally considered hospital-related.

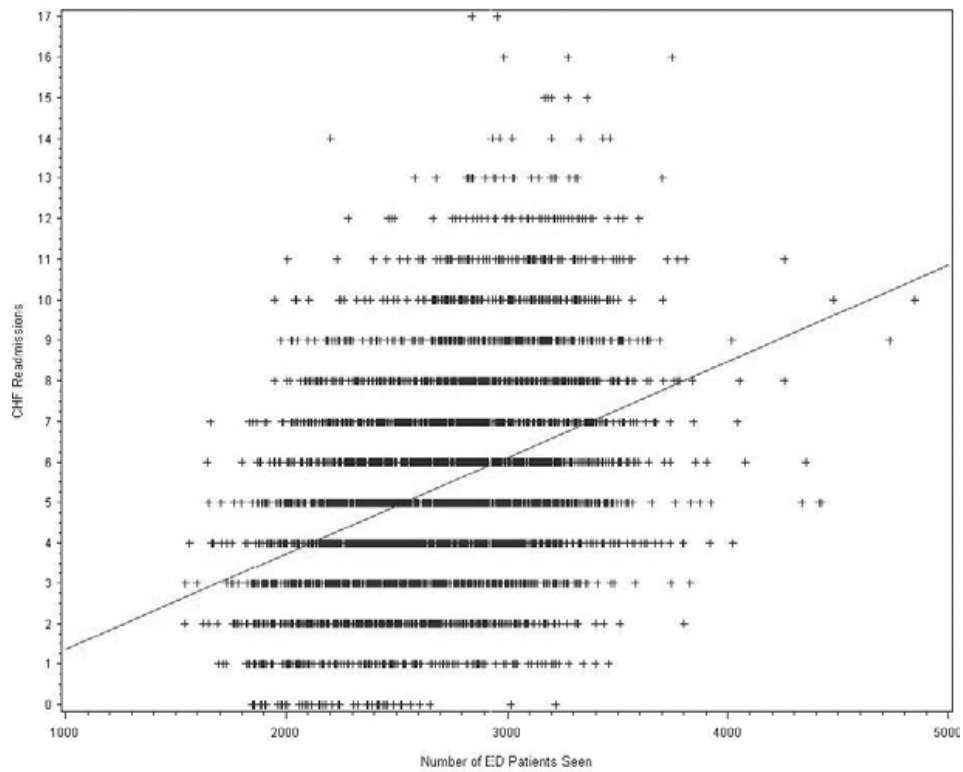
**Objectives:** Identify factors important to our readmissions.

**Methods:** We used counts of patients readmitted within one month to New York City's 11 public acute care hospitals from 1998–2009. We examined counts where a primary discharge diagnosis of the preceding visit was pneumonia or congestive heart failure (CHF). We compared the readmission counts to upper respiratory infection (URI) rates, unemployment levels (U1–U6, unadjusted), income (maximum income of the lowest quintile, or Q5 income), number of residents with limited English proficiency (LEP), weather, pollen counts, and air pollution. On the day of readmission: ED volume and number of other inpatient admissions to the 11 hospitals. The counts come from our billing database; the other data are publicly available. We used bivariate and multivariate linear regression. Criteria for model inclusion:  $p < 0.05$ , maximize  $R^2$ , include only terms that make intuitive sense.

**Results:** There were 20,792 pneumonia readmissions (4.7 + -2.5/day), and 23,414 (5.3 + -2.6) for CHF. Bivariate comparisons showed the following variables having statistically significant relations to both pneumonia and CHF readmissions: total NYC population, LEP population, unemployment rates, Q5 income, ozone, and numbers of URI patients, inpatient admissions, and ED visits ( $R^2 = 0.19$  and 0.15) seen in the hospital that day. Pneumonia, not CHF, was related to air temperature. Multivariate modeling for pneumonia showed significant, independent effects of total population, Q5 income, air temperature, and numbers of inpatient admissions and ED visits. The CHF model showed independent effects of total population, U5 unemployment, and number of ED visits.

**Conclusion:** CMS reimbursement may be an incentive to reduce ED overcrowding. Poverty, measured by unemployment and income of the poorest quintile (Q5) were factors. Possibly, poverty affects access to care, pharmaceuticals, or outpatient support. Air temperature was associated with pneumonia readmissions.

### CHF Readmission Rates and ED Visits



### Pneumonia Readmission Rates and ED Visits

