
POSTER COMPETITION –BIOMEDICAL/CLINICAL

B1

Title: *A Novel Survey of Provider Knowledge of 1997 NICHD and 2008 ACOG and SMFM Nomenclature for Electronic Fetal Monitoring: A Calling for Competency Based Evaluations for all Providers*

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Introduction: Since electronic fetal monitoring (EFM) was introduced in the 1970's, its use has become almost universal in labor and delivery units across the United States. Of the 4 million live births in this country, 85% are assessed with EFM, making it the most common obstetrical procedure performed today. The ability of healthcare providers to effectively communicate about EFM requires a common, universally understood language.

Objective: The purpose of this study was to assess the current knowledge of obstetrical providers on the 1997 NICHD terminology and the 2008 three-tiered classification system regarding electronic fetal monitoring.

Methodology: A novel survey was randomly distributed at national conferences focused primarily on obstetrics between January 2009 and November 2009. Eligible participants were Perinatologists, MFM Fellows, Obstetricians, OB/GYN residents and Labor and Delivery Nurses. The survey questions were based on 1997 NICHD definitions and the 2008 *Eunice Kennedy Shriver* NICHD workshop recommendations.

Results: A total of 95 completed surveys were reviewed. Providers exposed to EFM on a regular basis tend to have a better understating of the terminology used in the 1997 NICHD definitions. The majority of providers at all levels of training were able to define the appropriate category according to the three-tiered recommendation for FHR interpretation.

Conclusion: Providers at all levels demonstrated a lack of understanding of the current definitions and terminology. This study suggests that the clinicians exposed to EFM on a regular basis (Fellows, Residents and Nurses) are more knowledgeable of the 1997 NICHD terminology than attending physicians.

B2

WITHDRAWN

B3

Title: *Kid Fit: Preliminary Data on Fourth Grader's BMI-for-Age*
Authors Nora K. Burns, OMS IV, Ohio University College of Osteopathic Medicine
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Introduction: Obesity is a growing problem in the United States, especially in the state of Ohio. With declining physical activity, sugary-food advertising geared at children, and the convenience of fast food, even in elementary schools, the U.S. has become the heaviest country in the world. Patterns of nutrition and physical activity established in childhood affect future rates of overweight and obesity.

Objectives: The first objective of our study was to determine the overweight and obesity rates of Sandusky fourth-graders. A secondary objective was to evaluate the impact on children's BMI through a pilot project targeting parental education.

Methodology: A total of 108 students from five Sandusky public schools were included in the study. Baseline data included BMI-for-Age, a demographics survey, and a food survey. Parents at test schools were invited to attend a series of 4 sessions of the Kid Fit program to learn about nutrition and physical exercise. Farmer's market produce and coupons were offered as weekly incentives.

Results: The study showed that 31% of Sandusky fourth-graders are obese and 49% are overweight or obese. The Kid Fit program was well received, but participant numbers were too low to be statistically significant.

Summary: Sandusky has markedly higher rates of obese and overweight fourth-graders compared to the average fourth grade overweight and obesity rates for Ohio and the nation.

B4

Title: *The Epidemiology of the Pandemic Influenza A (H1N1) in Northeast Ohio*
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Background: The US PIA emerged in 2009. Influenza (FLU) in the US was detected in summer and fall peaking in October 2009. Greater than 99% of the FLU was A, related to A/California/7/2009 (H1N1). The highest hospitalization rates were in children 0-4 years; hospitalization rates declined with age. A retrospective cross-sectional study was performed on FLU A during the peak in five hospitals in Ohio.

Methods: During September 1 to November 30, inpatient cases were identified from positive lab records for FLU A, by a rapid FLU test (RIT), direct immuno-fluorescent assay (DFA), culture (C) or PCR; and were inpatients. Demographics, clinical and lab records, and outcome were obtained.

Results: A total of 260 patients were evaluated. FLU was confirmed: C 151 (58%), RIT 98 (38%), RTI/C 8 (3%) and PCR 3 (1%). It was discovered that 122 were female (47%); the mean age was 18.35 years (range 0.6-83 years). The majority of the cases were between ages 5-17 years old (95, 36%) and 18-49 years old (81, 31%). A total of 138 patients (53%) were hospitalized and 34 patients (25%) admitted to ICU. Half had one co-morbidity: asthma (35%), blood disorders (13%), chronic lung disease (12%), diabetes (11%), heart disease (10%) and malignancy (7%). A total of 164 patients had a CXR, and 44 (27%) had pneumonia. The common clinical presentation was fever, cough, nasal congestion, headache and dyspnea (87%, 81%, 47%, 38% and 33% respectively). In a subset of 54 patients who had RIT and C, the sensitivity of the RIT was 14.5%.

Conclusion: Our epidemiologic findings concur with the CDC report. RIT has a very low sensitivity for diagnosis of PIA.

B5

Title: *Diagnosing Differences Between Healthcare Providers on a Global Health Experience*

Authors: Chris Carmichael, OMS II and Deborah Meyer, PhD, RN

Affiliation: Ohio University College of Osteopathic Medicine

Introduction: Though the many benefits to medical students who participate in global health experiences is widely accepted, little research has examined the question of whether these experiences are occurring at the expense of the patients the medical trips are supposed to serve.

Objective: In this study, the diagnoses made by preceptor-supervised medical students on a global health experience in El Salvador are compared to the diagnoses made by residents and native Salvadoran physicians at the same medical clinics.

Methodology: The study was conducted over two weeks in El Salvador during June 2010. Intake forms were filled out by patients and providers at free medical clinics held during this time with the providers specifically recording any diagnoses and their classification (i.e. student, North American resident or Salvadoran physician). Chi-squares were performed for the most common diagnoses to determine any significant differences in tendencies.

Results: There were significant differences in the diagnosing tendencies of different providers depending on the particular diagnosis. Some diagnoses differed very little, but significant differences were found in a few of the diagnoses, particularly gastroesophageal reflux disease (GERD) and intestinal parasites.

Discussion/Conclusion: Diagnosing differences further questions about whether medical students are adequately trained for international medical excursions. Considerations for improvement include identification of specific common pitfalls for students and the formation of committees to weigh the ethical implications of such trips.

B6

Title: *Sleep Disorders in Children: A National Assessment of Pediatrician Practices and Perceptions*

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Objectives: To survey general pediatricians regarding their screening practices for sleep-related issues, to assess their knowledge of common sleep complaints in children, to understand their perceived barriers to screening for sleep issues, and to determine if they have received training regarding sleep issues.

Methods: A national random sample (n=700) of general pediatricians who were members of the American Academy of Pediatrics were sent a valid and reliable questionnaire on sleep problems in youth. A three-wave mailing procedure was used to increase the response rate.

Results: A total of 346 (49%) pediatricians responded. The vast majority (96%) believed it was their job to counsel patients/ guardians regarding sleep hygiene, yet few (18%) had ever received formal training on sleep disorders. Those who did not screen for sleep problems spent significantly less time with each patient and perceived significantly more barriers to screening. Pediatricians who were trained about sleep disorders had significantly higher knowledge scores on sleep problems, perceived significantly fewer barriers to screening, and reported significantly higher confidence scores regarding counseling patients/ guardians on sleep problems.

Conclusions: The findings support the need for formal education on sleep disorders for all pediatricians. The effect of such training could be an improvement in the health, quality of life, and academic performance of American youths.

B7

Title: *The Effects of Cutaneous Specific Autonomic Nervous Blockade on Skin Blood Flow Oscillations in Humans*

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Introduction: The control of facial skin blood flow is complex involving adrenergic and possibly cranial nerve-related mechanisms along with local regulation. Postjunctional α 1- and α 2-adrenoceptors mediate cutaneous vasoconstriction and β -adrenoceptors may partially mediate cutaneous vasodilation in the face. However, previous research of the mechanisms involved in cutaneous microcirculation of the cheek and forehead are limited.

Objective: To identify the autonomic nervous component of facial skin blood flow by utilizing specific autonomic nervous blockade and quantifying oscillatory characteristics (Fast-Fourier Transform) of blood flow to the underlying mechanism.

Methodology: Phentolamine hydrochloride (a non-selective α -adrenoceptor antagonist), propranolol hydrochloride (a non-selective β -adrenoceptor antagonist), atropine (a non-selective muscarinic receptor antagonist), and a lactated ringers as the vehicle control were delivered into cutaneous microcirculation of the forearm, palm, cheek, and forehead via iontophoresis transdermal drug delivery. Skin blood flow was measured via laser-Doppler flowmetry probes attached to the four different skin sites within the iontophoresis chambers.

Results: Neither the vehicle nor propranolol had more than minimal effects on skin blood flow regulation in all sites. The iontophoresis of phentolamine and atropine in the forearm and palm also did not significantly affect regulation of cutaneous microcirculation. Low frequency oscillatory spectral power decreased after administration of phentolamine (14 ± 3 to 6 ± 1 and 26 ± 8 to 20 ± 7 ; $P < 0.05$) and atropine (13 ± 4 to 8 ± 2 and 64 ± 19 to 50 ± 15 ; $P < 0.05$) in both the cheek and forehead, respectively.

Conclusion: This finding may indicate that noradrenergic and cranial nerves are involved in the control and regulation of skin blood flow in the face.

B8

Title: *Neurophysiologic Effects of Spinal Manipulation in Patients with Chronic Low Back Pain*

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Introduction: While there is growing evidence for the efficacy of spinal Manipulation (SM) to treat low back pain (LBP), little is known on the mechanisms and physiologic effects of these treatments.

Objective: To determine whether high-velocity, low-amplitude spinal manipulation (SM) alters the amplitude of the motor evoked potential (MEP) or the short-latency stretch reflex of the erector spinae (ES) muscles, and whether these physiologic responses depend on whether SM causes an audible joint sound.

Methodology: We used transcranial magnetic stimulation to elicit MEPs and electromechanical tapping to elicit short-latency stretch reflexes in 10 patients with chronic LBP and 10 asymptomatic controls. Neurophysiologic outcomes were measured before and after SM.

Results: SM did not alter the ES MEP amplitude in patients with LBP

(0.80 ± 0.33 vs. 0.80 ± 0.30 μ V) or in asymptomatic controls (0.56 ± 0.09 vs. 0.57 ± 0.06 μ V).

Similarly, SM did not alter the ES stretch reflex amplitude in patients with LBP (0.66 ± 0.12 vs. 0.66 ± 0.15 μ V) or in asymptomatic controls (0.60 ± 0.09 vs. 0.55 ± 0.08 μ V). Interestingly, subjects exhibiting an audible response exhibited a 20% decrease in the stretch reflex ($p < 0.05$).

Conclusions: These findings suggest that a single SM treatment does not systematically alter corticospinal or stretch reflex excitability of the ES muscles; however, they do indicate that the stretch reflex is attenuated when SM causes an audible response. This finding suggests that SM producing an audible response may mechanistically act to decrease the sensitivity of the muscle spindles and/or the various segmental sites of the Ia reflex pathway.

B9

Title: Treatment of Pseudoaneurysms Using Ultrasound-Guided Thrombin Injection
Authors: Deepa Halaharvi, DO, Kaushal Shah, MD, Randall Franz, MD, Richard Pin, MD, James Jenkins II, PhD
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Introduction: Iatrogenic pseudoaneurysms are false aneurysms, a complication of arterial catheterization performed for both diagnosis and intervention. The causes of pseudoaneurysms include arterial punctures for peripheral angiography or angioplasty, percutaneous hemodialysis access, cardiac catheterization and percutaneous intraaortic balloon pump placement and line placement. Their incidence is 1% following diagnostic catheterizations and 3.2% after interventional procedures.

Diagnosis of iatrogenic pseudoaneurysms is made by real-time duplex ultrasonography. The symptoms of pseudoaneurysm include pain due to increased pressure from swelling or nerve compression, and extremity swelling due to venous compression, hematoma or loss of pulses.

Thrombin injection is successful in 94 to 100% of attempts, according to peer-reviewed literature. The advantages of using ultrasound guided thrombin injection include minimal discomfort to the patient, high efficacy, lack of influence of concurrent anticoagulation, and rapidity of the procedure.

Objectives: To demonstrate the ultrasound-guided injection of thrombin is an effective way to treat iatrogenic pseudoaneurysms.

Methods: Retrospective chart review of 34 patients who were diagnosed with iatrogenic pseudoaneurysms from January 2004 to June 2010. All patients' pseudoaneurysms were treated using ultrasound guided thrombin injection.

Results: In our study we had overall success rate of 97.1% in treating iatrogenic pseudoaneurysms in 33 out of 34 patients. One patient underwent open surgical repair. No patients expired or suffered any other complications and all were discharged home.

