NYSOMS

NEW YORK STATE OSTEOPATHIC MEDICAL SOCIETY

Regional Osteopathic Convention- New York

ABSTRACT PROCEEDINGS

Student/Intern/Resident/Fellow

EXPERIMENTAL RESEARCH SCIENTIFIC POSTER COMPETITION

Friday, April 3, 2020

Hyatt Regency Long Island

1717 Motor Parkway
Hauppauge, NY 11788

www.NYSOMS.org

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MEDICAL STUDENTS

NYIT COLLEGE OF OSTEOPATHIC MEDICINE

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Title: *Can the King-Devick Test Be Used to Detect Neurocognitive Changes Caused by Subconcussive Impacts?*
Authors: Brandon Burg, OMS-III; C. Varlotta; J. Miceli; J. Giordano; M. Jung; H. Zwibel, DO; M. Heller

S-02
Title: *Comparison of Nebulized Ketamine at Three Different Doses for Acute and Chronic Pain in the ED*
Authors: Mahlaqa Butt, MPH; Daniel Dove, MD; S. Motov, MD; A. Davis, MD; C. Fassassi, MD; S. Kabariti, MPH; N. Rothberger, PharmD; J. Marshall, MD

S-03
Title: *Assessing the Knowledge of the Osteopathic Profession in New York's Korean Communities*
Authors: Diane Choi, OMS-II; Justin Chin; Haeinn Woo; Emily Dube, M.S.; Mikhail Volokitin, D.O.; Christine Lomiguen, MD

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Title: *Utility of Tilt Table Testing in the Diagnosis of Postural Tachycardia Syndrome in Ehlers-Danlos Syndrome and Hypermobility Spectrum Disorder*
Authors: Japheth Okpebholo, OMS-II; Diane Choi, OMS-II; Jillian Nostro; Emily Dries; Todd Cohen MD; Bernadette Riley, DO

S-05
Title: *In the Age of Anti-Vaccination: The Impact of Religious Identity on Vaccine Compliance*
Authors: Alex Hernandez, OMS-I

S-06
Title: *A Novel Lifestyle Intervention Program to Improve Body Composition and Chronic Disease Biomarkers in Overweight Medical Students.*
Authors: Sarah Jawadi, OMS-III; Guneet Kaur,OMS-III; Joanne DiFrancisco-Donoghue, PhD

S-07
Title: *Outcomes in Patients with Parkinson's Disease Undergoing Primary Total Hip Arthroplasty*
Authors: Simon Katz, BS, OMS-II; Leah Katz, OMS-I; Kevin Marchand, BS; Joseph Ehiorobo, MD; Michael A. Mont, MD

S-08
Title: *Comparative Serologic Testing of Lyme Disease by Western Blot Analysis*
Authors: Katherine Loomba, OMS-II; C. Pavia, Ph.D.; D. Zhang, Ph.D.; D. Shi, OMS-II; T. Sherpa, OMS-II; J. Chen, OMS-II

S-09
Title: *Evaluating Osteopathic Medical Student Residency Application and Match Trends in Preparation for the Single-Accreditation System*
Authors: Joseph Marinelli, OMS-II

S-10
Title: *Comprehensive Update of Whiteboards During Multidisciplinary Rounds on a Medicine Floor and its Impact on Inpatient Length of Stay*
Authors: Donato Mignone, OMS-III; Keya Shah, OMS III; Guneet Kaur, OMS-III; Merjona Saliaj, MD; George Martin, MD

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Authors: Shreya N. Patel, OMS-II; Monish Singh, MS; Abraheem N. Ahmad, Eric J. Schram, OMS-II Maria M. Plummer, MD; Olga V. Savinova, PhD

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Authors: Haque Shakil, BS, OMS-I; Jayme Mancini, PhD, DO; To Shan Li, DO; Sheldon Yao, DO

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Authors: Daniel Veyg, OMS-II; Lizbeth Hu, B.S., NYU SoM; Jing Wang, MD, PhD, NYU SoM

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Authors: Amy Young, OMS-II; Alyssa Auerbach, OMS II; Daniel Meshoyrer, DO; George Cheriyan, DO; To Shan Li, DO; Sheldon Yao, DO; Todd Cohen, MD

TOURO COLLEGE OF OSTEOPATHIC MEDICINE

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Authors: Bahadar S. Srichawla, OMS-III; Nilank Shah, MD

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Title: *Assessing Sacral Somatic Dysfunction and Hours Seated in Relation to Developing Low Back Pain in Pre-clinical Osteopathic Medical Students*
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Authors: Tobin Thuma, OMS-III; Marco Lawandy, OMS-III; Christine Lomiguen, MD

RESEARCH ABSTRACTS
Titles & Authors
INTERNS/RESIDENTS/FELLOWS

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R-02
Title: *Retrospective Analysis of the Contribution of Cannabis Usage to Diabetic Ketoacidosis at an Urban Teaching Hospital*
Authors: Christine K. Kha, DO; Ellyn Phan, MD; Nicole Simon, MD

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Title: *Management of Osteoporosis After Initial Hip or Other Low Trauma Related Fracture in Coney Island Hospital and its Effects on Occurrence of Subsequent Fracture*
Author: Dmitriy Khazron, DO; A. Lewis, MD; J. Morrobel, MD; O. Galperin, MD; A. Anandaraj, MD; N. Soe, MD; H. Gnanapragasam, MD; N. Simon, MD

R-04
Title: *The Utility of 1,5 Anhydroglucitol as a Reliable Indicator of Glycemic Control in Diabetes Mellitus*
Authors: Merlyn Mathew, DO; Silvia Bercovici, MD

R-05
Title: *Screening Inner-City Adolescents for Depression and Suicide*
Authors: Carli Thomas, DO; Dennis Dorf, DO, MPH; Kahn, Benjamin; Seigel, Warren, MD

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Authors: Katherine Lang, DO; Victoria Levy; David Levy, D.O.

R-07
Title: *The Incidence of Clinically Significant MRA Findings for TIA Patients in the ED Observation Unit*
Authors: Amanda Pacheco, DO; Victoria Levy; Robert Bramante, MD

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Title: *Does A Physician Developed Airway Equipment Tray Improve Physician Satisfaction and Speed of Intubation Preparation?*
Authors: Brianna Thiessen, DO; Steven Sattler, DO; Jordan LaFave, DO

NASSAU UNIVERSITY MEDICAL CENTER

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Title: *Determinants of Psychiatric Inpatient Hospitalization Length of Stay at A Community Hospital Center*
Authors: Neha Ali, DO; O. S.; Ijendu Korie; C. Ioannu; A. Gulati, R. Sabeeh; A. Khan; M. Mudigonda; R. Suthir; Megan Franzetti; J. Gregory; M. Batra; V. Adi

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Title: *Factors Affecting Treatment Completion in Inpatient Detoxification- A Retrospective Study*
Authors: Megan Lin, DO; Ulziibat Person, MD; Ijendu Korie, MD; Romain Branch, MD; C. Ioannou, MD; A. Parrill; D. Bishev; H. Joshaghani; Manpreet Takhi

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Authors: Sabreen Rahman, DO; H. Afzal; U. Person, MD; D. Bishev; V. Nookala; I. Korie, MD; A. Yang; Asif Rahman; S. Afzal; T. Azfar; R. Branch; C. Ioannou

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Authors: Amanda Moukdad, DO, MPH, MBA; David Moskowitz, PhD

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Authors: Josephine Champlin, DO; Maria Becker, DO; Tahir Ansari, DO; Evan Nadal, DO; Danielle Jakubowski, CMA

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Authors: Tarayn Dhansew, DO; Maria Masih, MD; Patty Mupo, RN, BSN; Holly Fischer, RN, BSN; Ashley Collins, DO; V. Orlov, DO; P. Paunikar MD, MPH

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Title: *Improving Compliance with the Severe Sepsis and Septic Shock Management Bundle*
Authors: Guang Yu Lee, DO; Arfa Mirza DO; Anish J. Soni DO; Haowei Han DO; Jason Wentzek DO; Kaushik Manthani DO

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Title: *Improving Transition of Care: The Effect of Telephone Communication on Post-Hospitalization Primary Care Follow-up*
Authors: Amar Vyas, DO; D. Jakubowski, CMA; S. Fricke, MHA; T. Dhansew, DO; J. Champlin, DO; P. Paunikar, MD; A. Andrianov, MD; Kenneth Mayer, MD

RESEARCH ABSTRACTS

MEDICAL STUDENTS

S01 - S22

Institution: NYIT College of Osteopathic Medicine

Title: *Can the King-Devick Test Be Used to Detect Neurocognitive Changes Caused by Subconcussive Impacts?*

Authors: Brandon Burg, OMS-III; C. Varlotta; J. Miceli; J. Giordano; M. Jung; H. Zwibel, D.O.; M. Heller

Background: The three-section King-Devick Test is used to help healthcare professionals diagnose a concussion for an athlete on the sideline. This test is 86% sensitive and 90% specific with respect to diagnosing a concussion. Recent research has shown that the numerous subconcussive impacts sustained by athletes while competing can lead to significant neurocognitive decline. It is imperative to determine which assessments can accurately measure an athlete's neurocognitive function when a clinically overt concussion is not evident. This will aid health care professionals in keeping athletes as safe as possible.

Objective: To determine if the King-Devick Test is useful for tracking neurocognitive changes in athletes from pre- to post-season.

Methods: The King-Devick Test's three sections were administered pre- and post-season to 14 NCAA Division II Women's Soccer athletes from NYIT. Each section is progressively more difficult than the previous one, requiring the athlete to read sequential numbers while being timed (seconds). Their errors for each section were also recorded. A paired t-test was used to compare the athletes' results.

Results: Pre-season section 1 average time was 13.1s and post-season was 12.7s, p=0.17. Pre-season section 2 average time was 13.7s and post-season was 12.6s, p=0.010. Pre-season section 3 average time was 13.8s and post-season was 12.9s, p=0.003. The mean difference of all three sections of the King-Devick Test from pre- to post-season was -2.6s, p=0.001.

Conclusion: Not only did the King-Devick Test fail to detect a decline in neurocognitive function in the athletes as described in other studies, the athletes' performance on all sections improved from pre- to post-season. This finding can be attributed to a possible learning effect due to the simplicity and repetitive nature of the Test. These results demonstrate that while the King-Devick Test has been an effective tool in assisting with the diagnosis of concussions, it is not useful for assessing the effects of subconcussive impacts on neurocognitive function.

Institution: NYIT College of Osteopathic Medicine

Title: *Comparison of Nebulized Ketamine at Three Different Doses for Acute and Chronic Pain in the ED*

Authors: Mahlaqa Butt, MPH; Daniel Dove, M.D.; Sergey Motov, M.D.; Ashley Davis, M.D.; Catsim Fassassi, M.D.; Sarah Kabariti, MPH; Nechama Rothberger, PharmD; John Marshall, M.D.

Background: A nebulized form of sub-dissociative ketamine (SDK) has been shown to be effective when IV access cannot be achieved for cancer and acute postoperative pain patients. Currently, there are no clinical trials evaluating the role of nebulized SDK in managing pain in the ED.

