limited by small sample size, use of highly trained and experienced sonographers, and referral bias. Our primary objective was to assess the test characteristics of POCUS performed by a large heterogeneous group of emergency physicians (EPs) for the diagnosis of RD. **Methods:** This was a prospective diagnostic test assessment of POCUS performed by EPs with varying ultrasound experience on a convenience sample of ED patients presenting with the complaint of flashes or floaters in one or both eyes. Participating EPs completed a one hour didactic lecture and were expected to demonstrate appropriate performance of one practice scan before enrolling patients. After standard ED assessment, patients underwent an ocular POCUS scan targeted to detect RD. EPs recorded the presence or absence of RD on the data collection instrument based on their POCUS scan. After completing their ED visit, all patients were assessed by a retina specialist who was blinded to the results of the POCUS scan. We calculated sensitivity and specificity with associated exact binomial confidence intervals (CI) using the retina specialist's determination of the final diagnosis as the criterion standard. **Results:** A total of 30 EPs, consisting of 21 staff physicians and 9 residents, participated in this study. These EPs performed a total of 128 POCUS scans. Of these scans, 13 were excluded. Of the remaining 115 enrolled patients, median age was 60 years, and 64% were female. The retina specialist diagnosed RD in 16 (14%) cases. The sensitivity and specificity of POCUS for detecting RD was 75% (95% CI 48% to 93%) and 94% (95% CI 87% to 98%), respectively. The positive likelihood ratio was 12.4 (95% CI 5.4 to 28.3), and negative likelihood ratio was 0.27 (95% CI 0.11 to 0.62). **Conclusion:** In a heterogeneous group of EPs with varying ultrasound experience, POCUS demonstrates high specificity but only intermediate sensitivity for the detection of RD. A negative POCUS scan is not sufficiently sensitive to rule out RD in a patient with new onset flashes or floaters.

Keywords: point of care ultrasound, retinal detachment, emergency physician

P048

Profiling the burdens of working nights. Traditional 8-hour nights vs staggered 6-hour casino shifts in an academic emergency department

A.X. Dong, MD, M. Columbus, PhD, R. Arntfield, MD, D. Thompson, MD, M. Peddle, MD, University of Western Ontario, London, ON

Introduction: Emergency physicians (EP) often work at undesirable hours. In response to deleterious effects on quality of life for EPs, traditional 2300-0700 night shifts have been replaced at some centres with staggered 6-hour casino shifts (22:00-04:00 and 04:00-10:00). Though purported to allow for better sleep and recovery patterns, no evidence exists to support the benefits on sleep or quality of life that is used to justify a casino shift model. Using a before and after survey model, this study examines the impact of overhauling night work from a traditional 8-hour shift to casino shifts on the quality of life and job satisfaction of EPs working in an academic emergency department (ED). **Methods:** In 2010, an initial online, 37-item survey, was sent to all EPs working in the ED, just prior to the transition to casino shifts. 6 years following the transition, a slightly modified 37-item survey was again distributed to all current EPs working at that same centre. Participants rated their level of agreement on a 7-point Likert scale regarding questions related to night work. Results from the two surveys were compared. **Results:** 43 2010- and 47 2016-surveys were completed. In 2016, recovery to baseline function after a single early shift (22:00-04:00) was most common after 1 day at 52.4%, and after multiple early shifts was ≥2 days at 66.7%. Recovery after a single late shift (04:00-10:00) was most common at 1 day at 54.8%, and after multiple

late shifts was ≥2 days at 59.5%. This was in contrast to 2010, when 55.8% recovered from a single traditional night shift after 1 day, and 95.3% required ≥2 days to recover from multiple traditional night shifts. In relation to casino shifts, 40.5% of respondents stated that night shifts are the greatest drawback of their job, compared to 79.1% previously. A minority of respondents felt that teaching (36.5%), diagnostic test interpretation (23.2%), and quality of handover (33.5%) were inferior on early and late night shifts compared to other shifts (74.4%, 58.1%, and 60.5% for traditional night shifts respectively).95.0% of respondents preferred casino over traditional night shifts. **Conclusion:** There were self-reported improvements in all domains following the implementation of casino shifts.