Conclusion: We were successful in demonstrating that the U/S-guided injection of thrombin in our patient population is an efficacious way to treat iatrogenic pseudoaneurysms.

B10

Title: *Plating of Acute Humeral Diaphyseal Fractures via an Anterior Approach in Multiple Trauma Patients*
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Purpose: We evaluated our experience plating acute humeral diaphyseal fractures in a trauma population using an anterior surgical approach, small fragment fixation and supine positioning.

Methods: We performed a retrospective review of radiographic and clinical outcomes and prospectively assessed long-term strength and range-of-motion (ROM) and perceptions of disability using the Disabilities of the Arm, Shoulder and Hand (DASH) questionnaire.

Results: Ninety-six cases met our criteria. Injuries were largely due to high-energy trauma, with 20 open fractures. Mean time to surgery was 5 days (SD 11 days); 97.5% of patients achieved union in an average of 16.9 weeks (range 6-56 weeks). Complications included 2 post-operative infections, 1 non-union and 4 hardware failures. Long-term follow-up (n=34) averaged 4.75 years (range 1.4-10.8 years). No statistically significant differences between the injured and uninjured extremities were seen in ROM of the shoulder and elbow on average, although 20% of patients had >15° difference in shoulder flexion. Elbow flexion was significantly weaker on the injured side. Both internal and external rotational strength of the shoulder were decreased. The mean DASH survey score was 25.9 (95% CI: 18.9–33.3, range 0-79).

Conclusions: Acute plating using an anterior approach, supine positioning and small fragment fixation is a safe and effective treatment for humeral shaft fractures in multiple trauma patients. We show a high union rate and few complications, although a modest loss of function and some perceived disability exists in the long-term. Our data will help orthopedists when choosing treatment and counseling patients on expected long-term outcomes.

B11

Title: *Is There a Link Between Cardiovascular Fitness and Body Composition in Salvadorans?*

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Introduction: Physical fitness is an important predictor of disease morbidity and mortality. As training increases, physical and cardiovascular fitness and body composition are improved. Although the link between fitness and body composition is well established in developed countries, less is known about body composition and fitness in El Salvador.

Objectives: Our objective was to determine whether or not there is a link between cardiovascular fitness and body composition in a sample of subjects in El Salvador.

Methodology: Subjects were recruited during medical brigades. Heart rate (HR) was measured with a heart rate monitor. Participants completed a 3-minute step aerobic exercise to the beat of a metronome. Post-exercise heart rate was acquired. Skin fold measurements were taken using skin fold calipers at four body regions. Body fat percentage was estimated using the Durnin equation.

Results: Cardiovascular fitness measured by change in HR was not correlated with estimated body fat percentage ($p>0.05$). Age was significantly associated with change in heart rate ($r=-0.28$, $p=0.001$). Body fat percentage was associated with SBP at rest ($r=0.28$, $p=0.007$) and after exercise ($r=0.23$, $p=0.03$) and DBP at rest ($r=0.30$, $p<0.001$). Forty-two participants experienced a decline in heart rate after exercise and were eliminated from the study. Body fat and HR were negatively correlated (-0.24 , $p=0.01$) in the remaining patients. Body composition was predictive of change in HR after controlling for age ($\beta=-1.0$, $p=0.06$).

Conclusion: After eliminating individuals with a decline in HR, there was a link between change in HR and body composition, opposite that expected based on other literature. This suggests some flaws in the study.

B12

Title: *Rapamycin Decreases Reperfusion Injury in HL-1 Cardiomyocytes*

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Background: Reperfusion injury arises in the treatment of myocardial infarction. Various pharmacological agents have demonstrated a reduction in reperfusion injury. Rapamycin is currently used in coronary stents to prevent restenosis. It is an attractive drug to explore given its context specific mechanism of action that modifies cellular function through inhibition of mTOR.

Hypothesis: Rapamycin attenuates apoptosis from reperfusion injury in cardiomyocytes.

Methods: HL-1 cardiomyocytes were exposed to six hours reperfusion following two hours ischemia. At reperfusion, cells were treated with either 10nM or 1000nM rapamycin. Cells were collected for analysis at the end-point of reperfusion. After standardizing protein content, caspase-3 activity (Cas3-A) was quantified by measuring cleavage of the substrate, Ac-DEVD-pNA.

Results: Two hours of ischemia alone and six hours of reperfusion alone did not increase Cas3-A. Two hours ischemia followed by six hours reperfusion significantly increased Cas3-A compared with two hours ischemia alone. With reperfusion alone, low and high dose rapamycin did not reduce Cas3-A. Low and high dose rapamycin significantly decreased Cas3-A when delivered at the time of reperfusion following two hours ischemia, compared to two hours ischemia followed by six hours reperfusion plus vehicle. This reduction in Cas3-A was not significantly different between low and high dose rapamycin.

Conclusion: Using Cas3-A as a marker for apoptosis, our results indicate two hours ischemia followed by six hours reperfusion induced apoptosis, demonstrating that reperfusion injury occurred. Low and high doses of rapamycin were effective in reducing the apoptotic aspect of reperfusion injury; however there was no dose response.

B13

Title: *Comparison of Osteopathic Medical School Curricula in Teaching Clinical Reasoning*

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Introduction: Osteopathic medical schools utilize different styles of preclinical education curriculum. School A uses an integrated style, combining lab and lecture activities with case-based discussions organized around body systems. School B employs a traditional curriculum divided into basic science disciplines.

Objectives: This study compares preclinical students from both schools and measures performance on the web-based clinical simulation program *DxR Clinician*[®]. Our hypothesis is that students from School A will have significantly higher scores on the simulated case than students from School B.

Methods: Seventeen students from School A and 51 from School B completed the same simulated case prior to clinical clerkships. Grade point average (GPA), Medical College Admission Test (MCAT[®]) scores, and performance on one *DxR Clinician*[®] case were analyzed to assess any differences between the groups ($p \leq 0.05$).

Results: Mean cumulative GPA (3.60 vs. 3.45, $p=0.046$), composite MCAT score (24.5 vs. 26.6, $p=0.012$) and biological science MCAT score (8.41 vs. 9.59, $p=0.003$) showed a significant relationship. In the simulated case, the students from School A performed significantly fewer exams (13.1 vs. 30.2, $p=0.003$) and completed a lower percentage of required exams (22.2 vs. 35.0, $p=0.034$) than School B. School A ordered a higher percentage of required labs (13.6 vs. 5.00, $p=0.050$) and provided significantly more differential diagnoses than School B (5.35 vs. 3.57, $p=0.011$).

Conclusion: While there were some significant differences between the two schools in their performance on the *DxR Clinician*[®] case, the groups differed in baseline GPA and MCAT scores. Diagnostic and clinical score results yielded $p > 0.05$.

B14

Title: *Factors Influencing Oral Contraceptive Use among Women in El Salvador*

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Affiliation: Godwin Dogbey, PhD, Centers for Osteopathic Research and Education
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Introduction: Rapid population growth is an increasing problem in developing countries such as El Salvador. However, attitudes and dispositions of women toward the use of contraceptive methods have not been satisfactory. This study explored factors that influence oral contraceptive use among women in selected communities in El Salvador.

Objectives: The goal of this study was to assess factors such as knowledge or information about oral contraceptives, accessibility, religious affiliation, and socioeconomic status in order to help analyze the reasons for women's family planning choices in El Salvador.

Methods: A survey of 471 women over the age of 18 was used to collect data on factors that influenced oral contraceptive use among women in El Salvador.

Results: Knowledge about oral contraceptives is associated with access to oral contraceptives and education. Religious affiliation is associated with use of oral contraceptives. There is also an association between socioeconomic status and use of oral contraceptives, in particular employment and income.

Conclusion: There is a general dislike of oral contraceptives among women in El Salvador as well as fear of side effects. Due to lack of knowledge, these fears and dislikes of contraceptive methods may be based on inaccurate information and myths. Further studies are needed to determine what women know about oral contraceptives and what information they receive at local clinics. Providing public education about the safety of oral contraceptives along with increased affordability of the pill are essential steps in improving women's reproductive health care.

B15

Title: *STOP IT!! Obesity Prevention A Plan in Columbus, Ohio*

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Introduction: Childhood obesity has more than tripled in the past 30 years. The obesity rate in Ohio is 13th highest in the nation; every county in the state exceeds the target rate of obesity (<5%), even in children ages 2 to 5.

Objective: To address this growing epidemic of childhood obesity, the Ohio Obesity Prevention Plan was set in motion in 2007 with the goal of improving the percentage of Ohioans engaging in physical activity and eating healthier foods by 2014.

Methodology: We highlight Nationwide Children Hospital's Ounce of Prevention is Worth a Pound program and its impact on the prevention and management of childhood obesity. The program is a preventive approach, designed to provide simple tools to educate parents about good nutrition and physician activity for their children. The toolkit includes evidenced-based messages as recommended by the Expert Committee within the National Initiative for Children's Healthcare Quality (NICHQ) and the American Academy of Pediatrics.

Results: Since its inception in 2007, the program has updated and expanded to include ages birth to 18 years in 2010, and has trained over 500 physicians in Ohio to provide anticipatory information on nutrition and physical activity, as well as calculate BMI to objectively monitor outcome.

Conclusion: Overall, the program has been successful. It is important to make the osteopathic pediatric healthcare community aware of its initiatives and increase participation to combat the childhood obesity epidemic.

B16

Title: *Glucose Profiles of Diabetic Patients in Labor and Delivery Using Continuous Glucose Monitoring*

Authors: Jennifer Lykens, OMS IV and Jay Shubrook, DO

Affiliation: Ohio University College of Osteopathic Medicine

Introduction: Although we have seen a dramatic decrease in associated perinatal mortality with the advancement of medical treatment and closer management of diabetes in pregnancy, we have not yet optimized perinatal management enough to prevent the complications associated with hyperglycemia during gestation.

Objective: With the advent of new technologies such as continuous glucose monitoring (CGM), is important to explore the implications of this technology on the pregnant patient in order to identify its usefulness in the management of pregnant diabetics.

Methodology: This pilot study examines glucose control in labor, delivery and the immediate postpartum period using the iPro[®] continuous glucose monitoring system which records interstitial glucose readings every five minutes for a duration of the study period via a comfortable subcutaneous sensor. The glucose profiles of five women with gestational diabetes were compared during labor, delivery and the postpartum period prior to discharge. Detailed information including maternal demographics, glucose reading upon hospital admission, medication at the time of delivery, duration of diabetes, anesthesia type, pitocin administration, mode of delivery, newborn blood glucose and bilirubin levels, fetal weight and presence of neonatal respiratory distress syndrome were also collected.

Results: Although clinical correlation has not yet been established, continuous glucose monitoring may diagnose hyperglycemia in labor that is unrecognized by the current standard of intermittent finger stick blood glucose monitoring.

Conclusion: A larger study is needed to determine the clinical implications of this new technology in the setting of obstetric patients with diabetes.

B17 **WITHDRAWN**

B18

Title: *Field Trial Using the Fastrach Intubating Laryngeal Mask Airway by Pre-Hospital Personnel*

Author: David McConoughey, DO

Affiliation: St. John Medical Center

Objective: Securing an airway is both paramount and technically difficult in the uncontrolled setting of an ambulance. Endotracheal intubation (ETI) under direct laryngoscopy in this setting comes with high failure rates and associated, life-threatening complications. This retrospective study was designed to arm paramedics with a rescue device for difficult airways.

Methods: Phase one of the study involved obtaining data concerning pre-hospital ETI success rates. Paramedics were trained with the intubating laryngeal mask airway (ILMA) in phase two. In phase three, paramedics were to follow the protocol of attempting one ETI, and if they failed, use the ILMA.

Results: Fifty-three patients were enrolled in phase one. Thirty-three were intubated on a first attempt. Twenty patients required multiple attempts with eight presenting without a definitive airway. Twenty-six patients were enrolled in phase three. Eight-teen were successfully intubated on the first attempt. Of the remaining eight patients, paramedics went out of protocol five times. The other three were successfully intubated with the ILMA. Overall, paramedics had an 85% intubation success rate after multiple ETI attempts in phase one. In phase three, paramedics had a 92% intubation success rate (100% ventilation rate using ILMA) using either ETI or the ILMA.

Conclusions: Phase three saw a substantial decline in the number of patients without a definitive airway. This study was limited by study size in phase three and is subject to inherent reporter bias. This study shows potential for the ILMA. More work is still needed to demonstrate its role in the pre-hospital field.