Objective: Our aim is to compare the analgesic efficacy and rate of adverse effects of nebulized SDK at three different doses (0.75mg/kg, 1 mg/kg and 1.5 mg/kg) for ED patients with acute or chronic pain.

Methods: A double-blind study (approved by Maimonides IRB) of patients age ≥18 presenting to the adult emergency department with moderate to severe pain (NRS≥5) were randomly assigned to three groups: 0.75, 1 or 1.5 mg/kg dose. Primary outcome: reduction in numeric rating scale (NRS) pain score at 30 min. ANOVA and χ^2 test used for data analysis. N=120 patients, based on sample size calculation.

Results: To date, 60 patients are enrolled (20 in each group). Mean NRS pain scores at baseline: 8.9, 8.5, and 8.5 (p=0.572), and at 30 min.: 4.9, 3.7, 4.5 (p=0.400). The difference in mean NRS pain scores at 30 min. between 0.75 mg/kg and 1 mg/kg recipients was -0.90 (95% CI: -2.8 to 1.0); between 0.75 mg/kg and 1.5 mg/kg recipients was -0.10 (95% CI: -1.7 to 1.5); and between 1 mg/kg and 1.5 mg/kg recipients was 0.80 (-1.1 to 2.7). Reduction in mean NRS pain scores was statistically significant from baseline to 30 min. in all groups: 4.0 (95% CI: 2.8 to 5.1); 4.9 (95% CI: 3.3 to 6.4) and 4.1 (95% CI: 2.9 to 5.2).

Conclusion: The reduction in NRS pain was largest at the 1.0 mg/kg dose, yet this was not statistically significant when compared to recipients receiving 0.75 or 1.5 mg/kg. Thus, clinicians can give any nebulized SDK dose to achieve similar pain relief for their patients; recommend low dose.

Institution: NYIT College of Osteopathic Medicine
Title: *Assessing the Knowledge of the Osteopathic Profession in New York's Korean Communities*
Authors: Diane Choi, OMS-II; Justin Chin; Haeinn Woo; Emily Dube, M.S.; Mikhail Volokitin, D.O.;
Christine Lomiguen, M.D.

Background: In the United States, a doctor of osteopathic medicine (DO) is a licensed medical professional with identical practice rights and privileges as an allopathic physician (MD). Recognition of DOs and osteopathic manipulative medicine (OMM) on an international level is varied, however, with South Korea only giving practicing rights to DOs in 2018.

Objective: To develop a culturally-appropriate survey to assess osteopathic knowledge in New York City's Korean communities.

Methods: An anonymous survey in Korean and English was used to gather demographics, education level, healthcare habits, and knowledge of the osteopathic profession. Statistical analysis was performed in "R" to evaluate independence between questions using chi-square tests.

Results: 105 surveys met inclusion criteria, with 47 males and 58 females, with an age distribution of 27-92 (average age = 66). Interestingly, having the native language of Korean was the sole statistically significant category ($p<0.05$) in determining whether participants had knowledge of DOs/OMM.

Discussion: As shown by the results of the survey, there exists a definite lack of recognition of osteopathic medicine among the Korean communities in New York City. A reason many Korean immigrants are not aware of osteopathic medicine may be that osteopathic medicine, *jeong-gol-ui-hak* in Korean, originated in the US and it is still very new to South Korea. However, there are manual manipulation treatments with similarity to OMM that are growing in popularity in South Korea.

Conclusion: Compared to research on the general US population, there exists a general lack of knowledge of OMM and DOs within New York's Korean community. It stands that greater outreach needs to be done in minority communities.

Institution: NYIT College of Osteopathic Medicine

Title: *Utility of Tilt Table Testing in the Diagnosis of Postural Tachycardia Syndrome (POTS) in Ehlers-Danlos Syndrome (EDS) and Hypermobility Spectrum Disorder (HSD)*

Authors: Japheth Okpebholo, OMS-II; Diane Choi, OMS-II; Jillian Nostro; Emily Dries; Todd Cohen M.D.; Bernadette Riley, D.O.

Background: Hypermobility is a key aspect of both hypermobility spectrum disorder (HSD) and Ehlers-Danlos Syndrome (EDS). HSD refers to a group of disorders where patients present with hypermobility and other phenotypic features limited to the musculoskeletal system. EDS are a group of connective tissue disorders that encompasses features of hypermobility as well as cardiac, skin, and many other types of manifestations, depending on the subtype.

Postural Tachycardia Syndrome (POTS) is a heterogeneous clinical syndrome of unknown etiology, but the common pathophysiological pathway appears to be reduced efficacy of venous return to the heart due to mechanical problems seen in hypermobility disorders including HSD and EDS.

Objective: To test the hypothesis that tilt table testing is a simple noninvasive test useful in diagnosing POTS in patients with EDS and HSD.

Methods: Ten HSD or EDS patients with unexplained and/or recurrent presyncope and/or syncope were referred for tilt table testing. All patients were evaluated on whether they experienced presyncope or syncope.

Tilt table testing was performed to assess the mechanism of unexplained presyncope or syncope at a 70 degree angle for 45 minutes while recording the patient's blood pressure and ECG at 2-5 minute intervals.

Results: 10 patients underwent tilt testing. 6 patients had HSD and 4 had EDS. 6 had presyncope and syncope, and 4 had only presyncope.

The tilt table test was abnormal in 8 of 10 patients; each abnormal tilt test demonstrated POTS. The other two patients had a negative tilt test. 4 of 6 HSD patients (66.7%) and all of the EDS patients (100%) had abnormal tilt table tests (p = NS).

Conclusion: This preliminary study shows that tilt table testing is a simple, noninvasive test that can help diagnose POTS in patients with hypermobility. POTS appears closely linked to clinical signs of hypermobility and not a specific hypermobility disorder (EDS or HSD).

Institution: NYIT College of Osteopathic Medicine
Title: *In the Age of Anti-Vaccination: The Impact of Religious Identity on Vaccine Compliance*
Authors: Alex Hernandez, OMS-I

Context/Background: The US media sensationalizes modern epidemics of vaccine preventable diseases (VPDs) once thought to be eradicated, and searches for groups amongst the population who do not regularly adhere to vaccination standards.

Objective: The purpose of this study is to evaluate the following research question: "Does religious identity affect vaccine compliance in the United States?"

Methods: Based on a literature review of three religions' religious doctrines: Post-Renaissance Hinduism, Jehovah's Witness, and Christian Science, I categorized each religious identity on an ordinally ranked scale of increasing strength with respect to pro-vaccine ideology, from least "pro-vaccine" to most "pro-vaccine." The independent variable is the proportion of congregations of a given religious identity relative to the total number of religious congregations within a California county (obtained from the ASARB 2010 dataset). The dependent variable is the 2010 average vaccine compliance percentage of kindergarteners sampled in the KRS's annual study for each county (2010 data was collected from California Public Health (CDPH) website). Control data was obtained from the 2010 census. Descriptive and inferential statistical methods were used to evaluate the primary research question.

Results: The hypothesis that the religious identity considered most "pro-vaccine" of the three on this scale (Post-Renaissance Hindu) was associated with higher levels of local county (kindergartener) vaccine compliance in California, was rejected. A second hypothesis did find support in data: the greater the proportion of Christian Science congregations within a California county, the lower the level of (kindergartener) vaccine compliance (supported). Based on my analysis of California census data during the 2010 calendar year, overall regression findings revealed statistically significant negative effects of the proportion of Christian Science, Post-Renaissance Hindu, and Jehovah's Witness congregations on average county-level kindergartener vaccine compliance rates ($p=0.000$; $p=0.000$; $p=0.025$).

Conclusion: Ultimately, statistical findings indicated that other factors such as county percentage of whiteness as well as county percentage of democrat-leaning individuals may have more significant effects than religious identity on population-based vaccine compliance within the state of California.

Institution: NYIT College of Osteopathic Medicine

Title: *A Novel Lifestyle Intervention Program to Improve Body Composition and Chronic Disease Biomarkers in Overweight Medical Students.*

Authors: Sarah Jawadi, OMS-III; Guneet Kaur,OMS-III; Joanne DiFrancisco-Donoghue, Ph.D.

Background: Studies support that exercise and diet counseling interventions have shown positive outcomes in overweight and obese medical students by preventing future diagnosis of adverse medical conditions.

Objective: The objective of the study was to examine the use of activity trackers alone or combined with educational online modules to improve physical activity and body composition in overweight medical students throughout the school year.

Methods: This was a crossover study whose research protocol was approved by NYIT IRB. The setting was Riland Health Care Center at NYITCOM. The randomized clinical trial enrolled 40 participants (+- Age: 21-25),20 women and 20 men that were 1st and 2nd year students. They were divided into 2 groups;20 participants receiving the intervention the first 4 months and the other 20 participants receiving the intervention the following 4 months.The intervention group was including the Fitbit activity tracker and completed modules that consisted of 8 sections educating them on exercise and nutrition and also logging their diets on the MyFitness pal app. Weekly emails were sent out in order to offer lifestyle modification challenges.The second group was the Fitbit intervention but didn't receive the modules or track diet until the second 4 months. Outcomes consisted of body composition analysis (DEXA), blood lipid levels, and A1c.The primary results analyzed was step count and secondarily was body fat percentage, lean body mass changes, and blood lipids and A1c.

Results: There was a significant increase in group 1 step count in the first 3 weeks(G1- 6578.4(3876.1)-8643.5(5217.7)P=0.057).But then there was a steady nonsignificant decline from week 3 to the end of the intervention.Group 2 had no change in step count for the duration of the study.There was no significant change in body fat mass,lean body mass,blood lipids, and A1C in both groups for the duration of the study(P>0.05).

Conclusion: Utilizing activity trackers in addition with online health modules in both phases of the study showed no increase in activity,body composition changes, or blood lipids in the overweight medical students.

Institution: NYIT College of Osteopathic Medicine

Title: *Outcomes in Patients with Parkinson's Disease Undergoing Primary Total Hip Arthroplasty*

Authors: Simon Katz, BS, OMS-II; Leah Katz, OMS-I; Kevin Marchand, BS; Joseph Ehiorobo, M.D.; Michael A. Mont, M.D.

Context/Background: The orthopaedic management of PD patients has many challenges. These patients can suffer from poor bone quality and various musculo-skeletal problems such as arthritides, osteoporoses, and fractures.

Objective: The impact of Parkinson's Disease (PD) in patients undergoing primary total hip arthroplasty (THA) is limited. Therefore, the purpose of this study was to investigate whether patients with PD undergoing primary THA are at greater odds of 1) medical complications; 2) implant-related complications; 3) readmission rates; and 4) cost of care.

Methods: A retrospective query was performed from January 1st, 2005 to March 31st, 2014 using an administrative claims database. Patients and complications were queried using International Classification of Disease, ninth revision (ICD-9) and Current Procedural Terminology (CPT) coding. The database was first queried for all patients who underwent primary THA using ICD-9 and CPT procedural codes 81.51 and 27130. Using Boolean command operations, the inclusion criteria for the study group consisted of all patients undergoing primary THA with a 90-day history of PD prior to the index procedure. Patients without PD undergoing primary THA served as controls. Study group patients were matched 1:3 to controls according to age, sex, and Elixhauser-Comorbidity Index (ECI) to reduce the effects of confounding.