Keywords: casino shifts, night shifts, scheduling

P049

Modelling and manufacturing of a 3D printed trachea for cricothyroidotomy simulation

G. Doucet, S. Ryan, Memorial University, St. John's, NL

Introduction: Most current cricothyroidotomy simulation models are either expensive or low fidelity and limit the learner to an unrealistic simulation experience. The goal of this project is to innovate current simulation techniques by 3D printing anatomically accurate trachea models. By doing so emergency cricothyroidotomy simulation can be accessible, high fidelity, cost effective and replicable. **Methods:** 3D modelling software was used in conjunction with a desktop 3D printer to design and manufacture an anatomically accurate model of the cartilage within the trachea (thyroid cartilage, cricoid cartilage, and the tracheal rings). The initial design was based on dimensions found in studies measuring the dimensions of tracheal anatomy. This ensured an appropriate anatomical landmark design was achieved. Several revisions of the model were designed and qualitatively assessed by medical and simulation professionals to ensure anatomical accuracy that exceeded that of the currently used, low cost, cricothyroidotomy simulation model in St. John's. **Results:** Using an entry level desktop 3D printer, a low cost tracheal model was successfully designed that can be printed in under 3 hours. Due to its anatomical accuracy, flexibility and durability, this model is ideal for use in emergency medicine simulation training. Additionally, the model can be assembled in conjunction with a membrane to simulate tracheal ligaments and skin for appearance. **Conclusion:** The end result is a high fidelity simulation that will provide users with an anatomically correct model to practice important skills used in emergency airway surgery, specifically land marking, incision and intubation. This design is a novel, easy to manufacture, replicable, low fidelity trachea model that can be used by educators with limited resources such as those in rural and remote areas.

Keywords: 3D printing, simulation, cricothyroidotomy

P050

A prospective cohort study to evaluate discharge care for patients with atrial fibrillation and flutter (AF/AFL)

P. Duke, MD, S. Patrick, BSc, K. Lobay, DMD, MD, M. Haager, MD, B. Deane, MD, S. Couperthwaite, BSc, C. Villa-Roel, MD, PhD, B.H. Rowe, MD, MSc, University of Alberta, Edmonton, AB

Introduction: Atrial fibrillation and flutter (AF/AFL) are the most common arrhythmias encountered in the emergency department (ED); however, little information exists regarding the preventive management of patients with AF/AFL by emergency physicians (EPs). This study explored whether patients with AF/AFL received the recommended thrombo-embolic (TE) prophylaxis at discharge from the ED; patients'

TE risks, bleeding risks, and TE prophylaxis upon discharge from the ED were examined following assessment for symptomatic acute AF/AFL. **Methods:** Patients ≥18 years of age identified by the EP as having a diagnosis of acute AF/AFL confirmed by ECG were prospectively enrolled from three urban Canadian EDs. Using standardized patient enrollment forms, trained research assistants collected data on the patient's demographics, TE risk (using the $CHADS_2$ and CHA_2DS_2-VASc score), bleeding risk (using the HAS-BLED score), and management both in the ED and at discharge. Treating physicians were surveyed on their use of risk scores when making TE prophylaxis decisions as well as their estimate of the patient's stroke and bleeding risk. Descriptive analyses were performed. **Results:** From a total of 196 patients, 62% were male and the mean age was 63 years (standard deviation [SD] ±14). Most patients had previous history of AF/AFL (71%); hypertension was documented in 40% of them and ≤10% had other risk factors (e.g., congestive heart failure, vascular disease, diabetes, previous stroke, transient ischemic attack). Based on the $CHADS_2$ score and previous management, there was opportunity for new or revised antiplatelet/anticoagulant treatment by EPs in 19% of the patients. Consultations were requested in 28% of the patients, and the majority (89%) were discharged with anticoagulant or antiplatelet agents. EPs expressed concerns that an increased risk of falls, lack of access to facilities for INR monitoring, and significant cognitive impairment would affect their willingness to prescribe anticoagulation. **Conclusion:** Most patients in the ED with acute AF/AFL are receiving the recommended TE prophylaxis; however, given the significant morbidity and mortality associated with AF/AFL, improved short-term prescribing practices for anticoagulants would benefit 1 in 5 ED patients. More research on barriers to EPs prescribing anticoagulants is required to improve clinician comfort in treating this high-risk population.
Keywords: emergency department care

P051

Does knowledge of the Canadian CT Head Rules impact the frequency of CT's ordered?

