

**Keywords:** shared decision making, acute respiratory infections, patient education

#### P082

##### **Correlation between serum and blood gas: a review on the accuracy of electrolyte readings obtained blood gases**

J. Lindgren, BComm, S. Dowling, MD; University of Calgary, Calgary, AB

**Introduction:** In the Emergency Department (ED), increasing time pressures and acuity require physicians to have access to quick and reliable data to guide patient care decisions. Blood gases (BGs) allow quick access to key information, and are used frequently in the ED. Our objective was to review the literature on reliability and accuracy of electrolyte measurements obtained from BGs in high acuity settings. **Methods:** A comprehensive literature review was conducted in September of 2015. The search strategy, done in conjunction with a medical librarian, identified studies that assessed the accuracy of BGs when compared to traditional laboratory serum measurements. Prior to the review we determined sodium and potassium would be the area of focus. Eligibility parameters for the studies included samples from acute care areas - the ED and ICU - and a comparison of BG and serum values taken simultaneously from the patient. **Results:** Our review included 12 studies, 9 in adult and 3 in pediatrics. There were approximately 1,135 patients included, consisting of 851 adult and 284 pediatric cases. The results were mixed; 9 studies agreed that sodium and potassium readings from BGs were accurate enough to guide acute care decisions, 5 did not. Furthermore, important questions were raised regarding the varying accuracy of BGs depending on what physiological level the electrolytes were at during the time of collection, i.e. at critical vs non-critical levels. **Conclusion:** This is the first literature review to examine the existing evidence on the accuracy of BGs in acute care environments. Given the variability in the results, a larger study needs to be done to determine the validity and reliability of blood gases for electrolytes in acute care settings. Only by ensuring the accuracy of data collected via point-of-care BGs can the most informed decisions be made surrounding patient care in acute care settings.

**Keywords:** blood gas, electrolytes

#### P083

##### **Why do older adults in assisted living facilities use the emergency department: are all these visits necessary?**

E. Losier, BSc, A. McCollum, BSc, P. Jarrett, MD, R. McCloskey, MN, PhD, P. Nicholson, MN, M. Howlett, MD; Dalhousie Medicine New Brunswick, Saint John, NB

**Introduction:** Special Care Home (SCH) residents require supervision for activities of daily living but not regular nursing care. Emergency Department (ED) use by seniors in SCHs is poorly studied. A recent study in Nova Scotia found seniors represented over 20% of ED visits. We studied SCH resident ED visits in a community with a population of 30,000 aged over 65 years and with 785 SCH beds, to define reasons for ED visits to a tertiary ED, and if these could be avoided. **Methods:** We performed a retrospective chart review of SCH residents' visits to an ED (SCH-ED) which has 56,000 total ED (TED) visits over one year. Reasons for visit, admission data, and avoidability were collected. A geriatrician and ED physician independently reviewed visits. Initial disagreement on avoidability (27%) was adjudicated through case discussion. **Results:** Demographic data revealed 344 ED visits by 111 SCH residents over one year; 37% of visits resulted in admission. 13.9% of

residents visited the ED on at least one occasion (average 3.1 visits); mean age 78.4 years; female 66.7%; ambulance arrival 91.0%. The three most common chief complaints were *shortness of breath, weakness and abdominal pain*. Most SCH-ED visits were Canadian Triage and Acuity Scale (CTAS) Level 3 (63.4%, TED 53.3%). Of CTAS Level 3 visits, 35.3% were admitted (TED 12.9%). SCH-ED visits were avoidable in 40.6% of cases. Gastrointestinal (18%), pain (16.5%), falls, functional decline or injury (14%) and respiratory (12%) were the most common avoidable diagnostic groups, accounting for 57% of total SCH visits.

**Conclusion:** ED visits by SCH residents demonstrated increased acuity and admission rates with a high number of repeat visits. Of all SCH-ED visits, 40% were potentially avoidable. Further study may determine if improved community services reduces ED visits or hospital admission. Gastrointestinal, respiratory, falls and pain diagnoses may be important areas of focus.

**Keywords:** assisted living, seniors, emergency visit

#### P084

##### **Waiting makes me sick: is it time for formal triage in primary care?**

J. MacKay, MD, P.R. Atkinson, MD, M. Howlett, MD, E. Palmer, MD, J. Fraser, BN, E. Vaillancourt; Dalhousie University, Integrated Family/Emergency Residency Program, Saint John, NB

**Introduction:** Patient morbidity and mortality are influenced by delay in access to care and lack of continuity of care. Patients frequently present to the emergency department (ED) for care despite being registered with a primary care (PC) provider. Advanced access is an open scheduling system promoted by the College of Family Physicians of Canada that triages primary care (PC) patients to be seen within 24 hours, reducing care delay. We wished to determine the prevalence of formal triage systems in PC appointment allocation. **Methods:** We performed linked cross sectional surveys to quantify the number of ambulatory patients presenting to a tertiary urban ED (with an annual census of 56,000 visits) who felt unable to access primary care. PC practices were also surveyed to assess use of formal triage methods and measure access using the metric of time to third next available appointment. Descriptive statistics were calculated. **Results:** In the patient survey, 381 of 580 patients consented to participate. Of those, 324 patients reported reasons for their ED visit. Perception that wait time for PC was "too long" was reported in 73/324 (23%); 86% reported wait times of greater than 48 hours. The PC practice response rate was 63.8% (46/72). The mean time to third next available appointment was 7.7 (95% CI 4.9-10.5) days (median 5 days, range 0-50 days). No PC practice reported utilizing a formal triage system when booking appointments. **Conclusion:** No primary care practices in the surveyed region used a formal triage system to allocate appointments, despite a range of wait times that extended up to 50 days. The safety of primary care appointment allocation may be improved with introduction of a formal triage system, especially if overall wait times cannot be reduced.

**Keywords:** triage, primary care, advanced access

#### P085

##### **A low-cost solution to high-risk problem: enhancing communication of emergency physician x-ray interpretations to reading radiologist**

D.J. MacKinnon, MD, M. McGowan, MHK, T. Dowdell, MD, G. Bandiera, MD, Med; St. Michael's Hospital, Toronto, ON

**Introduction:** There was a recognized lack of available system for Emergency Physicians (EPs) to communicate their x-ray interpretations to the reading Radiologist; this resulted in unnecessary flagging of cases with significant findings already seen by the EP or the possibility of