B19

Title: *Outcomes and Complications of Stage One Allograft Sling Breast Reconstruction with Tissue Expander Placement in the Community Setting*
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Introduction/Objectives: Reconstruction of the breast is the standard of care for post-mastectomy patients. Contemporary techniques in breast reconstruction use acellular dermal allograft to sling the inferior and lateral portion of the breast with use of a tissue expander as the first of three stages followed by permanent implant placement and nipple/areola reconstruction. This method of reconstruction offers patients with timely, consistent and cosmetically pleasing results. Allograft reconstructions are well-documented at large academic medical centers, but little is documented regarding the results of this technique in the community setting.

Methodology: After institutional review board approval, a retrospective chart review at a single institution of immediate stage one allograft sling tissue expander breast reconstruction was done for 24 patients with 28 total reconstructions. Each was evaluated for risk factors of tobacco history, body mass index (BMI), presence of diabetes, use of corticosteroids, and need for chemotherapy or radiation. The data was analyzed for correlation with post-operative complications of seroma, hematoma, abscess, cellulitis, wound breakdown, skin flap necrosis, implant failure, need for removal of implant, and death.

Results: A statistical significance was found between overall complication rate and a BMI greater than 35 ($p=0.008$). There was no significant difference found for any of the other variables.

Summary/Conclusion: Allograft breast reconstruction can be performed safely and effectively in the community setting. However, patients with a BMI >35 are at increased risk for complications. Therefore, these patients should be extensively counseled preoperatively regarding these risks. Physicians may need to look to other techniques for reconstruction.

B20

Title: *Are we screening for causative factors in ADHD? A retrospective chart review evaluating for documentation of sleep history and throat exam prior to the initial diagnosis of ADHD.*

Authors: Erin Perkey Nienaber, DO and Carl Backes, DO

Affiliation: Nationwide Children's Hospital and OhioHealth/Doctors Hospital Columbus

Objectives: Multiple studies have linked sleep disorders with children who have been diagnosed with DSM-IV defined ADHD. Several clinical studies have shown improvement in behavioral symptoms or neurocognitive measures after treatment of coexisting sleep disorders. One hundred charts from the primary care clinics of Nationwide Children's Hospital were reviewed to determine if the clinics were screening for sleep disordered breathing in addition to completing a throat and mouth examination.

Method: A retrospective chart review of the primary care clinics of Nationwide Children's Hospital was conducted on 100 children ages 5-12 who received an initial diagnosis of ADHD between January 2008 and December 2010. The charts were evaluated for documentation of sleep history, along with documentation of mouth and throat examination.

Results: Based on the review of 100 charts, only 10% showed documentation of a sleep history on the initial evaluation of a child with ADHD. A mouth and throat examination was documented in 13% of charts reviewed during the study. Only 6% of charts demonstrated documentation of both a sleep history and mouth and throat examination. Of the 100 charts reviewed, 83% did not include either a sleep history or mouth and throat examination.

Conclusions: Based on the retrospective chart review the majority of children diagnosed with ADHD at Nationwide Children's Hospital primary care clinics have no documentation that they were questioned about sleep or that a mouth and throat exam was performed prior to labeling them with ADHD or prescribing stimulant medications. Because ADHD is a clinical diagnosis, as health care providers, all other possible causative factors should be considered prior to giving a diagnosis.

B21

Title: *Use of a Controlled Fast for the Treatment of Severe Insulin Resistance in Patients with Type 2 Diabetes*

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Ohio University College of Osteopathic Medicine

Introduction: Patients with type 2 diabetes and severe insulin resistance often require large doses of insulin to achieve target glycemic control. As insulin dose increases over time, patients frequently have reduced treatment benefits and suffer unfavorable metabolic side effects including weight gain and increased hunger.

Objective: The purpose of this IRB-approved study is to describe our experience on the effect of a controlled, prolonged fast on insulin requirements, hyperglycemic control, and weight loss in patients who have type 2 diabetes and severe insulin resistance.

Methodology: A total of 15 patients completed 18 controlled, prolonged fasts, consisting of carb-free clear liquids. Up to six months of pre-fast and post-fast data was collected and assessed for the effects on HbA1C, total insulin requirements, weight, and BMI. The majority of the fasts were 72 hours long and occurred at home under medical supervision. Insulin was reduced by 50% in the first 36 hours and then adjusted individually. The mean HbA1C, insulin requirements, weight, and BMI were 10%, 275 units, 266 pounds, and 39.7 pre-fast; 8.62%, 132 units, 258 pounds, and 38.3 at 2 weeks post-fast; and 9.20%, 144 units, 242 pounds, 34.9 at 2-6 months post-fast, respectively. There were 2 episodes of mild hypoglycemia reported, neither of which required medical intervention.

Conclusion: Based on our findings, patients with type 2 diabetes and severe insulin resistance can be treated safely at home with a prolonged, controlled fast to achieve better glycemic control on smaller doses of insulin with continued weight loss and reduction in BMI.

B22

Title: *Hardware Associated Complications in Simple Olecranon Fracture and Osteotomy Fixation*

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Introduction: Tension band wiring (TBW) of simple, transverse olecranon fractures and olecranon osteotomies has historically been an effective method of fixation. Newer technology has brought about alternative fixation options, such as intramedullary screws, lag screws, and locking plates.

Objective: The incidences of hardware irritation, secondary procedures, and associated union rates of the various types of fixation were examined and compared.

Methodology: A retrospective review was performed of cases of simple, transverse, non-comminuted olecranon fractures and olecranon osteotomies employed during intra-articular distal humerus fracture fixation. Exclusion criteria consisted of age under 18, less than two year follow-up, any fracture or osteotomy not amenable to tension band wiring, and fixation limited to TBW, plate, or transcortical screw fixation. The incidences of hardware failure, hardware irritation, secondary procedures including hardware removal, union/nonunion, and infection were recorded. $P \geq 0.05$.

Results: A total of 67 patients met inclusion criteria. TBW fixation was used in 30 cases, compared to 17 and 20 in the transcortical and plate fixation group, respectively. An increased incidence of symptomatic hardware was noted between tension band wiring and both plating ($p=0.05$) and 4.0mm lag screws ($p=0.004$). Significantly higher incidence of secondary procedures was also performed in the TBW patients compared to plating ($p=0.026$), especially necessitating hardware removal when compared to 4.0mm lag screws ($p=0.039$). No difference in union or infection rates amongst the fixation types was noted ($p > 0.05$).

Conclusion: Tension band wiring of simple, non-comminuted olecranon fractures and olecranon osteotomies results in a significantly higher incidence of symptomatic hardware and secondary procedures such as hardware removal.

B23

Title: *An Examination of Chagas Disease Profile and Myocardial Manifestations in El Salvador*

Authors: Kushal Patel, OMS II, Paul Cadamagnani, DO
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Affiliation: Godwin Dogbey, PhD, Centers for Osteopathic Research and Education
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Introduction: Chagas disease is an endemic infection in Central and South America that affects millions of people within those countries. Even with advancements in the field of cell biology, electrocardiograms (ECGs) are still one of the best ways to diagnose heart conditions associated with Chagas disease. Research on Chagas disease using ECGs is limited.

Objective: Our goal for this study was to determine how common cardiac abnormalities in the El Salvadorian population were infected by Chagas disease.

Methodology: Over the course of a two-week study, 420 random patients were screened, all of whom were asymptomatic for Chagas disease. Immunodiagnostic assays on these patients' blood revealed 24 people with the disease, of which 32% had some ECG abnormality. This suggests that only few people are screened for heart problems in the population.

Results: From those diagnosed with the disease, 25% showed a bundle branch block on their ECG. Results from analysis showed a statistically significant association between Chagas disease and ECG changes.

Conclusion: This study is important because trends in the United States immigration data portray a likely increase in the prevalence of Chagas disease in United States. This necessitates better understanding of thorough methods of patient screening for Chagas disease by United States physicians.

B24

Title: *Screening for Iron Deficiency in Infants with Anemia*

Author: Pillai Prasanth, DO

Affiliation: Ohio University College of Osteopathic Medicine

Introduction: This retrospective study looked at the proficiency of one primary care center in addressing the etiology of anemia found in 12 and 24-month old infants. This study includes a chart review of infants diagnosed with anemia and the prevalence of iron studies in these particular patients' work up.

Background: Iron deficiency in the growing infant is not screened for specifically in the well-child visit. In fact, iron deficiency is usually assumed when anemia presents itself on scheduled blood draws for anemia and lead exposure at the 12 and 24-month well-child visits. The assumption is appropriate since iron deficiency is the most common cause of anemia in childhood. Appropriate laboratory studies to confirm iron deficiency are now required.

Methodology: A chart review was conducted of all 12 and 24-month old well-child visits from September 1, 2010 through October 31, 2010 at the Hilltop Primary Care Center. Anemia was designated as <10.5 g/dL for 12-month old infants and <11.5 g/dL for 24-month old infants. Of the patients diagnosed as anemic, the presence of further blood work up was investigated, with particular attention given to iron studies.

Results: Fifty-three charts were reviewed. None of the patients found to be anemic (5/53) received any further laboratory studies.

Conclusion: Appropriate studies were not conducted to confirm iron deficiency in the patients found to be anemic. Prevention of long-term neuro-cognitive effects due to iron-deficiency should motivate the establishment of iron studies as a standard in the treatment of anemia.

B25

Title: *Health Conditions Related to the Use of Unsanitary Water in Rural Mexico: A Study of Tamaula, Guanajuato, MX*

Authors: Emilie Prot, BS, OMS I, Ohio University College of Osteopathic Medicine
and Karen Richman, PhD, University of Notre Dame

Affiliations: Gillian Ice, PhD, MPH, Ohio University College of Osteopathic Medicine
Godwin Dogbey, PhD, Centers for Osteopathic Research and Education
Ohio University College of Osteopathic Medicine

Objectives: To study health conditions related to the use of unsanitary water in Tamaula, a rural ranching town in Mexico. In particular, the study focused on determining prevalence and age distribution of such diseases in the community.

Method: Heads of household in the rancho were interviewed individually or with family members. Additional data were collected from household surveys.

Results: Chlorinated water for drinking and cooking is supplied to each household every 9 to 10 days from the City of Irapuato. Powdered lime stone is added to water from a reservoir to use for laundry and bathing purposes. However, when the chlorinated water is depleted, the reservoir-water is used for drinking and cooking. Thirty individuals from the 250 people surveyed reported water-related health conditions such as skin irritations, gastritis, diarrhea, typhoid, and hepatitis. Participants younger than 10 years and those 51 years or older were the most affected by diseases related to unsanitary water use compared to those individuals between 31 and 40 years.

Conclusion: Waterborne diseases are still highly prevalent in rural areas such as Tamaula. Limited access to clean water and the use of unsanitary water may be at the root of waterborne diseases in Tamaula. Children and the elderly are affected more by reoccurring illnesses than any other age group. More aggressive public health action is needed to curb the high prevalence.

B26

Title: *Medicinal Plant Use and Traditional Medicinal Practices in Rural Mexico: A Case Study in Tamaula, Guanajuato, MX*

Authors and: Emilie Y. Prot, BS, OMS I, Gillian Ice, PhD, MPH
and Ohio University College of Osteopathic Medicine

Affiliation: Godwin Dogbey, PhD, Centers for Osteopathic Research and Education
Ohio University College of Osteopathic Medicine

Objectives: We studied the traditional health practices in Tamaula, a Mexican village, in order to understand the extent of knowledge of the people in herbal medicines. We wanted to determine if a gender differential in the knowledge and use of herbal remedies exists, and if there is an association between herbal remedy knowledge and education. We also desired to determine the level of satisfaction of the inhabitants from the use of herbal remedies.

Methods: Data were collected from in-person household interviews and surveys about inhabitants' use of specific herbs for curative purposes. The survey listed 24 commonly used plants. All 48 participants surveyed in the study had used herbal remedies.

Results: Ailments usually treated by the 24 plants consisted of gastrointestinal (19), cough and cold (6), external wound care (5), and urinary infections (2). Additionally, 18 local plants were identified during the interviews along with 5 animal parts. Women participants knew slightly more plants than their male counterparts. Two women who attended high school showed lower plant knowledge than the other participants. The participants in the personal interviews shared stories of how plants and animal parts were used and cured illnesses in children.

Conclusions: The use of medicinal plants in Tamaula is widespread. Both male and female participants displayed wide knowledge of the plants but women demonstrated more knowledge than men. The increased knowledge of women may be attributed to the fact that they take charge of family health issues. Herbal knowledge is negatively associated with education. The participants have expressed satisfaction with their use of herbs through their own narratives.

B27

Title: *Implications of Gastrointestinal Complications of Chagas Disease*
Authors: LaQuatre Rhodes, BS, OMS II, Ohio University College of Osteopathic Medicine
and Godwin Dogbey, PhD, Centers for Osteopathic Research and Education
Affiliations: Ohio University College of Osteopathic Medicine

Introduction: The purpose of this study was to detect the current prevalence of Chagas disease in El Salvador and the association of gastrointestinal complications of those infected compared to normal subjects.