H.C. Duyvewaardt, BM, M. Ertel, MD, J. Angel-Mira, BSc, B.A. Parker, BSc, N. Kandola, BN, M. Cheyne, BSc, R. Brar, BSc, H. Sidhu, BSc, UBC, Kelowna, BC

Introduction: The Canadian Computed Tomography Head Rules (CCTHR) is a validated and well-known head injury clinical decision rule that allows Emergency Room Physicians (ERPs) to determine which patients are most likely to benefit from a diagnostic CT. However, this clinical decision rule is not uniformly adhered to and a number of preventable CT scans are ordered. Choosing Wisely Canada has ranked decreasing unnecessary head CT scans as the number one priority for Emergency Departments (ED). As such, the purpose of this study was to investigate if an educational intervention for ERPs would increase adherence to the CCTHR. **Methods:** In September 2015 the CCTHR were presented and discussed at three ED departmental meetings at Kelowna General Hospital (KGH) a large tertiary hospital in the interior of British Columbia, Canada. Educational materials were distributed to the ERPS and a CTTHR checklist was made available throughout the ED. Rates of adherence to the CCTHR criteria were calculated from MHI patients that were seen in the four years prior to the educational intervention and were compared to rates of adherence for patients 12 months post educational intervention. Only patients that agreed to participate in the Canadian Hospitals Injury Reporting and Prevention Program (CHIRPP) were included in this analysis. Differences in adherence rates were tested using the chi-squared test. **Results:** 477 patients were included in the analysis for the pre-education cohort

(control) and 257 for the post-education cohort(intervention). In the control cohort, 348 of the 477 (73%) of the patients were managed in accordance to the CCTHR compared to 194 of the 257 (75%) in the intervention cohort. There was no statistically significant difference in rates of adherence ($p = 0.457$).In the control cohort, 44 of the 321 (14%) of patients received a CT that did not meet any CCTHR criteria compared to 15 of the 163 (9%) in the intervention cohort. The overall CT imaging rate was 24% in each patient cohort. **Conclusion:** Although adherence rates between the two cohorts were not statistically different, a greater proportion of patients had a CTAS of 2 or 3 and met criteria in the intervention cohort suggesting a higher level of acuity. Imaging rates remained constant at 24%, which was lower than expected if there was full adherence to the CCTHR. Further study is required to determine if educational interventions can improve adherence to the CCTHR.
Keywords: minor head injury, computed tomography, Canadian Computed Tomography Head Rules

P052

The importance of structured ambulance radio patches during termination of resuscitation calls

D. Eby, MD, PhD, J. Woods, BHSc, Western University, Owen Sound, ON

Introduction: Pre-hospital telecommunication (patches) requires a special type of conversation. Receiving and processing correct information is critical when making clinical decisions, such as a termination of resuscitation (ToR). In a study of radio patches, a common patch structure emerged from the data analysis. Use of this standard structure resulted in shorter and less confusing patches. We sought to understand patch structure to be able to target interventions to improve the quality and efficiency of communication needed for critical clinical decisions. **Methods:** We undertook a retrospective analysis of all ToR patches between physicians and paramedics from 4 paramedic services, recorded by the Ambulance Dispatch Centre between Jan 01-Dec 31, 2014. Four services used Primary Care Paramedics and 1 service also used Advanced Care Paramedics. MP3 patch recording files were anonymized, transcribed, and read multiple times by the authors. Transcripts were coded and analyzed using mixed methods-quantitative descriptive statistics and qualitative thematic framework analysis. **Results:** The data set was 127 ToR patches-466 pages of transcripts. 116 patches (91.3%) had a standard structure (SS): participant introduction, clinical data presentation, clarification of data, making the decision, exchange of administrative information, and sign off. Paramedics used a mean of 81 words (95CI 74,88) to present the 'clinical data'. Enough data was presented to meet ToR rule criteria in 52 cases (44.8%). Before making a decision to terminate resuscitation, physicians sought clarification in 100 cases (78.7%). After making the ToR decision, some physicians needed to justify their decision by seeking more data in 17 cases (13.4%). Exchange of non-clinical information (numbers, times, name spellings) took a mean of 200 words (95CI 172,228) and averaged 84 seconds or 35% of the average patch time. SS patches used a mean of 558 words, and lasted 234 sec (95CI 215,252). Non-SS patches used a mean of 654 words and lasted 286 sec (95CI 240,332). **Conclusion:** The most common patch structure consisted of participant introduction, data presentation, clarification of data, making the clinical decision, exchange of administrative information, and a sign off. Deviation from this SS resulted in longer patches. When a non-SS patch structure was used, the patching paramedic was tied up 25% longer and unavailable to provide patient care.
Keywords: paramedic, communication, termination of resuscitation