Results: Patients with Parkinson's Disease were found to have higher incidence and odds (4.64 vs. 1.15%; OR: 4.19, $p<0.0001$) of medical complications (Table 2). Similarly, patients with Parkinson's Disease also were found to have higher incidence and odds (7.12 vs. 3.99; OR: 1.84, $p<0.0001$) of implant-related complications compared to controls (Table 3). PD patients also had significantly higher incidence and odds of 90-day readmission rates (19.83 vs. 15.29%; OR: 1.37, 95%CI: 1.29 – 1.45, $p<0.0001$). Additionally, PD patients incurred greater 90-day cost of care ($20,142.67 ± $15,579.52 vs. $16,904.67 ± $14,815.40, $p<0.0001$).

Conclusion: Parkinson's Disease is associated with increased odds of medical complications, implant-related complications, readmission rates, and cost following primary THA.

Institution: NYIT College of Osteopathic Medicine

Title: *Comparative Serologic Testing of Lyme Disease by Western Blot Analysis*

Authors: Katherine Loomba, OMS-II; C. Pavia, Ph.D.; D. Zhang, Ph.D.; D. Shi, OMS-II; T. Sherpa, OMS-II; J. Chen, OMS-II

Context/Background: Lyme disease is rampant in the Northeast. If untreated, Lyme can cause neurological, cardiac and musculoskeletal consequences.

Objective: The objective of this study is to determine common reactive antigens involved in Borrelia Burgdorferi infection.

Methods: The research protocol was approved by the IACUC and designed as a survey. Rabbit sera collection was performed at NYMC, but all other procedures were conducted at NYIT Biomedical Sciences labs. 8 rabbit, 3 mice, and 11 human sera samples were used. 8-11 Ixodes scapularis ticks were immobilized on New Zealand White rabbits' ears and left for 24-48 hours. 1-3 months later, blood was collected and processed for serum. A hairless strain of mice was injected with cultured Borrelia from BL206; cardiac puncture was performed 2-6 months later and serum supernatant was collected. Human serum was collected from patients in Lyme endemic areas who presented with arthritis or cardiac concerns; they had not recognized a rash or received treatment for Lyme disease.

Western blot assay was used to detect presence of borrelial antigens recognized by exposed rabbits, mice and humans. Prior to immunoblot testing, a standard ELISA and/or indirect hemagglutination antibody test with B. burgdorferi strain B31 was used to confirm all samples were positive for borrelial antibodies. Sonicated B. burgdorferi strain B31 and protein ladders were separated using gel electrophoresis. Sera that reacted with the electrophoresed samples were conjugated with anti-alkaline phosphatase IgG/IgM. ECL Ultra A and B were applied and samples were processed with chemiluminescence.

Results: Rabbit, mice and human sera exposed to Borrelia consistently reacted to 30 kDa bands, and several also reacted to 41 kDa bands. Mice additionally showed reactivity to 83 and 93 kDa bands.

Conclusion: A safe and effective Lyme disease vaccine is important because not all those infected may recognize signs and seek treatment. Investigation of the most reactive Borrelia antigens may facilitate new vaccinations or improve issues with previous ones.

Institution: NYIT College of Osteopathic Medicine

Title: *Evaluating Osteopathic Medical Student Residency Application and Match Trends in Preparation for the Single-Accreditation System*

Authors: Joseph Marinelli, OMS-II

Context/Background: As the first residency match under a single-accreditation system approaches, it remains unclear how residency applications and future match rates will be affected for osteopathic medical students. A retrospective analysis of previous application and match data may reveal trends that can be used to identify such changes due to the Single-Accreditation System.

Objective: The objective of this study is to determine a quantitative relationship between residency applications and residency matching into different specialties among osteopathic medical students over time.

Methods: This study used a retrospective analysis of residency application and match data provided by The National Resident Matching Program (NRMP) and The Electronic Residency Application Service (ERAS). Match data was collected from the NRMP archives from 2002-2019. Then the percentage of osteopathic medical students matching into different specialties was calculated to determine osteopathic medical student representation compared to allopathic medical students for ACGME accredited residencies. Then, data was collected from ERAS to determine the percentage of residency applications for these specialties that were osteopathic medical students. Application vs. match data were quantitatively analyzed to establish trends and determine a relationship between the two from 2014-2019.

Results: Several specialties have seen steady increases in application number and match percentages among osteopathic medical students such as Physical Medicine and Rehabilitation (slope=1.02, r=0.81). Other disciplines have seen limited change in application number or match percentage over the same time. In addition, the percentage of osteopathic matches for several disciplines exceeds the overall percentage of osteopathic applications such as in Family Medicine. However, the percentage of osteopathic matches for several disciplines has dramatically under-represented the percentage of osteopathic applications such as in Orthopedic Surgery.

Conclusion: These results provide a novel perspective on osteopathic residency application and match data which reveal trends in osteopathic medical student specialty interest. These data can be used to evaluate possible changes that emerge from the Single-Accreditation System.

Institution: NYIT College of Osteopathic Medicine

Title: *Comprehensive Update of Whiteboards During Multidisciplinary Rounds on a Medicine Floor and its Impact on Inpatient Length of Stay*

Authors: Donato Mignone, OMS-III; Keya Shah, OMS III; Guneet Kaur, OMS-III; Merjona Saliaj, M.D.; George Martin, M.D.

Context/Background: The Whiteboards Multidisciplinary Rounds (WMR) in an inpatient setting typically consists of a team of physicians, nurses, patient-care associates, pharmacists, social workers, and care managers that serves to coordinate patient care and discharge planning.

Objective: The objective of this Quality Improvement (QI) study is to determine if consistent documentation during WMR reduces patients' length of stay and hospital resources on an inpatient medicine floor at an inner-city hospital.

Methods: A prospective cohort quality improvement study was conducted at an inner-city hospital from October 2019 to December 2019. Interdisciplinary teams rounded daily at patients' bedside followed by a whiteboard update with pertinent patient care information. Two medical teams providing care in the same unit were categorized into interventional and non-interventional. The intervention team consisting of 114 patients received closer monitoring from the attending and/or residents in order to comprehensively update the whiteboards, while the non-intervention team consisting of 117 patients followed the existing standard of data updating. T-test statistical analysis were used to compare both teams in order to analyze differences in patient parameters.

Results: The intervention team reported an average LOS of 2.9 days, peripheral/central line use of 77.4%, and telemetry use of 32.8%. The non-intervention team reported an average LOS of 4.3 days, peripheral/central line use of 85.1%, and telemetry use of 44.6%. The data showed a statistically significant decrease in patient length of stay ($p=0.016$), reported use of peripheral/central lines ($p=0.006$), and reported use of telemetry ($p=.001$).

Conclusion: Implementation of consistent documentation during WMR decreased patients' length of stay and reported use of peripheral/central lines and telemetrys. The results of the study suggests that consistent documentation of WMR can improve the quality of patient care while simultaneously reducing the cost of care.

Institution: NYIT College of Osteopathic Medicine
Title: *Deep Learning-Based Histopathologic Detection of Inflammation in Mice Renal Pathology*
Authors: Shreya N. Patel, OMS-II; Monish Singh, MS; Abraheem N. Ahmad, Eric J. Schram, OMS-II;
Maria M. Plummer, M.D.; Olga V. Savinova, Ph.D.

Objective: To develop a deep learning digital pathology protocol to identify inflammatory infiltrates in kidney tissue sections from mice affected by chronic kidney disease (CKD).

Introduction: Current histopathologic assessment of renal pathology relies on approaches such as biopsies and traditional image processing techniques (1). This study aims to present an alternative approach. The authors trained deep neural networks for image segmentation of kidney tissue sections stained hematoxylin and eosin (H&E).

Deep learning is defined as a "set of methods that automatically detect patterns in data, and then utilize the uncovered patterns to predict future data or enable decision making under uncertain conditions" (2). Deep learning was inspired by the human cognition system, and has been developed to become a special type of artificial neural network (ANN). This network system is well suited to analyze medical data and extract valuable knowledge from it. Examples of its potential include: automatically detecting lesions, suggesting differential diagnoses, and performing quantitative feature analysis of pathology in medical imaging (2).

In this study, we used Dragonfly 4.1, a software platform with deep learning capabilities and the power to intuitively inspect multi-scale multi-modality image data (3). Through Dragonfly's image segmentation or classification ability, we were able to simplify the representation of renal tissue sections into an easier to analyze image. Once segmentation is completed, Dragonfly organizes those tissue sections into higher-level units, such as inflammatory infiltrates that can be distinguished from other structures such as glomeruli for more effective visualization and further analysis.

Methods: We trained the Dragonfly deep neural network using multiple region of interest (Multi-ROI) segmentation analysis to analyze a dataset of 141 mouse kidney tissue sections. We trained 20 slices of input data to identify inflammation as neutrophilia in the images of stained sections that were thresholded to highlight nuclei. After creating multi-ROIs, we generated a new multi-label segmentation model via the deep learning tool, utilizing U-Net as its architecture, since U-Net is well suited for all segmentation types. The training for segmentation had a 20% validation, epochs number of 50, input patch size of 128, stride to input ratio of 0.5 (in a single patch of input data, there is a 50% overlap between the first and second batch), and lastly a batch size of 32.

Results: We ran the deep learning training model with the above parameters and successfully trained the model to identify inflammation of the kidney tissue slices from CKD mice but not in the control mice.

Conclusion: This study features a deep neural network for multi-label segmentation of H&E stained kidney tissue samples. We successfully trained the network to identify inflammation. Going forward, our network may have utility in quantifying inflammation across varying degrees of kidney pathology, which can be used to provide deep learning applications in routine diagnostics and eliminate time-consuming methods.

Institution: NYIT College of Osteopathic Medicine

Title: *Gut Microbiome Changes in Parkinson's Disease with Constipation After Osteopathic Manipulative Medicine*

Authors: Haque Shakil, BS, OMS-I; Jayme Mancini, Ph.D., D.O.; To Shan Li, D.O.; Sheldon Yao, D.O.

Background: Studies have shown that the gut microbiome plays an integral role in constipation experienced in Parkinson's Disease (PD). While osteopathic manipulative medicine (OMM) has been found to improve constipation, it is unclear how the gut microbiome in PD changes with OMM.

Objective: To determine the effect of four weekly treatments of OMM on the gut microbiome profiles of participants having PD and constipation.

Methods: The research design was a controlled, longitudinal study approved by NYIT-IRB (BHS1065). All sessions were conducted in the NYITCOM PD Center. Participant eligibility included age 40 years or older, diagnosis of PD, constipation according to Rome III criteria. Participation involved 4 weeks of control followed by 4 weekly OMM treatments. PD severity was quantified by the unified PD rating scale (UPDRS). Patients provided stool samples for analysis every other visit. Normalized mean abundances of microbiota from biweekly stool samples were tested using repeated measures ANOVA and Bonferroni post-hoc analysis and compared to UPDRS scores via Spearman's correlations.