Methods: The study included 331 participants who were 18 years old or older. Each patient was asked about their previous history of gastric ulcers, gastroesophageal reflux disease (GERD), and gastritis. A serum sample was collected, and Chagas disease was screened using InBios Trypanosoma Detect Rapid Test, which is a rapid assay that provides visual detection of antibodies to *T. cruzi*. The symptoms criteria list included: dysphagia, weight loss (intentional or unintentional), constipation, and malnutrition, which was assessed by body fat skin folds. Patients experiencing at least 2 symptoms from this list were considered more likely to have gastrointestinal complications associated with Chagas disease.

Results: There was a 7.3% (24 out of 331) prevalence of Chagas disease found in the 331 patients screened. Dysphagia and low body fat percentage were found in 2 patients. Dysphagia and constipation were found in 1 patient. Dysphagia and weight loss were found in 3 patients. Weight loss and constipation were found in 1 patient.

Conclusion: An implication of gastrointestinal complications due to Chagas disease in this study population could not be made because none of the Chagas-positive patients' symptoms met the statistical significance criteria to reveal a true difference from the Chagas-negative group.

B28

Title: *Accuracy of the Clinical Assessment of Anemia in El Salvador*
Authors: Laura Romstedt, OMS II, RD, David Drozek, DO, Gillian Ice, PhD, MPH
and Ohio University College of Osteopathic Medicine
Affiliation: Godwin Dogbey, PhD, Centers for Osteopathic Research and Education
Ohio University College of Osteopathic Medicine

Background: Anemia has been known to cause decreased quality of life and increased mortality. One of the most reliable ways to screen for anemia is with hemoglobin values, yet the tests are costly. Since a history and physical examination may be more affordable and accessible, clinical assessments have become important.

Objectives: To determine the prevalence of anemia in a subpopulation of El Salvador. We also desired to determine the sensitivity and specificity of the clinical diagnosis of anemia and to determine if there is a difference in accuracy based on training background.

Methods: The subjects were selected from medical brigades in El Salvador. Each subject was sent for hemoglobin testing and assessed by a physician or supervised student. The provider was asked, "Is this person anemic, yes or no?" Following the assessment, hemoglobin values were read by a third party and anemic patients were treated.

Results: Of 483 subjects, the prevalence of anemia was 24%, with 90% being mildly anemic. The sensitivity and specificity of the clinical diagnosis was 28% and 79% respectively. Statistically significant differences were found between the diagnostic accuracy, especially sensitivity and specificity, between Canadian residents, U.S. residents, and Salvadorian physicians. Canadian residents and U.S. residents had the highest sensitivity and specificity of 44% and 94% respectively.

Conclusion: The high prevalence of anemia should be investigated. The low sensitivity found suggests that physicians may require further training to accurately diagnose anemia without laboratory values, or that a physical and history examination alone may not suffice to diagnose anemia, particularly mild anemia.

B29

Title: *Adiponectin Protects Against Hyperoxic Lung Injury and Vascular Leak*
Authors: Sean M. Sliman, OMS II, Ohio University College of Osteopathic Medicine
and Rishi B. Patel, Jason P. Cruff, Sainath R. Kotha, Christie A. Newland, Carrie A.
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Introduction: Adiponectin (Ad), an adipokine exclusively secreted by the adipose tissue, has emerged as a paracrine metabolic regulator as well as a protectant against oxidative stress. Pharmacological approaches of protecting against clinical hyperoxic lung injury during oxygen therapy/treatment are limited. Earlier, we have reported that Ad inhibits the NADPH oxidase-catalyzed formation of superoxide from molecular oxygen in human neutrophils.

Objective: Having this as the premise, we conducted studies to determine whether (i) exogenous Ad would protect against the hyperoxia-induced barrier dysfunction in the lung endothelial cells (ECs) in vitro and (ii) endogenously synthesized Ad would protect against hyperoxic lung injury in wild type (WT) and Ad-overexpressing transgenic (AdTg) mice in vivo.

Results: The results demonstrated that exogenous Ad protected against the hyperoxia-induced oxidative stress, loss of glutathione (GSH), cytoskeletal reorganization, barrier dysfunction, and leak in the lung ECs in vitro. Furthermore, the hyperoxia-induced lung injury, vascular leak, and lipid peroxidation were significantly attenuated in AdTg mice in vivo. Also, AdTg mice exhibited elevated levels of total thiols and GSH in the lungs as compared to WT mice.

Conclusion: For the first time, our studies demonstrated that Ad protected against the hyperoxia-induced lung damage apparently through attenuation of oxidative stress and modulation of thiol-redox status.

B30

Title: *Ethanol Lock Study to Prevent Catheter-Related Bloodstream Infections (CRBI)*

Authors: Jeffrey J Kaufhold, MD, Jack Bernstein, MD, Gregory Volk, DO, and Sarah K Sundet, DO

Affiliation: Grandview Medical Center

Introduction: Yearly in the United States, an estimated 80,000 catheter-related bloodstream infections (CRBI) occur, accounting for up to 28,000 deaths among ICU patients alone. Average treatment cost for this type of infection is \$45,000, with annual costs up to \$2.3 billion in the entire United States. Antibiotic, anticoagulant, ethanol and other lock agents have been used to treat infected catheters, but no treatment has yet been proven to prevent the infections.

Objectives: To determine if the use of ethanol lock treatment is as or more effective than standard current treatment for preventing catheter-related bloodstream infection in long-term indwelling catheters.

Methodology: Patients will be identified with different indwelling catheters and ports including: hemodialysis catheters, PICC lines and groshong catheters for various uses. A double blind approach will be used to treat the patients with either ethanol or standard catheter care. Patients in the treatment arm of the study will get 35% ethanol plus heparin (1000 units/cc) instilled into the catheter at the end of each treatment. The ethanol solution will dwell until the next treatment. Those in the non-treatment arm will have the standard infection prevention treatment.

Results: The study is currently underway and no data is available at this time.

Summary/Conclusion: Ethanol lock treatment to prevent CRBI has been studied but no conclusion has been drawn about its effectiveness, or its superiority, to standard indwelling catheter care. We hope to contribute to the pool of data to eventually draw a conclusion as to the best modality to prevent CRBI.

B31

Title: *Effects of Osteopathic Manipulative Treatment on Pulmonary Function of Patients with Cystic Fibrosis*

Authors: David Swender, DO, Nationwide Children's Hospital and
and Richmond Medical Center/University Hospital, Case Medical Center

Affiliations: Gina Thompson, DO, Kristen Archdeacon, DO, Karen McCoy, MD,
Alpa Patel, MD
Richmond Medical Center/University Hospital, Case Medical Center

Introduction: Cystic fibrosis affects 30,000 people in the United States. One treatment modality that has not been studied as a therapy for cystic fibrosis is osteopathic manipulative treatment.

Objectives: To determine whether OMT leads to greater improvement in pulmonary function tests of CF patients compared to standard therapies. To determine whether OMT-treated CF patients report less difficulty breathing, pain, or anxiety.

Methods: Patients aged 18 or older with cystic fibrosis were randomized to a standardized OMT treatment protocol or sham group while admitted for pulmonary exacerbation. They received daily treatments, or sham, for 4-6 days. During this time, standard inpatient therapy was also administered. Primary outcome measures were changes in pulmonary function tests before and after enrollment in the study. Secondary measures included change in vital signs and questionnaire data describing quality of breathing, anxiety and pain levels.

Results: Preliminary data from 21 enrolled subjects was collected. Both the OMT and sham groups showed significant improvements in their PFTs. There were no significant differences between treatment groups in any of the outcome measures. There was no significant effect based on the number of treatments administered.

Conclusions: Initial data show no significant difference in improvement of PFTs. Possible confounding variables may include elements of standard therapy that achieve similar therapeutic results as OMT and using a set amount of time for individual OMT treatments rather than completing treatments when tissue texture changes are appreciated. A larger sample size may be necessary to detect differences between OMT and sham groups.

B32

Title: *Wavelet Analysis of Oscillations in Cutaneous Erythrocyte Concentration in Response to Local Heat Stress*

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Introduction: The mechanisms controlling cutaneous blood flow are complex and result in regional differences in vasoactive perturbations. Previously, increases in skin blood flux spectral power were observed in local heating-induced vasodilation. Skin blood flux as assessed by laser Doppler flowmetry (LDF) contains both erythrocyte velocity and concentration components.

Objectives: This project was designed to expand knowledge of the mechanisms of cutaneous blood flow oscillations in the palm, forearm, forehead and cheek by measuring erythrocyte concentration (an index of luminal diameter and venous volume) during a local vasodilatory challenge.

Methodology: In 7 young, healthy participants (mean age 24 ± 2.4 y), Fourier and wavelet analyses were used to calculate the spectral power of frequency oscillations within the erythrocyte concentration LDF signals. We predicted the following: 1) Similar oscillatory frequency peaks in erythrocyte concentration will be observed among sites; 2) Local heating will increase erythrocyte concentration; 3) The spectral power of oscillations in erythrocyte concentration will increase.

Results: All LDF sites showed increased erythrocyte flux and concentration in response to local heating. Heating reduced, rather than increased, spectral power of oscillations in concentration.

Conclusion: These data suggest that oscillations in flux, previously identified to increase with local heating, are dependent on velocity rather than concentration changes. Because increased luminal diameter and venous volume have opposite effects on spectral power compared to velocity, conditions or disease states such as Rosacea which have altered erythrocyte concentration, should be accounted for prior to binning spectral power into frequencies known to correspond to physiologic control mechanisms.

B33

Title: *You're Only Old Once! Assessing Diabetes Mellitus Management in Extended-Care Facilities*

Authors: Brittney M. Vajen, OMS II, Rachel Holt, DO, Tracy Marx, DO, and
and Frank Schwartz, MD, Jay H. Shubrook, Jr., DO

Affiliation: The Ohio University College of Osteopathic Medicine

Purpose: To assess the management of Type 1 and Type 2 diabetes mellitus in extended-care facilities and to compare those findings with the American Diabetes Association (ADA) standards of care for ambulatory adults.

Methods: A chart review of 245 patients in 14 long-term care facilities. Eligibility for this study was based on physician-documented diagnosis of Type 1 or Type 2 DM and a stay of at least 3 of the past 12 months in the facility. Medical diagnoses, medications, laboratory reports, and consultation notes were reviewed. Management of diabetes was compared to the American Diabetes Association Standard of Care for ambulatory adults.

Results: Of the 245 patients reviewed, 211 (86.1%) had their glucose monitored. Approximately 72% residents had a GHb at or below 8.0%. Hypoglycemic episodes were experienced by 52 (24.6%) patients, and 103 (48.8%) had hyperglycemic episodes. Blood pressure was monitored in 240 (98%) patients. Dilated eye exams were given to 133 (54.3%) patients. Foot exams were performed on 76.3% of patients; 69.4% were consulted by a podiatrist.

Conclusions: The management of diabetes in long-term care patients does not meet the criteria the ADA has recommended for the care of ambulatory adults. While 72.2% of patients met the GHb goal, the GHb did not account for glucose variability. The outcome suggests that a new standard should be established for patients residing in a nursing facility. This model should take into account the particular needs of this patient population, namely hypoglycemic risk, cardiovascular risk factors, and quality of life issues.

B34

Title: *Correlation of Increased Uric Acid Levels with Elevated URAT1 mRNA Levels in Type 2 Diabetic Rats*

Authors: Matt Wooten, OMS II, Yuriy Slyvka, MD, PhD and Sharon Inman PhD

Affiliation: Department of Biomedical Sciences
Ohio University College of Osteopathic Medicine

Introduction: Increased uric acid levels have been evaluated in Type 2 diabetes mellitus (T2DM) patients but the mechanism involved in this process is not known.

Objectives: Urate is a waste product formed as result of purine metabolism. Some of the urates are reabsorbed into the bloodstream. Urate transporter 1 (URAT1), located in the epithelial cells of the proximal tubule, is responsible for the reabsorption. T2DM may play a crucial role in up regulating urate transporter (URAT1) mRNA levels leading to increased uric acid levels and gout.

Methodology: Obese Zucker rat is established model of T2DM also associated with elevated levels of uric acid. The experiments will be conducted on 8 Lean and 8 Obese Zucker rats. Plasma level of uric acid will be tested. URAT1 mRNA expression in proximal tubules will be quantified by real-time RT/PCR. URAT1 protein levels will be assessed by immunofluorescence staining of kidney sections.

Results: The study is now in progress and supposed that elevated URAT1 mRNA levels are leading to increased uric acid levels. This can lead us to detect changes at the protein level and further investigate the pathway in which T2DM up regulates the URAT1 gene to cause increased levels of uric acid and gout. If this pathway is discovered, clinical treatments can be developed to attack this pathway and derail this major complication of T2DM.

Summary: We expect that elevation of URAT1 mRNA levels is correlated with increased levels of uric acid in diabetic subjects.

POSTER COMPETITION – CASE REPORTS

C1

Title: *Brugada's Syndrome Diagnosed in a Patient Presenting with Seizure-Like Activity*

Author: Robert Anderson, DO

Affiliation: Botsford Hospital, Farmington Hills, MI

Background: Brugada's syndrome is a cardiac abnormality of the sodium channels on myocardial tissue which is exhibited in a classic electrocardiogram (EKG) pattern that can lead to tachydysrhythmias and subsequent sudden cardiac death. The prevalence is between 0.4-1% and is responsible for 4-5% of all sudden cardiac deaths. The presentation can vary and this classic EKG pattern is not always apparent on the EKG.

Observation: Emergency medical services responded to a 34 year old male who was having seizure-like activity. The patient was noted to have an accelerated heart rate of 172 beats per minute and given multiple injections of midazolam to control his seizure. The patient was transported to the emergency department where he was well known in the system as being non-compliant with his anticonvulsants and admitted for status epilepticus. An EKG performed in the intensive care unit revealed that the patient had Brugada's syndrome, which had not been present on an EKG from a previous admission.

Conclusion: We present a case of Brugada's syndrome that needed an underlying event to trigger the classic EKG pattern. It is important for the emergency room physician to have a high level of suspicion for Brugada's syndrome, to know the EKG and clinical diagnostic criteria, and to recognize the triggers that may induce the classic EKG appearance. To help prevent sudden cardiac death, further research is needed to investigate other triggers of Brugada's syndrome and its subsequent tachydysrhythmias.

C2

Title: *The Pen is Mightier than the Scalpel: Aspiration of Foreign Body during a Seizure Causing an Unexpected Delivery*

Author: James T. Barber Jr., DO

Affiliation: Department of Obstetrics and Gynecology, Pinnacle Hospital, Harrisburg, PA

Case Description: A 27 year-old Mennonite woman, gravid 9 para 8 at 37 weeks of pregnancy presented with complaints of a worsening cough with shortness of breath over the past several months. Her history included 8 term vaginal deliveries at home without complications and a known seizure history. The patient's cough had started after a dental procedure, approximately 7 months prior. A physical examination revealed an appropriately grown fetus with normal amniotic fluid for her gestational age. The vital signs were stable and she was afebrile. Lungs were clear to auscultation with decreased breath sound in the left lower base. A chest x-ray revealed normal findings other than a 7 x 14 mm radiopaque foreign object in the left lower lobe.

Discussion: The patient was delivered by an uneventful cesarean section due to labored respirations and inability to tolerate labor. Attempted removal of the object after delivery by fiber optic bronchoscopy was unsuccessful and the patient subsequently underwent a left lung lower lobectomy. The pathology report revealed a metallic cone-shaped foreign body. The object was consistent with the tip of a ball point pen. (Figure 3) The patient's husband, upon questioning, recalled her having a seizure months prior. He placed a pen into her mouth to prevent her from biting her tongue. Her post-operative course from both procedures was uneventful and she was discharged home after one week with a healthy baby.

Conclusion: This case reiterates the need for thorough history in all patients.

C3

Title: *Molar Pregnancy and Concomitant Live Intrauterine Pregnancy within Two Separate Horns of Bicornuate Uterus: An Unreported Event*

Author: Nathan Bennington, DO

Affiliation: Grandview Medical Center

Objective: To present to the scientific community an undocumented phenomenon of a coexisting live intrauterine pregnancy (IUP) and a molar pregnancy each within a separate horn of a bicornuate uterus. To review the scope of Mullerian duct abnormalities, detail the pathology and natural progression of gestational trophoblastic disease, and discuss the clinical relevance of such a unique case.

Methods: Extensive literature searches were performed, and numerous articles were reviewed from obstetrical, radiological, and general medical journals, texts, and online publications.

Results: No previous cases of an IUP coexisting with a molar pregnancy within a bicornuate uterus are documented in medical literature. Although there have been documented cases of molar pregnancies with concomitant live IUP's, no cases have been documented in which this situation has occurred within a bicornuate uterine anomaly.

Conclusion: The case in question is truly an undocumented phenomenon. Given the unique clinical situation presented in this case report, the medical community is presented with a new clinical dilemma in obstetric management. Accordingly, there are no studies concerning this exceptional situation to guide physicians in advising patients as to the likelihood of carrying the IUP to term, delivering a normal baby, or of increased risk of obstetrical complications.

C4

Title: *C2 Deficiency in a 3 Year Old Male*
Authors: Lyndsy Boggs, DO, David Swender, DO, Leah Churnin, DO,
Hiag Tchjrchian, MD, Robert Hostoffer, DO
Affiliation: Richmond Medical Center/University Hospital

Introduction: Deficiencies of the complement system may occur in both the classical and alternate pathways and are rare. C2 deficiency is one of the most common of these disorders. This type of deficiency may present with recurrent infections.

Case Description: HP is a three year old male who's first infections (AOM) occurred at 4 months of age. He has experienced 5 pneumonia infections in his life, the first occurring at 9 months of age. Attempts to decrease the number infections included prophylactic antibiotics, IVIgG, tonsillectomy/adenoidectomy without avail. Additionally, the patient was diagnosed with polyarticular juvenile rheumatoid arthritis which was associated with episodes of fever and lymphadenopathy. The family history revealed a brother who experienced Kawasaki disease and maternal and paternal grandparents with rheumatoid arthritis. Laboratory evaluation showed normal lymphocyte populations, immunoglobulins, and antibody responses to both protein and polysaccharides. The CH50 was absent and AH50 was normal. Further evaluation of the classical complement system showed an absence of C2 function. The patient was started on prophylactic antibiotics.

Conclusion: We present a rare case of C2 deficiency in a 3 year old male with JRA. This case shows the dual effect of a complement deficiency on both the propensity to develop both recurrent infections and an autoimmune disorder in the same pediatric patient.

C5

Title: *Posterior Sternoclavicular Dislocation*
Authors: John Casey, DO, MA and Marus Topinka MD
Affiliation: OhioHealth/Doctors Hospital Columbus Department of Emergency Medicine

Introduction: Posterior sternoclavicular dislocation is a relatively rare and easily unrecognized traumatic injury. The close proximity of critical anatomic structures such as the trachea, great vessels, esophagus, pleura, and brachial plexus create the potential for catastrophic complications from this injury and thus prompt, accurate diagnosis is essential.

Case Description: This case reports a patient that had suffered a fall onto an outstretched hand twelve hours prior to emergency department presentation. Subtle radiographic changes on chest radiograph were suspicious for posterior sternoclavicular dislocation and prompted further evaluation. CT scan confirmed this diagnosis and the patient subsequently underwent an operation for percutaneous reduction. Following initial repair, she spontaneously dislocated, requiring definitive management by open reduction with ligament stabilization and repair.

C6

Title: *Ovarian Mucinous Cystadenoma- A Rare Tumor*

Authors and: Folabo Y. Dare, MS III, Des Moines University, College of Osteopathic Medicine

Affiliations: Carl R. Backes, Ohio University College of Osteopathic Medicine

Introduction: Ovarian mucinous cystadenomas are a benign tumor that account for 15% of all ovarian neoplasms. These tumors are often incidentally diagnosed, and typically cause symptoms such as increased abdominal girth and pelvic pain.

Case Description: We report a Down syndrome patient who initially began having behavior and mood changes around 11 years old. She was evaluated by psychiatry, neurology, adolescent gynecology, and a Down syndrome center without definitive answers. The symptoms worsened over several years, even with numerous medication trials. She eventually presented to the emergency room at 17 years old with abdominal pain. A subsequent CAT scan of the abdomen and pelvis revealed a large mass in the right lower quadrant of the abdomen. Upon removal of the ovarian tumor, all multi-system complaints disappeared and all medications were discontinued. Pathology classified the tumor as a benign mucinous cystadenoma.

Retrospectively, her symptoms resemble that of paraneoplastic encephalomyelitis (PEM), a syndrome typically associated with malignant neoplasms, most commonly small cell lung cancer and, occasionally, ovarian teratomas.

Discussion: To our knowledge, this is the first report of a possible PEM associated with an ovarian non-teratoma. A positive diagnosis in this case was further compounded by the patient's inability to fully communicate her symptoms.

Conclusion: This case provides several clinical implications: (1) PEM could be associated with benign ovarian mucinous cystadenomas; (2) when a young woman presents with acute psychiatric and neurologic symptoms, a paraneoplastic disorder associated with an ovarian tumor should be included in the differential.

C7

Title: *Ethambutol Toxicity Exacerbating the Phenotype of CMT2A2*

Authors: Ekokobe Fonkem, DO, M. Skordilis, BS, A. Epstein, MD, J.T. Kissel, MD and V.H. Lawson, MD

Affiliation: Department of Neurology, Ohio State Medical Center

Background: The mitofusion 2 (MFN2) gene encodes a mitochondrial transmembrane GTPase, involved in mitochondrial dynamics, associated with Charcot-Marie-Tooth type 2 (CMT2A2). Mutations in another gene encoding an outer mitochondrial membrane protein involved in mitochondrial dynamics, GDAP1, has been linked to CMT with vocal cord paralysis. The toxicity of ethambutol is thought related to mitochondrial function. We describe a 69 year old female with CMT2A2 who developed accelerated weakness, followed by hoarseness, dyspnea and vocal cord paralysis with ethambutol.

Case Description: The patient developed gait instability in the second decade prompting neurologic evaluation. Electrophysiologic examination revealed a moderately severe, axonal, sensorimotor neuropathy. Genetic testing confirmed a non-synonymous amino acid substitution in exon 7 of MFN2 (T669G, F223L). The patient required AFOs in her early 60's but did not require other assistive devices for ambulation. Her clinical course was complicated by Mycobacterium Avium Cellulare pneumonia due to a pre-existing condition of bronchiectasis. Within 4-6 months of initiating ethambutol therapy for MAC pneumonia, she required a walker for ambulation and developed hoarseness of her voice. Her hoarseness progressed to vocal cord paralysis with severe dyspnea and worsening restrictive pulmonary function (31% predicted). Optic neuropathy developed at 26 months after initiating therapy. Ethambutol was discontinued due to her clinical deterioration with stabilization of her neurologic examination and subjective improvement in the progression of weakness and dyspnea.

Conclusion: Our patient developed sub-acute worsening of her CMT with loss of ambulation, progressive dyspnea, and vocal cord paralysis within 4-6 months after initiating ethambutol therapy, suggesting caution with the use of this antimicrobial agent.

C8

Title: *Osteochondral Autologous Transplantation of the Capitate and Lunate Fossa in Proximal Row Carpectomy*

Author: Krista Irgens, DO and H. Brent Bamberger, DO, FAOAO

Affiliation: Grandview Medical Center

Introduction: Proximal row carpectomy (PRC) is an effective motion-preserving treatment in post-traumatic arthritis of the wrist. However, degenerative changes in the capitulum joint are a contraindication, generally leading to arthrodesis as the appropriate treatment. As an alternative, we performed a resurfacing of the capitate and lunate fossa, using resected carpal bones as osteochondral grafts. We describe the surgical technique and compare our clinical outcome to that of conventional proximal row carpectomy.

Case Description: A 40-year-old white male presented with a 3-year history of progressing right wrist pain. He sustained an injury approximately 20 years earlier which was treated non-operatively in a cast. Pre-operative radiographs indicate advanced degenerative changes and carpal collapse with the lunate dorsally tilted at 75 degrees. Pre-operative pain was reported as moderate to severe with ROM limited to 20 degrees total arc. A standard PRC was performed and matched bone plugs were created with resected carpal bones to replace the lesions of the capitate and lunate fossa.

Discussion: The patient returned to work full-time at 3 months with little to no pain. At his 10-month follow-up, the patient reported no limitations or pain. The total arc of motion increased to 85 degrees (58% of contralateral). His grip strength measured at 60 lbs. (61% of contralateral). These results were comparable to the published literature on conventional proximal row carpectomy.

Conclusion: This technique may serve as another option for motion-preserving salvage procedures in the treatment of advanced osteoarthritis of the wrist in the presence of capitulate changes.