Results: A total of 7 eligible, consenting participants completed the study. Stool samples after OMM treatments showed significant decreases in mean abundances for two bacterial phyla, Actinobacteria 1.66% (p=0.040) and Verrucomicrobia 7.82% (p=0.024), compared to controls. Hoehn & Yahr, a UPDRS sub-score, significantly correlated with baseline abundance of Actinobacteria -0.859 (p=0.028). The UPDRS subscores for mobility, gait and posture, particularly the painful off-state dystonia subscore, significantly correlated with control Verrucomicrobia 0.870 (p=0.024) as well as the family Prevotellaceae -0.464 (p=0.432). Total UPDRS score significantly correlated with Euryarchaeota 0.895 (p=0.016), Fibrobacteres 0.963 (p=0.002), and Synergistetes 0.841 (p=0.036).

Conclusion: The weekly OMM treatment was shown to significantly decrease two phyla of gut bacteria, one of which showed a direct correlation to PD severity. Such results offer a mechanistic explanation of how OMM might treat PD symptoms. Further studies are necessary to elucidate the clinical relevance of these changes in the gut microbiome.

Institution: NYIT College of Osteopathic Medicine

Title: *Role of DNA2 in Suppressing Alternative Lengthening Telomeres Based Cancer*

Authors: Tshering Sherpa, OMS-II; Justin Chen, OMS-II; Kathrine Loomba, OMS-II; Zoha Mian, OMS-II; Danilo Shi, OMS-II; Marni Wilkoff, OMS-II; Emily Seltzer, OMS-III; Dong Zhang, Ph.D.

Abstract: Cancer cells are able to maintain their telomeres and proliferate forever by: (1) reactivating the telomerase; (2) adapting the alternative lengthening pathway (ALT). Previously, we showed that FANCM, BRCA1, and BLM help alleviate replication stress at ALT telomeres. In addition, we showed that co-depletion of FANCM and BRCA1, or FANCM and BLM induce synthetic lethality in ALT cancers. We wanted to further investigate another key protein involved in the ALT pathway. DNA2 is both a nuclease and a DNA helicase and plays an important role in a variety of DNA repair processes. Here, we investigated the role of DNA2 in the replication stress response at ALT telomeres to determine an efficacious strategy to treat ALT cancers.

Research Questions:
1. Does depletion of DNA2 affect the viability of ALT cancers?
2. Does depletion of DNA2 induce replication stress at ALT telomeres?

Methods: U2-OS, an osteosarcoma cell line, was used as the cellular model for ALT cancer cells. FANCM and DNA2 were depleted, either individually or in combination, using siRNA transfection. Following transfection, the cells were stained with antibodies specific for TRF2, a telomere marker, and either pChK1, pRPA or BLM, all of which are DNA damage markers. The stained cells were then visualized using a fluorescent microscope. The viability of the cells was assessed through crystal violet assays.

Results: SiRNA depletion of DNA2 induced replication stress at ALT telomeres, as indicated by the increased pChk1, pRPA, and BLM foci that co-localized with the TRF2 foci. Intriguingly, Co-depletion of DNA2 and FANCM had synergistic co-localized foci formation at pChk1 and pRPA foci. siRNA depletion of FANCM and DNA2 in ALT cells decreased cell viability to the greatest extent when co-depleted, as opposed to either one depleted alone.

Conclusion: Chemotherapy, which is associated with a myriad of toxicities, is currently the only treatment available for ALT-dependent cancers. Our results suggest that either inhibition of DNA2 alone or in combination with the inhibition of FANCM may be an efficacious strategy to treat ALT cancers.

Institution: NYIT College of Osteopathic Medicine

Title: *Drivers of Subspecialty Choices Among Psychiatry Residents - A Pilot Study*

Authors: Muhammad Syed, OMS-III; Ijendu Korie, M.D.; Marusa Obele, M.D.; Sivaranjani Ayyanar, MBBS; Ulziibat Person, M.D.; Sara Afzal, MBBS; Sagarika Ray, M.D.; Romain Branch, M.D.- NUMC.

Background: In view of the current opioid epidemic, soaring rates of suicide in the country, growing aging population with mental health needs and amidst other mental health problems there is a growing demand for Psychiatrists. Sub-specialty experts in the field of Child and Adolescent Psychiatry, Addiction Psychiatry, Geriatric Psychiatry and others are constantly needed. However, the factors that drive the choice of specialty among the psychiatry residency graduates are less discussed in current literature. Exploring these factors may facilitate efforts directed towards increasing the number of trainees in certain subspecialties in order to address ongoing demand. Our pilot study in a community hospital residency program highlights some of the driving forces of specialty choices among psychiatry residents with the goal of creating awareness in this less discussed topic.

Objective: To explore the factors that influence sub-specialty choices among psychiatry residents in a community teaching hospital.

Method: A printed questionnaire was distributed to psychiatry residents and fellows at our community teaching hospital. Responses were anonymous.

Results: Out of 25 responders, 21 (84%) chose a subspecialty while 4 (16%) did not. Among those who chose a subspecialty 52.4% chose Child and Adolescent Psychiatry, 14.3% Consult Liaison, 14.3% Addiction, 4.8% Forensic psychiatry, 4.8% Community psychiatry and 4.8% Geriatric psychiatry. The factors influencing the choice of subspecialties included patient population preferences (90.5%), "feeling called" (71.4%), mentor influence (57.1%), demand for the specialty (57.1%), flexible work schedule (47.6%), ability to fast track (28.6%) and monetary compensation (28.6%). Reasons for not pursuing a sub-specialty included, "not necessary", additional years of training, immigration, and personal reasons.

Conclusion: In our study a higher proportion of participants chose a psychiatry subspecialty. A further look at the reasons for choice may be informative and may help understand the reason for the scarcity of certain psychiatry subspecialists. Expanding this study across other residency programs will also provide more inclusive data.

Institution: NYIT College of Osteopathic Medicine
Title: *The Exploration of Pink Noise Frequencies to Treat Chronic Pain*
Authors: Daniel Veyg, OMS-II; Lizbeth Hu, B.S., NYU SoM; Jing Wang, M.D., Ph.D., NYU SoM

Background: Chronic pain affects millions worldwide and research has shifted to exploring non-pharmacological treatment approaches. It has been suggested that sleep spindles, brain waves that occur in stage of non-rapid eye movement sleep, have a function in sensory processing. Poor quality sleep has been shown to be a risk factor for chronic pain suggesting interventions during sleep may have potential benefits in treating pain. One way to amplify the occurrence of sleep spindles is through the use of pink noise frequencies.

Objective: Given this understanding of the role of sleep spindles, this experiment investigated their potential as a therapeutic target in treating chronic pain using a rodent model.

Methods: Experiments were conducted on 7 male Sprague-Dawley rats obtained from Taconic Farms, Albany, NY. Rats underwent a spared nerve injury (SNI) procedure, which has been supported as a neuropathic pain model in rodents. Rats were allowed to recover for at least 1 week after surgery. Pink noise was delivered for 14 consecutive days, for 8 hours each day, during rat sleep time. Mechanical allodynia testing was performed using the Dixon up-down method with von-Frey filaments. Rats were placed on a mesh table, allowed to acclimate, and the hind limb paw was stimulated with filaments of logarithmically increasing stiffness. Withdrawal thresholds were recorded and 50% mechanical nociceptive threshold was computed using the Dixon method before and after the 14-days consecutive pink noise stimulation.

Results: We found that there was a significant increase (P=0.016) in 50% withdrawal threshold with allodynia testing with an average increase of 2.77g.

Conclusion: This study showed that 14-day pink noise stimulation statistically decreased allodynia in rats with chronic pain from SNI surgery. This finding is consistent with previous findings that pink noise increases spindle density, as this increase is associated with a better pain response, and no other interventions were performed on the rats. Future avenues of study may include real-time acoustic stimulation during sleep in humans with pain.

Institution: NYIT College of Osteopathic Medicine

Title: *Investigating the Effects of Osteopathic Manipulative Therapy on Patients with Implanted Cardiac Devices*

Authors: Amy Young, OMS-II; Alyssa Auerbach, OMS II; Daniel Meshoyrer, D.O.; George Cheriyan, D.O.; To Shan Li, D.O.; Sheldon Yao, D.O.; Todd Cohen, M.D.

Context/Background: Arrhythmias are well associated with specific somatic dysfunctions (SDs) and nervous system activity, and osteopathic manipulative therapy (OMT) has been shown to regulate these dysfunctions.[1,2] Minimal research has been done investigating the effects of OMT on arrhythmias and in assessing any quality of life (QOL) changes in arrhythmic patients.

Objective: OMT will improve the QOL for patients with arrhythmias.

Methods: The study is a randomized controlled trial approved by the New York Institute of Technology IRB (NYIT IRB approval BHS 1464). Patients visiting the clinic for their routine cardiology appointment were asked to participate in the trial and randomized to either an intervention or control group. Eligibility criteria required a diagnosed, remotely-monitored, and controlled arrhythmia. 21 subjects have been enrolled in the study, 10 to control and 11 to intervention. Both groups underwent a full osteopathic structural exam. The intervention group received OMT addressing SDs aimed to regulate autonomic tone to the heart. The control group received light touch treatment.[1] Outcome measures included the RAND 36-Item Health Survey at the time of treatment and one month later to assess QOL.

Results: Preliminary data was analyzed via two-factor ANOVA, demonstrating a statistically significant difference between the intervention group's pre-OMT and post-OMT QOL scores (p=0.006), with the greatest improvement in the category of QOL associated with emotional problems (avg. Δ9.523).

Conclusion: The study thus far illustrates the potential for patients with arrhythmias to benefit from OMT. There will be additional studies for reproducibility and continued enrollment of participants to further explore these correlations. An additional study investigating the influence of OMT on the number of cardiac events measured via implantable devices is in progress, and will provide objectivity to the influence of OMT on arrhythmias.

Institution: Touro College of Osteopathic Medicine

Title: *Ablation of Androgen Signaling via Enzalutamide Could Inhibit Tumor Growth & Metastasis in Osteosarcoma*

Authors: Elise Hsu, OMS-II; O. Verhagen Metman; C. Smith, O. Mobarakai; S. Orellana; K. Degenhardt

Context/Background: Osteosarcoma is the most common cancer in pediatric patients, arising during puberty and coinciding with long bone growth and development. Current treatment involves chemotherapy, which is dangerous for pediatric patients due to severe DNA damage causing dysfunction and neoplasia later in life, as well as destroying stem cells needed in physical maturation. Chemical ablation of androgen signaling could provide a safe method of impeding tumor growth and metastasis in osteosarcoma.

Objective: The objective of this study is to determine if enzalutamide, a selective androgen receptor antagonist, could delay tumorigenesis, increasing survival in pediatric patients with osteosarcoma.

Methods: NCR *nu/nu* mice will be used to assess tumor growth and metastasis of cell line MG63. Slow-release testosterone and enzalutamide pellets were implanted in mice with MG63. The following 6 groups of mice are being observed for tumor growth and metastasis: Control (not castrated, no treatment), not castrated + testosterone, castrated – testosterone, castrated + testosterone, castrated + testosterone/enzalutamide, and castrated + enzalutamide (n=15 per group). Tumor size will be measured using a digital caliper.