C9

Title: *Congenital Cartilaginous Rests of the Neck: Unrelated Newborn's Born Same Day, Same Hospital*

Authors: Todd L. Jacobs, OMS III, A.T. Still University - Kirksville College of Osteopathic and Medicine

Affiliations: Carl R. Backes, DO, Ohio University College of Osteopathic Medicine,
The Ohio State University College of Medicine
Nationwide Children's Hospital

Case Description: A case of two unrelated newborn babies, delivered the same day at a community hospital, with similar congenital cartilaginous rests of the neck located in identical positions is presented. Both term babies were delivered vaginally without complication. Congenital cartilaginous rests of the neck (CCRN) is a rare congenital abnormality that merits discussion to increase awareness, discuss alternative terms, and learn more of the embryology and other conditions possibly linked to CCRN. CCRN is also called cervical accessory tragus, cervical chondrocutaneous branchial remnant, or wattle. Most agree upon the embryologic origin of CCRN being from branchial remnants, most likely the second branchial arch. These congenital anomalies are benign, easily excised and could be related to other abnormalities.

C10

Title: *Early-Onset Jaundice in a Term Infant*

Authors: LaQuita M. Jones, OMS III, Firelands Regional Medical Center
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Affiliations: Tara S. Williams, MD, FAAP
Jonathan M. Fanaroff, MD, JD
Case Western Reserve University School of Medicine

Introduction: C^w antigen is a minor red blood cell antigen, belonging to the rhesus group. Over the years, the rhesus D antigen has been widely recognized as one of the most important antigens in the pathophysiology of hemolytic disease of the newborn (HDN). However, with the advent and widespread use of Rho(D) immune globulin, some investigators have proposed that minor blood group antigens will become an important factor in the etiology of HDN. The purpose of this case report is to present an incident of HDN secondary to the presence of the C^w antigen on fetal red blood cells.

Case Description: The mother is a 31 year old gravida 2, para 1 (now 2) mother with an unremarkable medical history, negative prenatal screens, and a blood type of A+. Family history of the newborn is positive for neonatal hyperbilirubinemia in an older sibling. The newborn exhibits mild facial icterus at five hours of life, with a transcutaneous bilirubin of 11.2 mg/dL at nine hours of life. Despite early intervention and intense phototherapy, the infant's hyperbilirubinemia is rapidly progressive. The infant's course is so severe that she requires admission to the neonatal intensive care unit, treatment with intravenous immunoglobulin, and two blood transfusions. After being discharged from the hospital, the infant requires re-admission for intense phototherapy during the second week of life.

Conclusion: The ultimate goal of this case report is to raise awareness of red blood cell antigens that have not previously been identified as significant sources of morbidity.

C11

Title: *Periodic fever, Aphthous stomatitis, Pharyngitis, Cervical Adenitis (PFAPA Syndrome), A Case Study*

Author: Dorothea Kadarian BS, OMS IV

Affiliation: Ohio University College of Osteopathic Medicine

Introduction: Periodic Fever, Aphthous stomatitis, Pharyngitis, Cervical Adenitis was first described in 1987 by Dr. Gary Marshall. The symptoms occurred at 4-6 week intervals with each episode lasting under five days. This cycle would occur over periods of years. Dr. Marshall noted that affected children were otherwise healthy with normal development and no evidence of increased susceptibility to infections.

Case Report: A young girl presents to the clinic with two-year history of recurrent fevers, chronic tonsillitis and sore throat. Fevers would occur every other week, and would be accompanied by painful recurrent oral ulcers. Physical exam of the patient yielded no abnormalities and lab tests were within normal limits. Patient was diagnosed with PFAPA syndrome and referred to the otolaryngologist for adenotonsillectomy.

Discussion: A criterion for diagnosis of PFAPA syndrome requires three of more episodes of fever lasting no longer than five days at intervals of 4-6 weeks. Aphthous ulcers, pharyngitis, and cervical lymphadenopathy are also essential for diagnosis. Patients must have normal growth patterns and have no signs of immunodeficiency. If the patient has neutropenia, symptoms of arthritis or neurological defects during attacks, then PFAPA must be excluded. Treatment includes prednisone for symptomatic relief, Colchicine to shorten intervals between attacks, and adenotonsillectomy for resolution of symptoms.

Conclusion: FAPA syndrome is a diagnosis of exclusion with an unknown pathology and possible genetic component. Age of onset is before five years and generally subsides before age eight. Future studies are being aimed at discovering the pathophysiology of PFAPA syndrome and whether or not adenotonsillectomy is efficacious.

C12

Title: *Intensive Insulin Therapy as the Primary Treatment for Type 2 Diabetes*

Authors: Lubaina S. Presswala, BS, OMS II and Jay H. Shubrook, DO, FACOFP

Affiliation: Ohio University College of Osteopathic Medicine

Introduction: Diabetes is a chronic disease of the pancreatic B-cells. The progressive failure of B-cells leads to diminished insulin production, secretion, and sensitivity to muscle and adipose cells. A novel approach to treat newly-diagnosed type 2 diabetes using a pulse of intensive insulin therapy has the potential of resting B-cells, improving their function, and offering lasting glucose control.

Case Description: In this case report, basal - bolus analog insulin was used as primary treatment for type 2 diabetes. A 47 year old male presented with an HbA1c>14%. Insulin was initiated at diagnosis and titrated based on home blood glucose readings to gain tighter glucose control and to reduce glucose toxicity. The insulin treatment lasted 12 weeks with forced titration off of insulin which resulted in no worsening of glucose values. A prolonged reduction in HbA1c for 27 months was observed post insulin therapy without any oral medications or exogenous insulin. Additionally, no severe hypoglycemic episode was reported throughout the treatment period.

Discussion: Primary treatment using intensive insulin provides the possibility of attaining and maintaining recommended HbA1c values post therapy for a sustained period providing a "legacy effect". The potential benefits also include reducing free fatty acid levels, lipid levels, and endogenous glucose production.

Conclusion: This case report supports the use of aggressive insulin early in the disease to gain tighter glucose control, possibly preserve B-cell function and mass, and potentially induce a "diabetes remission". This case report outlines the use of outpatient intensive insulin therapy as the primary treatment for type 2 diabetes.

C13

Title: *Screening for Celiac Disease and Thyroid Disease in Pediatric Patients with Down Syndrome*

Authors: Brian M. Sammon, OMS II, Ohio University College of Osteopathic Medicine
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Background: Patients with Down Syndrome (DS) have an increased risk of developing autoimmune diseases such as thyroid disease and celiac disease (CD). The reported prevalence of CD in DS populations varies between 4% and 17%, while the reported prevalence of thyroid disease is about 30%. Recognizing these risks, the growing consensus is that DS patients should be universally screened for both diseases.

Objective: To assess the percentage of pediatric patients with DS screened for CD and thyroid disease within the entire Cleveland Clinic Health System, and to determine screening rates among primary care physicians.

Methodology: This retrospective chart review analyzed all 181 patients aged 2 to 20 years seen within the Cleveland Clinic Health System during the years 2005 and 2006 with an ICD-9 diagnosis of DS. A patient was screened for thyroid disease if a thyroid stimulating hormone level was measured and for CD if either endomysial or transglutaminase antibodies were measured.

Results: Two patients were previously diagnosed with CD. Of the remaining 179 patients, 51 (28%) were screened at least once for CD during the years 2005 and 2006. Fifty-three patients were previously diagnosed with thyroid disease. Of the remaining 128 patients, 61 (48%) were screened for thyroid disease during the years 2005 and 2006. Screening rates for both CD and thyroid disease varied significantly by service. While primary care physicians commonly screened for thyroid disease, they did not screen for CD nearly as often.

Conclusions: Enhanced education of primary care physicians is needed to improve screening of patients with DS for associated CD.

C14

Title: *Ulcerative Colitis: Failed Medical Treatment in Adolescent Patient*

Authors and: Brian M. Sammon, OMS II, Ohio University College of Osteopathic Medicine

Affiliations: Carl Backes, DO, Doctor's Hospital/Nationwide Children's Hospital

Introduction: Ulcerative colitis (UC) is characterized by a noninfectious, excessive inflammatory response to microflora of the gastrointestinal tract in genetically susceptible individuals. UC involves the rectum in a majority of cases and can extend proximally. Symptoms include bloody diarrhea, tenesmus, rectal urgency, abdominal pain and anemia. UC affects anywhere from 250-500,000 people in the United States with an incidence of 7-12 per 100,000 population per year.

Case Presentation: An 11 year old black male was seen with diarrhea, fever, nosebleeds, recent poor weight gain and pallor. Laboratory abnormalities included microcytic anemia and an elevated sedimentation rate. The patient was diagnosed with acute ulcerative colitis by endoscopic and histologic examination of the colon. He was started on prednisone, mercaptopurine, lansoprazole and vitamins plus iron. His course became difficult by remissions and complications including rectal bleeding perianal disease, bloody stools and weight loss. He was readmitted after nineteen months of medical treatment with a colonoscopy that showed persistent pancolitis. Surgery was consulted for failed medical treatment of the disease.

Discussion: The clinical picture of UC in pediatric patients can differ from the classical adult presentation in terms of gender preference, location and severity of disease. The issue of puberty and growth also complicates management of pediatric UC. Despite full medical treatment, the literature suggests that up to 25% of UC patients require a colectomy.

Conclusions: UC can be a debilitating disease even in young adults. Clinical symptoms of UC may vary at presentation, especially in pediatric populations.

C15

Title: *Transdermal Metformin for the Treatment of Type 2 Diabetes:
A Case Series*

Authors: Chase Scarbrough, OMS III, Jay Shubrook, DO, Randall Colucci, DO,
Joey Kuhn, OMS II

Affiliation: Ohio University College of Osteopathic Medicine

Introduction: Transdermal metformin is an effective alternative treatment modality in patients with insulin resistance who are unable to tolerate oral anti-diabetic medications. Transdermal metformin can be used in conditions where oral metformin is indicated such as Type 2 diabetes mellitus, pre-diabetes, polycystic ovarian syndrome, and other known diabetes associated disorders.

Case Description: For this study, participants were chosen based on intolerance of oral metformin who showed benefit and need for the medication. The participants were followed for up to one year at which point charts were retrospectively reviewed.

Conclusion: One advantage of using transdermal metformin is its ability to bypass the gastrointestinal system. This allows the drug to avoid the gastrointestinal side-effects associated with oral metformin. A surprising advantage of using transdermal metformin in accordance with this disclosure is a 90% decrease in dosage from the oral preparation.

C16

Title: *A Subcutaneous Plasmacytoma Causing AV Fistula Dysfunction in the Setting of
Multiple Myeloma*

Author: Laura Spranklin, DO

Affiliation: Kettering Medical Center

Case Description: The patient is a 63 year old Caucasian male with a history of IgG light chain Kappa multiple myeloma, previously treated with thalidomide. He presented with a hypervascular, multilobular lesion on his left arm that measured 9x6x6 cm. The lesion appeared approximately one month prior to presentation. The patient was in ESRD and the plasmacytoma appeared to be growing around an AV fistula. Blood flow through the fistula was compromised as seen on the patient's CT angiography. The presentation of a plasmacytoma involving an AV fistula is quite rare; there has been only one documented case report of AV fistula dysfunction secondary to an extramedullary subcutaneous myelomatous

deposit. Upon radiographic examination, the patient's multiple myeloma was found to be widely metastatic and a new soft tissue mass had developed on the patient's head. The patient had the left arm lesion removed and pathology revealed monoclonal plasma cells that were kappa positive and lambda negative. The patient was started on dexamethasone and thalidomide. Approximately three weeks after the patient's initial presentation, the patient died.

C17

Title: *Natural Killer Deficiency and Recurrent Zoster: A Case Presentation and Review of the Literature*

Authors: David Swender, DO, Leah Chernin, DO, Haig Tchjergian, MD and Robert Hostoffer, DO

Affiliations: Allergy Immunology Association, Inc., Cleveland, Ohio
Richmond Medical Center/University Hospital

Introduction: Natural Killer cells (NK) are mono-nuclear cells that effect cytotoxic activity on virally infected cells. Deficiencies of these cells are rare and typically allow the host to experience recurrent varicella infections. We present a case of a patient with such a deficiency who has experienced 7 episodes of zoster.

Case Description: JP is a 40 year old white female who experienced 7 isolated episodes of zoster involving the face over several years. Immunologic evaluation showed normal immunoglobulins, normal antibody responses to pneumococcus, tetanus and varicella. T and B lymphocyte enumeration were normal. The patient had an absolute deficiency of NK cells as well as a NK functional deficiency. In order to prophylaxis the patient against further zoster episodes, the patient was placed on daily valcyclovir. Despite this prophylaxis, she developed a painful right eye conjunctivitis which later grew out varicella. Her spinal tap was normal. She was hospitalized and placed on intravenous anti-vitals.

Conclusion: Natural Killer cell deficiencies are rare. Reported deficiencies are associated with recurrent zoster episodes. We report a 40 year old female with a natural killer cell deficiency with recurrent zoster.

C18

Title: *Tibial Eminence Avulsion in a 4 Year Old*

Authors: Sergio Ulloa, DO and R. Tracy Ballock, MD

Affiliations: Summa Western Reserve Hospital

Introduction: Tibial eminence avulsion injuries occur predominantly in adolescents. This is a case report of a 4-year-old female who presented with a painful swollen knee.

Case Description: Physical examination and history of injury prompted a radiographic analysis showing a type three tibial eminence avulsion. MRI revealed no other intra-articular structural damage and an open repair was completed.

Conclusion: This case stresses the need for appropriate imaging and examination. To our knowledge this is the youngest child reported in literature to have sustained a tibial eminence avulsion.

C19

Title: *Single-Stage Reconstruction of a Large Full-Thickness Scalp Defect with Anterior and Posterior Bipedicled Scalp Rotational Flaps: A Case Report and Review of Literature*

Authors: Azeem Z. Vasi, DO and Charles Zeller, IV, DO

Affiliations: Ohio University College of Osteopathic Medicine
Grandview Medical Center, Department of Otolaryngology/Facial Plastic Surgery

Introduction: We present the case of a 96 year old with a large vertex of scalp surgical defect secondary to full-thickness excision of squamous cell carcinoma. This report describes a novel reconstruction technique with the use of anterior and posterior bipedicled transverse rotational flaps in a single-stage reconstruction.

Case Description: This patient was determined to be an above-average risk as a surgical candidate due to patient age and co-morbidities, and thus a single-stage approach to reconstruction was desired. In this case, secondary to severe alopecia of scalp, aesthetic concerns were not high priority as compared to length of procedure and single staging. A thorough literature review noted that reconstruction using both anterior and posterior bipedicled rotational flaps, as described in this report, to be a novel approach for this type of reconstruction.

Discussion: The patient was followed up to 6 months post-surgery, with no immediate or late post-operative complications. Both donor and reconstruction sites have healed well with only minimal scarring.

Conclusion: In a single fashion, this “bucket-handle” flap, has been used widely for reconstruction, but the use of dual transverse flaps (anteriorly and posteriorly) has yet to be reported in the literature. After thorough literature review (English language), we have concluded that this technique provides a good option when used in a specific patient population. Overall, the dual transverse flap technique can be a good option for reconstruction in patients with large vertex of scalp defects, who need a single-stage procedure, and have little concern of resultant alopecia.

C20

Title: *Rhubarb Anaphylaxis*
Authors: Mara Wise, MS IV, David Swender, DO, Leah Churning, DO,
Haig Tcheurekdjian, MD, Robert Hostoffer, DO
Affiliation: Richmond Medical Center/University Hospital

Introduction: Rhubarb is considered a vegetable. Its characteristic red stalk quickly identifies itself in any grocery store. Used in some countries for its medicinal value, its primary use in the United States is in baking. Allergic reactions to this plant after its ingestion have been rarely reported. We report the first case of anaphylaxis after the ingestion of raw and baked rhubarb.

Case Description: A 36 year old female was noted to have pruritis, tongue swelling, wheezing, and voice change immediately after the ingestion of a rhubarb pie at a local restaurant. She was taken to the emergency room and treated with epinephrine. Her symptoms resolved. Skin testing to strawberry, rhubarb and wheat were negative. RAST testing for rhubarb was negative. The patient was challenged with raw rhubarb in a controlled setting. After the third incrementally larger dose of rhubarb, the patient developed tingling of the throat and dyspnea. Subsequent PFT showed a 20 percent decrease in the patient's FEV1. Epinephrine was administered and the patient's complaints resolved.

Conclusion: Rhubarb is an unusual vegetable infrequently ingested in the common American diet. Allergic reactions have been similarly infrequently reported. We report the first case of anaphylaxis to both baked and raw rhubarb.

C21

Title: *Immediate Cutaneous Urticaria with Exposure to DEET and Picaridin*
Author: Mara Wise, MS IV, David Swender, DO, Leah Wise, DO, Haig Tchjehian, MD
and Robert Hostoffer, DO
Affiliation: Allergy/Immunology Association, Inc., Cleveland, Ohio
Richmond Medical Center/University Hospital

Introduction: Topical insect repellent is commonly used throughout the world. Its main active ingredient is either DEET with or without picaridin. Reactions to topical repellent have ranged from contact dermatitis to urticaria but only reported one of the components, DEET. We report the first description of a patient who experienced immediate cutaneous urticaria to a repellent and showed sensitivity to both DEET and picaridin.

Case report: A 22 year old otherwise healthy white male was evaluated for immediate cutaneous urticaria, which was noted after the application of insect repellent. No systemic manifestations were noted.

Methods: Commercially available OFF (scented and unscented) was purchased and used for patch testing. Both DEET and picaridin were obtained from the manufacturers.

Results: Patch testing to each product showed urticarial response to OFF scented, DEET and picaridin. There was no reaction to saline and the ethanol base.

Conclusions: This case demonstrates the potential for multiple reactants within one product causing a composite hypersensitivity reaction. We report the first such reaction in a patient after the use of a commercially available insect repellent.

C22

Title: *Treatment of Hammer Toe Deformity Using A One Piece Intramedullary Device: A Case Series*

Author: Bryan L. Witt DO, PGY-3 and Christopher F. Hyer DPM, FACFAS

Affiliation: OhioHealth/Doctors Hospital Columbus and Orthopedic Foot and Ankle Center

Introduction: A hammer toe is a common musculoskeletal deformity encountered by foot and ankle surgeons. This deformity causes toe pain, difficulty wearing shoes and unacceptable cosmetic appearance. There are many surgical procedures to correct the deformity of fixed hammertoes. The most common procedure is the DuVries arthroplasty with Kirschner wire fixation. Unfortunately, using the Kirschner wire for hammer surgery has a plethora of complications including K-wire migration, breakage and pin tract infection. Furthermore, complications of pseudoarthrosis and non-union are seen using this technique. Moreover, a second procedure is needed for wire removal. In this case series of three patients, we will describe an alternative method for correcting fixed hammer toe deformities using an intramedullary device. This implant is a permanent, one-piece, internal device placed within the intramedullary cavity of the proximal and middle phalanx. The potential advantages of this prosthesis include elimination of wire migration and breakage, pin tract infections and a second procedure to remove the percutaneous wire. The implant design may have a potential advantage of achieving a higher rate of bony fusion thus preventing residual pain, hammer toe recurrence, and revision surgery.

Case Description: In this case series, three patients were followed for four months. There were no intra-operative or post-operative complications and the implant maintained proper alignment throughout the post-operative period. At the most recent follow-up, all patients were pain-free and were performing all activities of daily living.

Conclusion: The PRO-TOE hammer toe implant system is a viable alternative in treating fixed hammer toe deformities.

C23

Title: *Achilles Tendon Reattachment Following Surgical Treatment of Insertional Achilles Tendinosis Using the Suture Bridge Technique: A Case Series*

Author: Bryan L. Witt DO, PGY-3 and Christopher F. Hyer DPM, FACFAS

Affiliation: OhioHealth/Doctors Hospital Columbus and Orthopedic Foot and Ankle Center

Introduction: Achilles tendinopathy is a clinical diagnosis characterized as a triad of symptoms including pain, swelling and impaired performance of the diseased tendon. Achilles tendinopathy is divided into Achilles tendonitis and tendinosis based on histopathological examination. Achilles tendinosis is viewed microscopically as disorganized collagen, abnormal neovascularization, necrosis and mucoid degeneration. Insertional Achilles tendinosis is a degenerative process of the tendon at the junction of the tendon and calcaneus. This disease is initially treated conservatively with activity modification, custom orthotic devices, heel lifts and immobilization. After three to six months of conservative therapy has failed to alleviate symptoms, surgical management is indicated. Surgical management of insertional Achilles tendinosis includes Achilles tendon debridement, calcaneal exostosis ostectomy and retrocalcaneal bursa excision. In this case series, we presented four patients who underwent surgical management of insertional Achilles tendinosis with complete tendon detachment.

Case Description: All patients underwent reattachment of the Achilles tendon using the Arthrex Suture Bridge technique. The Arthrex Suture Bridge device uses a series of four suture anchors and FiberWire to reattach the Achilles tendon to its calcaneal insertion. This hourglass pattern of FiberWire provides a greater area of tendon compression consequently allowing greater stability and possible earlier return to weight bearing activities. The patients were followed for six months duration and no intra-operative or post-operative complications were identified. All patients were completely pain free and returned to all activities of daily living upon final follow-up.

Conclusion: The Suture Bridge technique for Achilles tendon repair after surgical management of insertional Achilles tendinosis is a viable option.

POSTER EXHIBITION

E1

Title: *Early and Long-term Outcomes of Carotid Endarterectomy in a Community Hospital Setting: A Retrospective Study*

Authors: Eugene Laveroni, DO
Janet Baatile, DPM, Podiatric Medicine & Surgery PGY-3
Amelia Fiore, DO General Surgery PGY-2

Affiliation: Botsford Hospital, Department of Vascular Surgery, Farmington Hills, MI

Purpose: According to the Center for Disease Control, cerebrovascular accidents are the third leading cause of death for both men and women in the United States. The incidence of cerebrovascular events is increasing due to a growing aging population with carotid disease. The purpose of this study is to evaluate the long-term outcome and survival after a carotid endarterectomy (CEA) in a community hospital setting.

Methods: This is a retrospective chart review examining adverse event outcomes status post carotid endarterectomy by one vascular surgeon in a community hospital setting. The endpoints that will be evaluated are: myocardial infarction, cerebrovascular accident, transient ischemic attack, neurological deficits, restenosis, and death. An analysis was conducted on a compiled computerized database of all primary CEAs performed on the primary author's vascular clinic patients at Botsford Hospital, Farmington Hills, Michigan institution from 1998-2005. Survival analysis was performed using the Kaplan-Meier test.

Results: One hundred and eighty patients underwent a CEA between 1998-2005 at Botsford Hospital. There were no statistically significant differences in pre-operative risk factors between males and females for coronary artery disease, diabetes, hypertension, stroke, and myocardial infarction. The Kaplan-Meier analysis demonstrated freedom from stroke or death at year one and two was 100%, and at years 3, 5, and 10 was 94%.

Conclusion: In the current study, we found a low rate of perioperative risk of stroke in death in 180 patients that underwent CEA.

E2

Title: *Neonatal Abstinence Syndrome*

Authors: Carl R. Backes, DO

Affiliations: Ohio University College of Osteopathic Medicine
Special Care Nursery Nationwide Children's Hospital
OhioHealth/Doctors Hospital Columbus

Introduction: Review diagnosis and treatment of NAS. Also review guidelines of new approach using outpatient medication to decrease hospitalizations of NAS infants.

Objective: Discuss the increasing health problem in our country with opioid addiction during pregnancy. I will discuss optimal pregnancy care as an alternative to street drugs. Discuss the consequences of fetal exposure to opioid maternal addiction. Discuss treatment of the infant in the hospital as well as in an outpatient setting.

Outcome Measures: Post-test with cases using ILR.

E3

Title: *Prison Babies - A 10 Year Medical Experience*

Author: Carl R. Backes, DO

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Division of Neonatology, Nationwide Children's Hospital
Special Care Nursery, OhioHealth/Doctors Hospital Columbus
Nationwide Children's Hospital

Background: The Ohio Reformatory for Women (ORW) nursery program is open to healthy mothers convicted of non-violent crimes who give birth while in the custody of The Ohio Department of Rehabilitation and Correction (ODRC) and have less than 18 months remaining on their sentence.

The Achieving Baby Care Success (ABC's) program operates under the "parallel universe" strategy which is premised on the notion that life inside prison should resemble life outside prison.

Retrospective studies suggest that recidivism rates are lower for women offenders who are able to keep their babies with them in prison than for the general population.

In addition, research reinforces that infants must bond with their mothers within the first few months of life or their emotional and intellectual functioning is impaired.

Discussion: Limited data is available regarding the medical needs and concerns of infants cared for in a prison setting. To date I have medically cared for 207 infants of offenders with 170 offenders successfully completing the program. In addition, as a pediatric team, we have developed criteria for admission, care protocols, emergency guidelines and education support. During the program, I have provided 24/7 pediatric availability for offender and staff infant concerns.

Finally, immunizations and Help Me Grow educational tools are provided by the Union County Health Department.

I will be presenting diagnoses, pharmacy needs, infections treated and overall care of babies in prison in ORW in Marysville, Ohio.

E4

Title: *Down's Syndrome- A Rare Double Aneuploidy Case*
Authors: Katherine A. Backes, BA
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Nationwide Children's Hospital

Background: 48, XXX, +21 is a rare chromosomal anomaly. We report a five year old female with 46, XXX, +21 with typical physical and developmental profile of 47, +21 Down's Syndrome child.