Results: We hypothesize that enzalutamide may mitigate the spread of osteosarcoma. We expect the mice that receive enzalutamide to show increased survival and decreased metastasis. We expect the groups not receiving the ablation to show decreased survival and increased metastasis relative to the enzalutamide- treated mice.

Conclusion: Further analysis of the enzalutamide group could elucidate the processes by which androgen ablation- mediated inhibition of tumorigenesis occurs. We intend to use IHC and qPCR of primary and metastatic tumor tissues to this end. Hopefully, these results will point to androgen ablation as a potent new treatment for the debilitating effects of pediatric osteosarcoma.

Institution: Touro College of Osteopathic Medicine

Title: *Stress Effect - The Impact of Stress on Medical Students' Ability to Focus, Perceived Academic Achievement, & GPA*

Authors: Marco Lawandy, OMS-III; Tobin Thuma, OMS-III; Christine Lomiguen, M.D.

Background: Stress is commonly perceived as a hinderance to high academic performance. There is a concordance of opinion amongst scientists; stress negatively impacts focus and academic performance. But what if medical students do not play by the rules?

Objective: To identify the relationship amongst an individual's perceived level of stress and their focus, academic achievement, and GPA. This relationship was examined among first and second year medical school students.

Methods: A voluntary, confidential survey was used to harvest information on the perceived levels of stress, focus, academic achievement, and GPA of medical students. Participants indicated their perceived stress level (1-5), focus level (1-5), academic achievement (1-5), and recorded their I.D. number (used to determine GPA).

Results: 121 surveys met the inclusion criteria. The results are divided based on a low stress level group (N=50) (stress level 1-3) and a high stress level group (stress level 4-5) (N=71). The average perceived level of focus was 3.46 in the low stress group and 3.07 in the high stress group (p=0.016). The average perceived level of academic achievement was 3.70 in the low stress group and 3.35 in the high stress group (p=0.030). The average GPA was 3.23 in the low stress group and 3.24 in the high stress group (p=0.871).

Conclusion: Students in the low stress level group had a significantly higher level of focus than students in the high stress level group; stress level and level of focus are negatively correlated. There is no significant difference in GPA between students in the low stress category vs the high stress category, suggesting that no matter how stressed a student may be, it will not have any effect on GPA. Although students of both low and high stress levels performed equally well, their perceived level of academic achievement is negatively correlated with their level of stress. This may be because a high stress level negatively impacts a student's positive self-regard and feelings of accomplishment.

Institution: Touro College of Osteopathic Medicine
Title: *Muslim American Physicians' Views on Brain Death: Findings from a National Survey*
Authors: Sadaf Popal, OMS-III; Stephen Hall, M.P.H.; Aasim I. Padela, M.D., MSc

Background: Biotechnology has introduced a new physiological state, "brain death," that continues to attract controversy and confusion. While variability in diagnostic criteria for, and physician practices regarding, determining "brain death" has been studied, few studies examine physicians' normative views on the significance of "brain death" and how religiosity implicates these views.

Objective: To assess how Muslim physicians' views on death, and how their religiosity and acculturation associate with their perceptions of brain death.

Methods: A randomized national sample of 625 Muslim physicians completed a mailed questionnaire assessing sociodemographic characteristics, religiosity, and views about death. Measures of religious practice and acculturation were analyzed as predictors of physician views at the bivariate and multivariable level.

Results: Two-hundred and fifty-five respondents completed the survey (41% response rate). Most participants agreed that death is the irreversible cessation of cardiac and respiratory function (90%), while half agreed or disagreed with other definitions of death, such as loss of personhood or the equivalence of cardiopulmonary and neurological criteria for death. Physicians who scored higher on the religious practice scale had lower odds of viewing "brain death" as true death, while those who were born in the US or immigrated to the US as a child had greater odds of viewing death as the irreversible loss of personhood and consciousness.

Conclusion: Physician characteristics such as religiosity and acculturation appear to influence their views on what constitutes death and how it should be diagnosed. In our sample of Muslim physicians, there appears to be significant reservation towards equating neurological and cardiopulmonary criteria to determine death, and disquiet regarding the meaning of "brain death" in general. Greater research is needed to evaluate how such perceptions impact their physician recommendations and practices regarding organ retrieval, death declaration and withdrawal of life support. Furthermore given that the normative implications "brain death" continue to challenge some physician groups, policy action regarding standardizing communication with families and recourses to conscience clauses may be worth examining.

Institution: Touro College of Osteopathic Medicine
Title: *Cultural Factors in Childhood Lead Poisoning: An Osteopathic Approach to Prevention*
Authors: Bahadar S. Srichawla, OMS-III; Nilank Shah, M.D.

Background: The Lead Contamination Control Act of 1988 allowed the Centers for Disease Control (CDC) to initiate Childhood Lead Poisoning Prevention Programs (CLPPPs) throughout the United States. Studies have shown that lead poisoning can be particularly harmful in infant populations causing significant neurological dysfunctions [1]. Although we have seen a significant decrease in toxic lead poisoning throughout the decades specific immigrant communities still face elevated incidence of toxic blood lead levels (BLL). Thus, further interventions are needed in Osteopathic medical education to determine risk factors and provide resources for physicians in providing support for high risk immigrant communities.

In this observational study we evaluated the incidence of childhood lead poisoning (CLP) in various ethnic immigrant populations from 2013-2016. Specific data was collected on the elevated BLL, country of origin as well as the vector or agent causing elevated BLL in children. Immigrant populations with elevated BLLs were then compared to non-immigrant populations to create a comparative analysis in determining incidence of elevated BLL. We further investigated the causative agent of elevated BLL to develop further insights that need to be implemented in Osteopathic medical education to create a preventative medical model of care. And to help facilitate fulfillment of CDC goals of "Healthy People 2020".

Methods: Declassified county department of health data was obtained on parameters related to childhood (≤ 18 years of age) lead poisoning. Data was subsequently classified based on research parameters i.e. elevated BLL, country of origin, causative agent. Immigrant classification was based on the parental birth country. Elevated BLL was defined by CDC threshold of ≥ 10 µg/dL, after in which public health actions need to be initiated. Comparative statistical analysis was conducted to determine incidence of elevated BLL in immigrant population compared to non-immigrant populations. Further correlative insights were generated based on "non-traditional" causative agents (i.e. imported candy, cultural cosmetic products, imported toys, pottery etc.) of elevated BLL to propose an Osteopathic preventative medical model to tackle this growing public health threat.

Results: 106 children were newly identified with blood levels ≥ 10.0 µg/dL between 2013-2016. The average BLL of these children was 17.6 µg/dL as compared with an average BLL of 16.1 mcg/dl from 2006-2012. More males were found to be affected than females (58% vs. 42%). Approximately, 40% of the children had BLL between 10-14.9, 33% between 15.0-19.9 about 26% between 20-44.0 and 1% over About 45% of cases were classified as exposure to "non-traditional" agents. We found that over 78% of products (i.e. turmeric, kajol, surma) were traced to the South Asian community, and approximately 18% were of Mexican origin (i.e. candy, pottery, toys). The South Asian community makes up over 37% of children with EBLL and yet account for only 3% of the county population. The Hispanic community made up approximately 28% of children with EBLL but only 13% of the population.

Conclusion: Our analysis shows that childhood lead poisoning is of significant concern amongst South Asian and Mexican ethnic communities. In order to mitigate the incidence of CLP, further considerations of improving Osteopathic undergraduate and graduate medical education need to be implemented via identification of cultural risk factors mentioned. Further research on public health outreach mechanisms are also warranted to prevent lead poisoning in these communities.

Institution: Touro College of Osteopathic Medicine

Title: *Assessing Sacral Somatic Dysfunction and Hours Seated in Relation to Developing Low Back Pain in Pre-clinical Osteopathic Medical Students*

Authors: Shannon Sunny, OMS-III; James Chan, OMS-III; Nicole Morales, OMS-III; Akshat Patel, OMS-IV; Munib Francis, OMS-IV; Michael Lew, OMS-IV; Mikhail Volokitin, D.O.

Context/Background: Low back pain is a ubiquitous complaint in the same way in which prolonged hours seated is unavoidable for pre-clinical medical students. There is scarce information on sacral somatic dysfunctions and low back pain, in relation to hours seated.

Objective: This study sought to determine if prolonged sitting has an effect on sacral somatic dysfunction (SD) and subsequently low back pain.

Methods: This research design was approved by TouroCOM IRB. Over 60 pre-clinical medical students volunteered during biweekly student-run clinic sessions on campus. Subjects completed a self-reported questionnaire assessing any history and present low back pain, elaborating on provocation and palliation of back pain if any, and quantified hours seated. Afterwards subjects were screened for sacral somatic dysfunction by two student researchers, to address interexaminer reliability. Anterior and posterior sacral SD, presence of back pain and hours spent seated were main outcome measures among subjects.

Results: Among all the subjects who admitted to low back pain, there is a significant correlation in the total hours seated in a day ($p = 0.028$) and the total hours seated while studying ($p = 0.053$). Specifically, those with anterior SD sit for longer in total and while studying compared to subjects with posterior SD.

Conclusion: The results of this study suggest a correlation in presence of low back pain, type of sacral somatic dysfunction and hours spent seated among pre-clinical OMS students. Further studies to elucidate causation is necessary to fully understand the connection. Follow-up post OMM treatment and ergonomic study stations are initial research topics to begin to mitigate the pervasive low back pain complaint.

Institution: Touro College of Osteopathic Medicine
Title: *Mental Health Matters: Comparing the Self-Reported Mental Health of Medical Students with their Wellbeing and GPA*
Authors: Tobin Thuma, OMS-III; Marco Lawandy, OMS-III; Christine Lomiguen, M.D.

Context/Background: Medical students' mental health is a vital issue facing contemporary medical education as depression and burnout levels are dramatically increased during medical training. There is a dearth of research on the effects of mental health on overall wellbeing and academic achievement of medical students. How does medical students' mental health affect their welfare and success?

Objective: To identify the relationship between medical students perceived mental health and their physical health, stress and GPA. These relationships are explored among first- and second-year medical students.

Methods:
- Design: An anonymous survey was employed to gather information on various self-perceived parameters of health, wellbeing and academic success. Participants rated their mental health (1-5), physical health (1-5), stress (1-5) and recorded their ID numbers. Their GPAs were gathered using the student's ID number. Students were separated into "low" (1-3 of 5) and "high" (4-5 of 5) mental health categories based on their self-reported mental health scores (1-5).
- Setting: Preclinical lecture hall of TouroCOM Harlem.
- Participants: First- and second-year osteopathic medical students.
- Interventions: None
- Main Outcomes: Average reported physical health, stress and GPA.

Results: 121 surveys met the inclusion criteria. The average physical health was 3.03 in the "low" mental health group (n=61) and 3.88 in the "high" mental health group (n=60) ($p<.001$). The average stress was 3.87 in the "low" mental health group and 3.35 in the "high" mental health group ($p<.001$). The average GPA was 3.22 in the "low" mental health group and 3.26 in the "high" mental health group ($p=.33$).

Conclusion: Medical students who reported a lower mental health had a lower reported physical health and higher level of stress. However, there was no statistical significance in GPA between "low" and "high" mental health groups. Therefore, it appears that good mental health is correlated with a decrease in stress and an increase in physical health but has no substantial impact on GPA.

RESEARCH ABSTRACTS

INTERNS/RESIDENTS/FELLOWS

R01 - R16

Institution: Coney Island Hospital
Title: *Improving HIV Testing Rates Among Adolescents in Primary Care*
Authors: Dennis Dorf, D.O., MPH; Kahn, Benjamin; Seigel, Warren, M.D.

Background: The AAP and CDC recommend HIV screening for all persons between the ages of 13-64. According to the CDC[i], the prevalence of HIV in the US is 1.2 million, with approximately 150,000 of these individuals unaware of their diagnosis. In 2017, youth aged 13-24 made up 21% (8,164) of the 38,739 new HIV diagnoses[ii].

Objective: Assess Coney Island Hospital's adherence with current recommendations for HIV screening in our Adolescent and Young Adult Primary Care Program and determine if changes are necessary.

Methods: Retrospective review of patient medical records between the ages of 13-21 between January 1 and June 30, 2019. We assessed documentation regarding sexual activity, HIV education, testing and screenings, or if a notation indicated why screening was not performed.

Results: Of the 1,428 patients seen, 1,298 (91%) were provided with written/oral HIV education. All 1,298 had HIV testing offered. Of those, 290 (22%) admitted being sexually active. Consent rate of sexually active patients for HIV testing was 79.6% (231). Of those tested, 228 (98.7%) were negative and 3 (1.3%) were positive and received appropriate referrals. Of the 3 positive patients, 2 were male and 1 female and all 3 were over 16 years of age and self-identified as bisexual.

Conclusion: Current procedures yielded an education rate of 91% and an HIV screening rate of 79%, well below the national recommendations and non-compliant with national recommendations from the AAP and CDC. Of the 9% who were not educated, the status of sexual activity and potential for HIV infection is unclear. Of the 79% of sexually active patients who consented to screening, the HIV infection rate was 1.3%. This suggests that at least 1 HIV positive patient was not identified from the cohort who were offered testing.
In order to improve the quality of care, we need to change our policy to opt out testing, supplement the number of trained HIV educators and primary care providers for HIV screenings.

Institution: Coney Island Hospital

Title: *Retrospective Analysis of the Contribution of Cannabis Usage to Diabetic Ketoacidosis at an Urban Teaching Hospital*

Authors: Christine K. Kha, D.O.; Ellyn Phan, M.D.; Nicole Simon, M.D.

Background: Diabetic ketoacidosis (DKA) is an acute life-threatening complication of diabetes mellitus. It is responsible for greater than 100,000 hospital admissions per year in the US. Cannabis is the most commonly used illicit drug in the US. There are few studies regarding the relationship between drug usage and acute diabetic complications.

Objective: To examine the relationship between cannabis usage and risk for DKA upon presentation at an urban hospital. To examine the awareness of substance abuse screening, especially in adults with recurrent DKA hospital admissions.

Methods: The research protocol was approved by BRANY IRB. A retrospective analysis was performed at an urban hospital from March 2017 to February 2019. All non-pregnant patients aged 18 years and older and who met criteria for DKA were included in the study. Demographics, vitals, biochemistry, and toxicology were evaluated.

Results: Overall, there were 188 DKA admissions identified in a total of 130 patients during this time-frame. Of these admissions, 36% (67/188) underwent general toxicology screening, which did not include detection of cannabis. 11% (20/188) completed cannabis-specific toxicology screening. 20 of the 130 patients presented with newly diagnosed diabetes, where none reported cannabis usage and 15% (3/20) completed toxicology screening. Illicit substance usage was addressed by history in 72% (135/188) of all admissions, where 24% (33/135) reported cannabis usage. 73% (24/33) of the self-identified cannabis usage group completed toxicology screening, and all in this group presented with additional aggravating factors for DKA including medication noncompliance, infection, and polysubstance abuse.

Conclusion: From the retrospective analysis, there is a need for awareness about substance abuse screening, especially in adults with a history of recurrent hospital admissions for DKA. Knowledge among health care providers and patient education regarding the effect of cannabis usage on metabolic factors and its diabetes complications, including diabetes self-management at time of drug usage, can be further explored in prospective studies.

Institution: Coney Island Hospital

Title: *Management of Osteoporosis After Initial Hip or Other Low Trauma Related Fracture in Coney Island Hospital and its Effects on Occurrence of Subsequent Fracture*

Authors: Dmitriy Khazron, D.O.; Alana Lewis, M.D.; Juan Castillo Morrobel, M.D.; Olga Galperin, M.D.; Antony Anandaraj, M.D.; Nilar Soe, M.D.; Helen Gnanapragasam, M.D.; Nicole Simon, M.D.

Context/Background: Osteoporosis is the most common metabolic bone disorder disease in adults which frequently is the culprit of a fragility fracture. Rate of osteoporosis and subsequent treatment after the first fracture remain low. As a result, the past decade has seen introduction and adaptation of novel strategies such as Fracture Liaison Services (FLS) aimed at reducing fracture rates.

Objective: To obtain and analyze data on the institution of appropriate diagnostic and therapeutic standards of care after hospitalization for hip or other osteoporosis related fractures and to analyze rate of readmission for recurrence(s) in patients who were or were not placed on appropriate medical treatment.

Methods: We conducted a chart review of patients admitted between 2008 – 2017 with a diagnosis of any type of fracture including hip, spine, humerus, pelvis, wrist, and rib fractures. Specifically, we reviewed the rates of post-fracture diagnostic investigations and pharmacotherapeutic interventions for both inpatients and outpatient referral practice.

Results: 1438 charts that met the admission criteria were identified. 1300 charts were included and reviewed. 69 patients had available follow up visits and medical records for review. None of the 69 patients were prescribed a bisphosphonate or anabolic agent on discharge. Only 3 out of 69 had DXA scan ordered on discharge. 55 out 69 patients seen by outpatient primary care physicians did not have any further diagnostic or therapeutic intervention after first fragility fracture. Among those who had no further treatment, 8 patients had documented repeat fractures at a later time.

Conclusion: FLS programs have the potential to effectively coordinate the transition of post fracture care as well serve as a resource for patient education regarding importance of treatment and follow up while simultaneously providing an opportunity for education of healthcare professionals including physicians across multiple specialties.

Institution: Coney Island Hospital
Title: *The Utility of 1,5 Anhydroglucitol as a Reliable Indicator of Glycemic Control in Diabetes Mellitus*
Authors: Merlyn Mathew, D.O.; Silvia Bercovici, M.D.

Background: The 1,5 anhydroglucitol test is a biochemical marker measuring serum 1,5anhydroglucitol, a monosaccharide found in most foods and also synthesized in liver. The molecule of 1,5 anhydroglucitol is filtered via glomerulus and once the renal threshold is met when serum glucose exceeds 180mg/dl, the resulting glycosuria will decrease reabsorption of 1,5 anhydroglucitol and it becomes excreted in urine, therefore resulting in decreased serum 1,5 anhydroglucitol levels. Therefore, there is an indirect relationship between the duration and frequency of hyperglycemia and serum 1,5 anhydroglucitol level. This test is used to assess the presence of post-prandial hyperglycemia and glycemic variability, with the potential of impacting diabetes management.

Objective: The objective of this study is to assess the utility of 1,5 anhydroglucitol as indicator for glycemic control by measuring if there is a significant reduction in hemoglobin A1c levels for patients with type 1 or type 2 diabetes mellitus.

Methods: The research protocol was approved by BRANY IRB. This is a retrospective chart review to assess the diagnostic yield of 1,5 anhydroglucitol testing in diabetics in the endocrinology clinic at Coney Island Hospital between January 1, 2017 and December 31, 2019. The 1,5 anhydroglucitol testing is labeled as "significant" if the findings noted hemoglobin A1c reduction of at least 0.5% over a 6 month - 1 year period of time. The serum hemoglobin A1c levels is reviewed at baseline or prior to endocrinology visit, 6 months and 1 year post 1,5 anhydroglucitol level testing.

Results: From this retrospective chart review, a total of 45 subjects were identified who underwent 1,5 anhydroglucitol testing. Preliminary results reveal 18 out of 45 subjects showed a significant reductions in serum hemoglobin A1c levels, however statistical analysis of data is still pending.

Conclusion: The preliminary results of this study suggest that 1,5 anhydroglucitol may be used as a tool for assessing glycemic control and can assist in the management of diabetes mellitus, however statistical analysis is still pending.

Institution: Coney Island Hospital
Title: *Screening Inner-City Adolescents for Depression and Suicide*
Authors: Carli Thomas, D.O.; Dennis Dorf, D.O., MPH; Kahn, Benjamin; Seigel, Warren, M.D.

Background: Depression is a common condition in adolescents with a reported prevalence of 13.3%. The AAP and USPSTF recommend screening all adolescents between ages 12-18 years for MDD[i].

In the past, pediatricians at Coney Island Hospital asked all adolescents if they were depressed and/or suicidal during their primary care visits yielding a positive rate of 1-2%. In 2018 to improve our screening process we implemented the PHQ-9 modified for teens in our EMR.

Objective: Assess our hospital's adherence with current recommendations for depression screening, determine the rate of positive screens and referrals for care in our Adolescent and Young Adult Primary Care Program.

Methods: Retrospective review of medical records between the ages of 12-18 seen between January 1 and June 30, 2019. All charts were reviewed to determine if screening for depression and suicidality through the PHQ-9 modified for teens occurred and appropriate care determined.

Results: 1,428 patients were seen. Of these, 928 (65%) were screened and 33 (3.6%) screened positive for depression. 5 patients (15%) who screened positive for MDD were also positive for suicidality. All (100%) patients who screened positive for depression or suicidality were appropriately referred. Patients with suicidality were evaluated and admitted for psychiatric care. The 28 patients screening positive for MDD were referred to outpatient Behavioral Health Services and all were given appointments for further assessment and care. Of the 28 patients scheduled with Behavioral Health, 14 (50%) failed to keep their appointment.

Conclusion: Our 3.6% rate of positive MDD screening was well below the national reported MDD prevalence in adolescents (13.3%). All patients who screened positive were appropriately referred. Those with suicidality all received appropriate care. 50% of the other patients with positive screens kept their Behavioral Health Services appointment. Changes must be implemented to the MDD screening process at CIH's Adolescent and Young Adult Primary Care Program to comply with national recommendations and improve the health and safety of this vulnerable population.

Institution: Good Samaritan Hospital Medical Center
Title: *Influence of Emergency Department Daily Volume on Utilization of Computed Tomography Scans*
Authors: Katherine Lang, D.O.; Victoria Levy; David Levy, D.O.

Context/Background: Emergency department (ED) volume varies day to day and it is unclear whether the way a provider practices is impacted by these daily changes.

Objective: In this study, we aim to evaluate the ordering patterns of providers in the emergency departments of multiple suburban, hospitals in Long Island, NY to evaluate whether the ordering of computed tomography (CT) of the abdomen and pelvis and CT of the brain are affected by daily changes in patient volume.