Case Description: LE is a 5 9/12 year old Down's Syndrome female who has had surgery for duodenal atresia and closure of a cardiac defect VSD. Present medical problems include asthma, a skin disorder, immune deficiency and allergies. Developmentally she is delayed with ongoing occupational, physical and speech therapy.

Conclusion: Limited published material is available on older children and their outcome with double aneuploidy. It has been suggested that XXX females may worsen the developmental delay already seen with 47, + 21 children. Instead it appears, as with double trisomy's, that the phenotype reflects that of the extra chromosome alone.

E5

Title: *Salmonella Bacteremia and Osteomyelitis in a 7 Week Old Infant*
Authors: Katherine A. Backes, BA
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Division of Neonatology, Nationwide Children's Hospital
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Nationwide Children's Hospital

Case Description: We present this 7 week old Caucasian male admitted through our Children's Hospital emergency room after an initial septic work 24 hours earlier had a positive blood culture. Subsequently, BJ had decreased movement of his left arm with swelling and redness of the left humeral area and left axillary adenopathy. X-rays and an MRI of the area revealed left metaphyseal osteomyelitis, left shoulder septic arthritis and an abscess of the left humeral area. Intravenous ceftriaxone was ongoing and he was taken to the operating room on day 3 of hospitalization for abscess debridement. An extensive immune evaluation was completed which was negative. His blood and wound cultures were positive for Salmonella Singapore.

BJ recovered without complications. An etiology of his infection was not determined although the mother was using 3 different formulas she had prepared “earlier” but inadvertently left on a counter and given by a babysitter.

Conclusion: We will discuss first the clinical significance of this rare salmonella serotype.

E6

Title: *Failed Neonatal Resuscitation- An Unusual Cause*

Authors: Peggy G. Hale, DO, Department of Emergency Medicine, Doctor’s Hospital
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Ruth Anchor, DO, Department of Pathology, Doctor’s Hospital

Introduction: Rarely despite following AAP neonatal resuscitation guidelines an infant will not respond to resuscitative effort. Always considered is the diagnosis of failed lung ventilation by a mechanical blockage or impaired lung function. We present a case of failed newborn resuscitation due to bilateral congenital diaphragmatic hernias (BCDH).

Case Description: A 26 year old female presented in labor at 34 weeks gestation after a normal fetal ultrasound at 20 weeks. The vaginal delivery was unremarkable but the infant was born cyanotic, apneic, asystolic and with multiple anomalies. After failed noninvasive pulmonary resuscitation he was intubated with difficulty due to severe micro-retrognathia. He became bradycardic but again was asystolic and failed further resuscitative attempts. Due to unsuspected failed resuscitation and noted external anomalies, an autopsy was requested. At autopsy the infant had BCDH with severe lung hypoplasia, in addition to other anomalies. Chromosomal analysis was normal. Clinical and autopsy results supported the diagnosis of Fryn’s Syndrome.

Discussion: Only 14 cases of BCDH have been described in the literature with the majority having Fryn’s Syndrome- an autosomal recessive disorder with anomalies similar to our patient. Fryn’s Syndrome is universally fatal with one exception. The diaphragmatic pathology results from failed fusion of the pleuroperitoneal folds with the mesentery of the esophagus and the septum transversum. The peritoneal contents enter the pleural cavity compressing vital organs.

Diagnosis: 60% of patients with BCDH have a normal fetal ultrasound.

Summary: If resuscitation fails and mechanical blockage or failed ventilation is considered, autopsy support may assist you in family counseling and correct diagnosis as illustrated.

E7

Title: Continuous Accreditation Review and Inventory
Author: Bradley Hobbs, MEd
Affiliation: Grandview Medical Center

Background: The Continuous Accreditation Review and Inventory Project was initiated in an effort to improve the inspection preparation process for our residency and fellowship programs.

Objectives: Our goals included structuring a continual review of program and inspection materials, alleviating stress and pressure as a result of untimely preparation, increasing communication and understanding between constituents, decreasing the time required for inspection readiness; and further engaging the Program Directors, Residents and Faculty in the preparation process.

Methodology: The methodology was to first identify common specialty college requirements, determine available resources and establish responsibilities, determine appropriate review cycles and establish a logical timeline, create an inventory to log and track program and inspection materials (what we have vs. what we need) and to establish an electronic filing system for organizing program and inspection materials.

Conclusion: As a result of our efforts, program coordinators and directors have been better able to identify and allocate resources and can establish a more precise preparation timeline and strategy. Program directors, coordinators and residents have sufficient time to review, update and prepare documentation with more precision and deliberation and are more prepared when managing adversity during the mid-cycle review and inspection preparation process. Additionally program coordinators have immediate access to accurate inspection documents thus reducing interruptions to residents' and program directors' day to day clinical and non-clinical responsibilities. Finally, program coordinators, directors and residents have acquired a clearer understanding of expectations and rationale.

E8

Title: *Health Information Technology Costs and Patient Safety Concerns*
Author: Robert Hunter, DO, FACOEP, FACOFP
Affiliation: Grandview Medical Center

Discussion: The Institute of Medicine regards the implementation of electronic health records (EHRs) as an essential technology and one of the principle ways to improve health care. [i] ARRA includes over \$20 billion to aid in the development of a robust health information technology (HIT) infrastructure for healthcare. [ii]

Few US doctors or hospitals - perhaps 17% and 10%, respectively - have even basic electronic health records (EHRs). There are significant barriers to their adoption and use, including the technical and logistical challenges involved in installing, maintaining, and updating them, as well as consumers' and physicians' concerns about the privacy and security of electronic health

information. Cost is a significant barrier – not only in terms of purchase price, but also based on the perceived lack of financial return from investing in electronic health records. The physician has to front money to purchase the EHR, which may cost anywhere from \$20,000 to \$50,000, as well as pay \$10,000 to \$20,000 per year for maintenance. The average EHR has a short life expectancy; it is replaced every five years.

E9

Title: *A Randomized Controlled Trial (RCT) of Telephone-Administered Interpersonal Psychotherapy (IPT) for Depressed Rural Persons Living with HIV/AIDS*

Authors: Timothy Heckman, PhD and Amanda J. Kocoloski, OMS IV

Affiliation: Ohio University College of Osteopathic Medicine

Background: Through December 2009, there were approximately 60,000 people living with HIV/AIDS in rural areas of the United States. HIV-infected rural persons experience elevated rates of depression, suicidal ideation, stigma/discrimination, lack access to contemporary medical and mental health services, and have difficulty adhering consistently to regimens of antiretroviral therapy (ART). HIV-infected rural persons also have significantly shorter survival periods than their urban counterparts. Clearly, cost-effective and easily accessible mental health services are urgently needed for HIV-infected rural persons. Project Alliance is a randomized controlled trial testing to determine if telephone-administered IPT can reduce depressive symptoms in depressed HIV-infected rural persons compared to a standard of care (SOC) control condition.

Methodology: Participants' depressive symptoms, interpersonal problems, social supports, and adherence to ART are being assessed at pre- and post-intervention and 4- and 8-month follow-up. The project will enroll 180 participants; 90 will receive 9 sessions of telephone IPT and 90 SOC controls will receive psychosocial services available in their home communities. To date, 40 eligible participants have been identified. Most participants are male (62.5%), Caucasian (70%), identify as gay/bisexual (52.5%), and live in counties of 40,000 people or fewer (55%). According to the PRIME-MD, 87.5% of currently enrolled participants meet criteria for major depressive disorder (MDD); the remaining 12.5% meet criteria for partial remission of MDD. Ten participants have completed pre-intervention surveys and have been randomly assigned to either the IPT intervention or the comparison condition.

Conclusion: Preliminary intervention-outcome analyses will report on short-term changes associated with the IPT intervention.

E10

WITHDRAWN

E11

Title: *Does Use of a Cell Phone Affect Cognition?*

Authors: Kharma Lundy, BS, Charlotte Greene, PhD

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Department of Neuroscience, Physiology and Pharmacology

Background: This research examined the effects that a cell phone distraction had on subjects completing a maze task.

Methodology: Twenty-four subjects participated in the study (12 Younger subjects/12 Older subjects; 14 females/10 males). Subjects completed an identical maze task during each of three sessions. During the first session, subjects completed the maze task without the distraction of cell phone use. The second session involved completion of the maze task while listening to a transcript read over a cell phone held in the non-dominant hand. The third session involved completion of the maze task while participating in a cell phone conversation. Subjects' performances were recorded for selected parameters: maze completion time, number of dead-ends entered, pauses, and loss of concentration.

Results: This data was analyzed by age and gender. Significantly, females took longer than males to complete the maze task in both cell phone sessions regardless of age. However, males had a significant increase in the number of pauses during the maze task, but still managed to complete the task more quickly than the female subjects. Younger subjects had a significant loss of concentration in both cell phone sessions, which was not observed in the Older subjects. Younger subjects also had a significant increase in maze dead-end entry in Session 2, which was not found to be significant in Older subjects, while females significantly entered more maze dead-ends than males in Session 3.

Conclusion: This study suggests that the use of cell phone should be severely limited when performing a task that relies on attentiveness.

E12

Title: *Assessment of Program Directors' Administrative and Leadership Skills*

Authors: Olivia T. Ojano-Sheehan, PhD, Centers for Osteopathic Research and Education,
and Faculty Development

Affiliations: Grace Brannan, PhD, Centers for Osteopathic Research and Education
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Introduction: The Residency Directors Residency Administration Program (RD RAP) is a year-long fellowship program that specifically targets program directors' (PDs) and provides the opportunity to strengthen their knowledge and skills pertaining to administration and leadership. The RD RAP's curriculum resembles the curriculum in the education and administrative domains as proposed by Bland et al. Furthermore, RD RAP curriculum includes more current trends/topics such as GME Financing, Millennial Learners, Mentorship, and others.

Objective: This study's objective is to assess program directors' (PD) administrative and leadership skills during the course of their participation in the Residency Directors Residency Administration Program (RD RAP). It will also determine if the PDs knowledge and skills pertaining to administration and leadership will have a significant difference from pre-assessment to post-assessment thru completion of a self-assessment instrument which will be given twice: at the beginning of the RD RAP and at the end of the RD RAP.

Methodology: A total of 5 participants completed both pre- and post-assessment. Because of the small number of sample size, we used Wilcoxon Signed Rank Test, a non-parametric measure. We set the statistical level of significance at 0.05.

Results: Post-assessment results indicated that program directors statistically significantly improved in their understanding of several concepts ($p < 0.05$). These include areas such as: Understanding Millennials, Delegation, and Mentorship.

Conclusion: These results will help in improving residency training programs' administration, in having a better understanding of trainees, and self-assessments.

E13

Title: *Can You Hear Me Now? Patient-Centered Communication Skills Workshop for Healthcare Providers*

Authors: Olivia Sheehan, PhD, Joanne Bray, CNP, Steve Davis, PhD and Robbin Kirkland, PhD

Affiliation: Centers for Osteopathic Research and Education
Ohio University College of Osteopathic Medicine

Introduction: In 2010, the Chillicothe Veterans Affairs Medical Center (CVAMC) in Chillicothe, Ohio, an affiliate member of the CORE, was approved a grant aimed at implementing a three-pronged approach to improving physician-patient communication:

- Training high-performing physicians on patient-centered communication and coaching techniques to become coaches (train-the-trainer)
- Creating a standardized patient lab
- Delivering a bedside workshop for inpatient physicians/physician extenders.

Methodology: As part of the three-pronged approach, CVAMC requested OUCOM Clinical Training and Assessment Center (CTAC) and CORE Faculty Development (FD) to deliver a Patient-Centered Communication Skills (PCCS) workshop that embodies the grant's focus. To address CVAMC's need, CTAC and FD facilitated three sessions (one for coaches in Train-the-Trainers and two for inpatient and physician extenders) on communication skills. In addition, consultations regarding the development of a standardized patient lab in CVAMC were also provided.

The PCCS Workshop objectives aimed for participants to describe effective communication skills, define patient-centered communication, describe domains of patient-centered communication, discuss patient-centered communication strategies, and recognize that effective patient-centered communication can affect important health outcomes.

CTAC and FD developed the workshop based on adult learning principles and focused on effective communication skills, patient-centered communication, and self-assessment. Lecture/discussion, small group activities, inquiry, and reflection were used as teaching methods.

Results: Twenty-three participants completed the evaluation. Majority of them rated the workshop “excellent” and “very good”.

Conclusion: CTAC and FD facilitated the Patient-Centered Communication Skills Workshop to CVAMC healthcare providers. The workshop objectives were addressed and evaluations indicate that the workshop was well-received and rated high.

E14 **WITHDRAWN**