Methods: This study was IRB exempt. The population of interest included all patients evaluated in the EDs of 6 suburban hospitals in Long Island, NY, containing a combined annual census of approximately 247,000. Patients included are aged 21 years or older. This study evaluates a 3-year period from July 1, 2015 to June 30, 2018. A retrospective chart review was performed across the electronic medical record systems of each of six the six hospitals of interest and daily ED volume was calculated. Data were recorded into categories based on cut-off criterion of one standard deviation at or above the mean and one standard deviation at or below the mean. The percentage of total patients that received CT brain or CT of the abdomen and pelvis on each high and low volume day was calculated. Using IBM SPSS, these results were compared using the independent samples t-test.

Results: Overall, five of six hospitals had no difference in ordering patterns of CTs of the brain on high versus low volume days. Fifty percent of hospitals had no difference in ordering patterns of CTs of the abdomen and pelvis on high versus low volume days. Differences in ordering patterns were noted in multiple hospitals based on changes in ED volume.

Conclusion: Though findings were not the same across all hospitals included in this study, the results of this study suggest that ED volume may impact provider ordering patterns.

Institution: Good Samaritan Hospital Medical Center
Title: *The Incidence of Clinically Significant MRA Findings for TIA Patients in the ED Observation Unit*
Authors: Amanda Pacheco, D.O.; Victoria Levy; Robert Bramante, M.D.

Context/Background: A transient ischemic attack (TIA) is no longer considered to be a benign event, rather it is a serious warning for an impending stroke. Studies show that this "transient event" is associated with a 90-day risk of a stroke in approximately 10% of people, with half of these strokes occurring within 48 hours of the inciting event. This critical statistic favors the need for close monitoring and expeditious neurologic workup. With advancements in technology one of the major diagnostic studies for cerebrovascular accident (CVA) is magnetic resonance angiography (MRA). MRA is advantageous as it can detect hyperacute and minute ischemic lesions as well as lesions in the posterior fossa, in addition to aneurysms and arteriovenous malformations. This study serves to evaluate the incidence of clinically significant MRA findings following a TIA, in our clinical decision unit (CDU).

Objective: To determine if there is a significant amount of patient's with clinically relevant findings on MRA that may have otherwise gone undiagnosed. Clinical significance is defined as any finding that warrants further workup.

Methods: This descriptive study was a retrospective chart analysis of 684 asymptomatic TIA patients admitted to the CDU, over a 20-month period. Patients were divided by significant or no significant findings for either brain or neck MRA or both.

Results: There were no significant findings for either the brain or neck MRA in 70.8% (n=484) of patients. 9.8% (n=67) had significant findings for only the neck MRA. 12.0% (n=82) of patients had significant findings for only the brain MRA. 7.5% (n=51) had significant findings for both brain and neck MRA.

Conclusion: With the use of MRA of the brain and neck, we are discovering more clinically significant findings that may have gone years undiagnosed. Based on this data, it seems fitting that the use of MRI of the brain with MRA of the brain and neck should be utilized for evaluation of TIA patients when able, thus replacing prior workups such as, carotid ultrasound.

Institution: Good Samaritan Hospital Medical Center
Title: *Does A Physician Developed Airway Equipment Tray Improve Physician Satisfaction and Speed of Intubation Preparation?*
Authors: Brianna Thiessen, D.O.; Steven Sattler, D.O.; Jordan LaFave, D.O.

Context/Background: In the Emergency Department studied, physicians observed that the current airway equipment tray which was developed by non-physician personnel lacked organization and had excess materials that were rarely used, making it difficult to locate the items necessary for an uncomplicated endotracheal intubation.

Objective: The goal for this project was to develop an airway tray that included the minimal amount of equipment necessary for an uncomplicated endotracheal intubation. It was hypothesized that a physician-developed tray would decrease the time to intubation preparedness and increase physician satisfaction.

Methods: Each physician (PGY 1-4 or attending physician) was asked to prepare for an uncomplicated endotracheal intubation in a simulated setting using one of two trays: the current intubation tray that was developed by non-physician personnel, or the proposed intubation tray that was developed by resident physicians. Each physician prepared for intubation with each tray and time was measured from start time to the physician-determined end time. After each preparation, the physician completed a questionnaire about the tray used.

Results: The mean time for intubation preparation was 91.3 seconds for the current tray and 69.2 seconds for the proposed tray. Of the physicians who participated (n=20), 95% demonstrated a decreased time for intubation preparation for the proposed tray. Overall, there was a significant difference in the mean time reduction (22.1 seconds, $p<0.01$) for intubation preparation using the proposed tray. 98% of physicians agreed that the proposed tray had all of the components necessary for an uncomplicated intubation. Only 3% of physicians surveyed were satisfied with the organization of the current tray, compared to 95% of physicians who agreed that the proposed tray was organized well. The overall satisfaction of physicians surveyed also improved from 5% with the current tray to 100% with the proposed tray.

Conclusion: When physicians are directly involved in the development of procedural trays, there is both improved efficacy of the procedure and physician satisfaction of the equipment.

Institution: Nassau University Medical Center

Title: *Determinants of Psychiatric Inpatient Hospitalization Length of Stay at A Community Hospital Center*

Authors: Neha Ali, D.O.; Omar Shareef; Ijendu Korie; Constantine Ioannu; Arshpreet Gulati, Rizwana Sabeeh; Ahmed Khan; Mahathi Mudigonda; Ranjani Suthir; Megan Franzetti; Jessica Gregory; Monika Batra; Vishnu Adi

Background: A critical area of mental healthcare is access to inpatient psychiatric beds for severely mentally ill patients. A few factors have been linked to inpatient psychiatric bed availability, specifically length of stay (LOS), readmission rate, and inappropriate admissions.

Objective: Our study focuses on investigating variables that impact inpatient LOS at our safety net community hospital center, build a profile of patients admitted to the psychiatric ward, investigate the current status of bed usage, and explore the modifiable potential that clinical practice and service delivery have on LOS.

Methods: Utilizing a non-IRB retrospective cross-sectional clinical file audit of 739 inpatient psychiatric admission cases to Nassau University Medical Center over the past 12 months. Each case assessed for sociodemographic information, past psychiatric history, diagnosis, days of inpatient stay (further stratified into active and inactive treatment), disposition, and relevant legal, clinical, or environmental factors that contributed to increased LOS.

Results: 62.5% Male, 37.5% Female; Average age 36, 45.4% Caucasian, 30% African American, 18.5% Hispanic, 82.3% US Citizens, 13.5% Undocumented, 77.2% Single, 12.9% Married, 8.2% Divorced; 74.1% Unemployed, 43.9% completed High School, 15.8% with a criminal history, 64.8% domiciled, 12.7% homeless, 414 with multiple past psychiatric hospitalizations, 19.5% with Bipolar Disorder, 17.1% with Schizophrenia, 15.1% Schizoaffective, 31% with Marijuana Use Disorder. Average total inpatient LOS was 19 days, with an average of 14 active and 5 inactive treatment days. 65.9% discharged to private residences. 462 inpatients had no factors contributing to LOS, but 9.5% were held by post-inpatient treatment referral processing, 7.3% held by housing disposition referral processing, 6.9% requiring family meetings, and 6.6% lengthened due to AOT/ACT legal processing.

Conclusion: 37% of NUMC's psychiatric inpatients experienced increased LOS due to significant legal, clinical, and socio-environmental factors, the most significant of which were post-inpatient referral processes for housing and outpatient treatment programs, court proceedings for medicating over objection, family meetings, and psychopharmacological re-interventions.

Institution: Nassau University Medical Center
Title: *Factors Affecting Treatment Completion in Inpatient Detoxification- A Retrospective Study*
Authors: Megan Lin, D.O.; Ulziibat Person, M.D.; Ijendu Korie, M.D.; Romain Branch, M.D.;
Constantine Ioannou, M.D.; Allison Parrill; Daniel Bishev; Hesam Joshaghani; Manpreet Takhi

Background: The age-adjusted rate of drug overdose deaths tripled nationwide between 1999 and 2015 (1). In 2017, among 70,237 drug overdose deaths, 47,600 (67.8%) involved opioid (2). Heroine and synthetic opioid overdose deaths in New York were 1,307 in 2016 and increased to 1,356 in 2017 (2 & 3).

Objective: We retrospectively analyzed for the first time the characteristics, especially the reason for discharges against medical advice (DAMA) from inpatient detoxification unit for one year in our community-based hospital. Our hospital detoxifies patients from 3 substances: alcohol, opioid and benzodiazepines.

Methods: We studied patients DAMA aged ≥16 years (n =439 of 502) for the year 2017 (n=1351). We characterized demographics, substance use, treatment protocols and outcome of detoxification. Outcome measures included "completed treatment," "regular discharge," "DAMA," "disciplinary discharges," and "transfers to psychiatric or medical units."

Results: Among patients admitted for drug-detoxification, **62.9 %** completed treatment and **37.1%** did not. Of those patients who did not complete treatment **87.5%** were DAMA, 6.6% were disciplinary discharges, and 1.0% were discharges to the psychiatric unit, while 4.8% were transferred medicine floor.
Most of the patients were 26-35-years old (**49.4%**), Caucasian (**80.6%**), single (**71.1** %) males (**66.8%**), unemployed (**77.5%**), on Medicaid (**78.7**%). Diagnosis included opioid use disorder (**81.8%**), alcohol use disorder (**43.1%**), benzodiazepines use disorder (**46.2**%) and **62%** were using combination of substances cocaine and marijuana. Most DAMA happened between days 2-4 (**74**%), **>** 3 days (**28.5 %**) with **62.5%** staying less than 3 days. We classified the reasons for DAMA into: treatment refusal (**66.8**%), life engagement and family-related reasons (**16.2**%), "medication is not enough" (**4.3**%) and others (**8.3**%) including "unable to smoke." About 93% smoked cigarettes and 59% more than 1 PPD.

Conclusion: We identified significant psychosocial factors that could be used to predict DAMA.
We plan to develop strategies targeting these psychosocial factors to prevent DAMA and improve clinical outcome for our patient population. This may help prevent relapses, overdose complications and deaths.

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Institution: Nassau University Medical Center

Title: *Are the Residents Well? Assessing Resident Wellness in a Public Teaching Hospital*

Authors: Sabreen Rahman, D.O.; Hasnain Afzal; Ulziibat Person, M.D.; Daniel Bishev; Vikas Nookala; Ijendu Korie, M.D.; Andrew Yang; Asif Rahman; Sara Afzal; Tazeen Azfar; Romain Branch, M.D.; Constantine Ioannou, M.D.

Background/Objective: Physicians-in-training are exposed to long hours and stress. Studies show that resident well-being affects training and patient care (1). Demands on residents increase emotional exhaustion, career regret, inefficiency, depression, and burnout. We assessed resident wellness using Resident Well-Being (RWB) scale (2). We employed a survey to identify wellness improvement strategies. Confidentiality of response was maintained. We measured wellness and boosters of wellness within our institution.

Methods: Surveys were collected from Medicine (N=42), Psychiatry (N=25), Pediatrics (N=12), Surgery (N=9), PM&R (N=11), and Ophthalmology (N=10) residents at NUMC, a public teaching hospital in NY, in September 2019. Residents (N=118) were handed paper questionnaires with the RWB scale, measuring 6 categories of well-being. Residents were anonymously asked to rank 6 suggestions to improve wellness in order of priority. Free-text area was included to elicit other suggestions. Residents received no compensation. Responses were analyzed using weighted average scale for the six categories and composite total ranking for each area of desired improvement.

Results: Average raw scores were calculated for each specialty per category: Temper, Anxiety, Attitude, Mood, Burnout, and Work and Learning Productivity (W&L). Category scores range from 1–6, with 6 being the most positive. Overall score for all departments combined was calculated. A total score for every specialty was calculated by taking the sum for each category. There are 6 categories with a maximum score of 6 per category, making the maximum total raw score 36. Hospital-wide total raw score was 24.25, as follows: Temper=4.22 (somewhat calm, relaxed), Anxiety=3.49 (between somewhat anxious and somewhat at ease), Attitude=4.21 (somewhat enthusiastic), Mood=4.48 (better than somewhat happy), Burnout=3.56 (between somewhat exhausted and somewhat energized), W&L=4.29 (more than fairly effective). The hospital ranks 24.25/36 on the RWB scale, indicating a 'somewhat well' overall state.

Conclusion: Results suggest less-than-ideal overall well-being, opening improvement opportunities. Top suggestions involved physical health support options provided by the intuition.

Institution: Orange Regional Medical Center

Title: *Turning Patient Interest in Pre-Exposure Prophylaxis (PrEP) Into Actual Prescriptions: A Quantitative Analysis of Gay/Bisexual Men Who Discuss and Fail to Discuss PrEP with Providers*

Authors: Amanda Moukdad, D.O., MPH, MBA; David Moskowitz, Ph.D.

Background: Gay and bisexual men continue to be the risk group most severely affected by HIV in the United States. Pre-exposure prophylaxis (PrEP) is an HIV prevention strategy that uses a combination of antiretroviral medications to protect HIV-negative people from infection. Despite existing research that proves its efficacy, PrEP continues to be under prescribed by clinicians.

Objective: The objective of the study is to understand the association of patient-provider communication on facilitating PrEP prescriptions and to identify reasons for interest in PrEP and how it may be influenced by gay and bisexual men's relationship status, relationship agreements, HIV-status and other key variables.

Methods: We implemented a survey of 281 men that measured HIV status, provider access, general interest in PrEP, and discussion of PrEP with providers. Targeted advertisements and emails asked men to take a 20-minute online survey. Exclusion criteria were established to secure a gay and bisexual male sample over the age of 18. The analyses were done with SPSS version 22.0. Cross tabulation with Chi-square statistics, exploratory factor analysis with Varimax rotation and multiple regression were used to test for differences between groups and the various factors.

Results: Results suggested a majority of HIV-negative men *were not* on PrEP. Although most men reported seeing a provider since the release of PrEP, few reported any discussion of PrEP with their provider. Of the men who discussed PrEP with their providers, monogamous men were more likely to be approached by their providers relative to non-monogamous men. Three reasons emerged why men were interested in PrEP; it allowed for low accountability sex; it represented community care; or because of their partners. Demographic and relationship factors impacted the adoption of interest.

Conclusion: While a majority of men know what PrEP is, there are diverse barriers that prevent its acceptance. Providers need to recognize these health disparities to better understand the health needs of their sexual minority patients.

Institution: Peconic Bay Medical Center
Title: *Advanced Care Planning in the Outpatient Office*
Authors: Josephine Champlin, D.O.; Maria Becker, D.O.; Tahir Ansari, D.O.; Evan Nadal, D.O.;
Danielle Jakubowski, CMA

Introduction: Advance care planning is as much about life as it is about death. Too often, people don't have these discussions with family or health care professionals before they no longer have the capacity to express their wishes. Studies have shown various barriers to including ACP discussion in routine health care visits, including time restraints, the sensitivity of the subject matter, and lack of resident training in approaching the topic.

Objective: To determine if having ancillary staff offer patients a form to delegate a Healthcare Proxy will increase the number of patients with a documented HCP.

Methods: MAs at the family medicine resident clinic gave patients a HCP form during the initial intake. Once the form was completed, it was scanned into the EMR. Data was collected over 2 separate, 2-month periods (pre-intervention: 01/01/19 - 02/28/19, post-intervention: 09/23/19 - 11/23/19). Charts for all patients over the age of 65 seen during those time periods were reviewed for presence of a scanned HCP form (n=584 pre-intervention, n=631 post-intervention). Number of patients with documented HCPs before intervention were compared with the number after.

Results: This study showed a significant increase in the number of patients with documented HCPs. Prior to intervention, only 0.34% of patients seen had HCP form on file, while post-intervention a significant increase to 16.32% was seen with a p-value of <0.0001.

Conclusion: Addressing the topic with patients opened the door for conversations which will improve patient and family satisfaction in the future. It is simple and easy to incorporate into a busy practice workflow and helps facilitate a conversation about end of life care, and completing the appropriate form to be stored into the EMR. In the future, we hope to implement protocol for further end of life care discussions, including DNR/DNI status and MOLST forms. Additionally, we plan to introduce training for residents in discussing end of life care.

Institution: Peconic Bay Medical Center

Title: *Preventing Hospital Acquired Clostridium Difficile Infection in ICU Patients: The Efficacy of Theraworx, a Novel Silver-Based Cleanser*

Authors: Tarayn Dhansew, D.O.; Maria Masih, M.D.; Patty Mupo, RN, BSN; Holly Fischer, RN, BSN; Ashley Collins, D.O.; Vladimir Orlov, D.O.; Pooja Paunikar M.D., MPH

Context/Background: Prevention of hospital-acquired clostridium difficile infection (CDI) remains a concern due to the prevalence, increased patient morbidity and mortality, and impact on health care costs. Literature review shows Chlorhexidine gluconate (CHG), a commonly used patient bathing product, has limited evidence on the efficacy against CDI prevention. CHG also has limitations including ineffective spore eradication and inability to be used on the face, mucosa, and perineum. A global review of patient bathing protocols has shown significant gaps in standardization calling for additional studies to address the need for an effective bathing product that demonstrates decreased transmissibility of CDI.

Objective: Theraworx is a silver-based skin cleanser that can be used on the perineum, mucosa and face, eliminates spores, and supports the skin's innate protective barrier system. We aimed to determine if the use of Theraworx would reduce the incidence of CDI in ICU patients.

Methods: IRB approval was obtained for this prospective cohort study. Theraworx bathing was implemented in June 2017 for daily bathing of all patients in our 10-bed ICU unit. A standard daily bathing protocol was implemented using Theraworx cleansing wipes on each patient from hairline to feet. As a no-rinse formulation, skin was allowed to dry without further cleansing. Data was reviewed quarterly to evaluate the incidence of hospital-acquired CDI in the ICU by the Department of Infection Prevention.

Results: Daily Theraworx bathing has led to a 60% reduction in hospital-acquired CDI in our ICU patients. There has also been a reduction in overall cost of C. difficile testing since implementation.

Conclusion: Daily Theraworx bathing has led to a reduction of hospital-acquired CDI in ICU patients. Our findings may be helpful in the development of a hospital-wide- and perhaps a system-wide- standard patient bathing protocol. Our next steps include implementing Theraworx on other inpatient units and for pre-operative skin prep. Standardization of patient bathing protocols may lead to increased compliance, improved patient outcomes, and decreased healthcare costs.

Institution: Peconic Bay Medical Center

Title: *Improving Compliance with the Severe Sepsis and Septic Shock Management Bundle*

Authors: Guang Yu Lee, D.O.; Arfa Mirza D.O.; Anish J. Soni D.O.; Haowei Han D.O.; Jason Wentzek D.O.; Kaushik Manthani D.O.

Context/Background: Sepsis is a common and treatable entity that identified early can decrease morbidity and mortality in critically ill patients. Compliance with 1, 3, 6-hour bundle is essential to the management of early stages of sepsis.

Objective: Our project focus on improving compliance with tissue perfusion criteria after adequate resuscitation through group and individual education.

Methods: Data was collected starting from the Peconic Bay Medical Center emergency room charts and crossed with subsequent History and Physicals on admission. H&P time was noted to be created within the 6-hour cut out for volume status and tissue perfusion assessment. Interventions include monthly review with providers that failed to complete all the requirements for the tissue perfusion criteria in their H&P and group education in the form of lectures to educate providers on what/where the perfusion criteria were in the EMR. Main outcome was measured through the number of "fallouts" (H&P that didn't have all tissue perfusion criteria documented) each month. Through persistent education we hope to decrease the number of fallouts each month.

Results: Prior to this study fallouts in our hospital in June/July 2019 9 out 9 sepsis cases were considered fallouts because 1 or 2 components of criteria were not completed. Gradually over the course of 3 months with our education interventions the fallout percentage decreased. From 100% fallout in the first two month (N=9) to 50% in the next 3 months (N=24)

Conclusion: The results of this study suggest that with a combination of general education and targeted chart reviews with individual substantial gains can be seen on our evaluation of septic patients. This is particularly important since as of October 2015, documentation of volume status and tissue perfusion in severe sepsis and septic shock was made a Centers for Medicare & Medicaid Services (CMS) core measure. Institutions are monitored on this measure and poor compliance can adversely affect CMS reimbursement.

Institution: Peconic Bay Medical Center

Title: *Improving Transition of Care: The Effect of Telephone Communication on Post-Hospitalization Primary Care Follow-up*

Authors: Amar Vyas, D.O.; Danielle Jakubowski, CMA; Samantha Fricke, MHA; Tarayn Dhansew, D.O.; Josephine Champlin, D.O.; Pooja Paunikar, M.D., MPH; Alexandre Andrianov, M.D.; Kenneth Mayer, M.D.

Introduction: Transition of care remains an area that requires continued attention as small improvements can have significant impacts on patient outcomes, hospital re-admission rates, and health-care costs. Literature demonstrates timely outpatient primary care provider (PCP) follow-up ultimately reduces avoidable adverse events and rehospitalizations. Despite the numerous benefits of timely follow-up, there are several gaps in the research that identify interprofessional strategies for optimizing this transition and ensuring timely PCP follow-up.

Purpose: To determine the effect of telephone communication on the rate of post-hospitalization PCP follow-up.

Methods: This research study was designed as a prospective cohort study. Over a four-month period, we looked at patients discharged from our community hospital that were established or newly referred to our outpatient family medicine practice. A total of 179 patients met this inclusion criteria. We initiated telephone communication in which a phone call was placed to patients within 48-72 hours of hospital discharge to facilitate scheduling a post-hospitalization PCP follow-up appointment. We compared the number of patients who attended their post-hospital PCP follow-up appointment - prior to and after - our telephone intervention.

Results: The percentage of patients seen post-hospitalization increased from 24% to 38% after telephone communication was initiated. The largest improvement occurred in established patients with a 52.3% rate of increase in patients seen post intervention over the course of two months. The number one reason for lack of PCP post-discharge follow-up was inability to contact the patient via telephone.

Conclusion: The rate of post-hospitalization PCP follow-up improved with the use of telephone calls to facilitate scheduling appointments. Next steps include implementing a letter communication for those unsuccessfully reached via telephone, and to explore the effect of this intervention on 30-day re-hospitalization rates for these patients.

A Special Thank You to Our Judges

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Thank you!