

#	Last Name	Poster Title
1	Acosta	Contraceptive Implant Training and Practices: A Multisite Survey of Family Medicine Residents in New Jersey
2	Amarini	Deprescribing Proton Pump Inhibitors in the Elderly
3	Arias-Azalte	Community Partnerships to Address Barriers to Covid-19 Vaccine Access Among Vulnerable Adults
4	Asselstine	Mystery Solved! A case of Acute Renal Failure from Xanthogranulomatous Pyelonephritis
5	Asselstine	Group Visits for Weight Management in Primary Care: An Overview of Patient Preferences and Barriers
6	Chung	A case of myositis in a patient with sickle cell anemia
7	Ciricillo	A Curious Case of Tickborne Co-infection from Three Pathogens
8	Ciricillo	Are family physicians providing adequate preconception care to females of reproductive age during routine health visits?
9	Ciricillo	Health Disparities with COVID-19: Is there an association between demographics, comorbidities, and clinical outcomes in hospitalized patients with COVID-19 on the FM service?
10	Delgado-Rosado	Resident Led Curriculum on Non Violent Communication and its Influence on Interpersonal Communication amongst Family Medicine Residents
11	Eapen	Analysis of Hospitalized COVID Patients' Medical Histories' Effect on Length of Hospital Admission
12	Farooqui	The Use of Physician Outreach to Increase Follow Up Care of Type 2 Diabetes Mellitus During the Covid-19 Pandemic
13	Farooqui	An Unusual Case of Vaginal Bleeding in a Patient with an Indwelling Foley Catheter
14	Fear	A Complicated Case of Contagious Cough: A Case Report
15	Fru	The effect of the Covid-19 lockdown period on diabetes
16	Haddad	Bilateral Adrenal Hemorrhage Following Thrombolysis
17	Khan	HELLP Syndrome
18	Kuhar	Differences in COPD Exacerbations and Admissions Before and During the COVID-19 Pandemic
19	Lauro	Hypercalcemia-induced Pancreatitis in a Patient With Sarcoidosis: A Case Report
20	Lee	One Last Cigarette: Seeking to Improve Tobacco Cessation Counselling
21	Ly	Deprescribing Depression in the Elderly
22	Ly	Improving access to postpartum contraception
23	Malhi	Euglycemic Ketoacidosis
24	Mathews	Evaluation of Food Spending in Association with Chronic Disease Control
25	Matza	Implementation of an e-Learning Platform to Supplement Family Medicine Residency Didactics for Board Exam Preparation
26	McKitish	Decreasing The Use of Opioids in Post-Operative Cesarean Pain Management
27	Mendelsohn	Weighing the Outcomes: Does Routine Primary Care Reduce BMI in the Obese Population?
28	Mischell	Contraceptive implant training: perspectives from family medicine residencies in New Jersey
30	Noriega	A Rare Case of Diabetes Insipidus Following Outpatient Constipation Treatment
31	Olaniyan	Recurrent Pericardial Tamponade With Pericardial Effusion in a 30 year old with Stage IV Non-Small Cell Lung Cancer (NSCLC)
32	Palanker	A Rare case of Rhabdomyolysis associated with Novel Coronavirus Infection
33	Pandya	BAM! COVID-OUT: Help is on the Way
34	Pandya	To help or to harm? Isolating our Elderly during COVID-19 Pandemic
35	Parikh	Horticulture Therapy: Practice of Healing for the Elderly Population in Long Term Care Facilities
36	Patel	The effects of patient portal use on diabetes health metrics during the Covid-19 pandemic
37	Pillai	COVID-19 and Resident Wellness: The added stressors on top of an already extreme lifestyle
38	Rashidbaigi	Utility of early depression screening in patients with concussion
39	Robinson	The Final Hit, Fibrillary Glomerulonephritis and End Stage Renal Disease

40	Sharma	Obesogenic Food Environments in New Jersey
41	Sheth	Correlation of Patient Blood Type with Patient Related Outcomes, Length of Stay, Severity of COVID-19 Disease, and D-Dimer elevation. A useful prognostic indicator?
42	Shillingford	Comparing Utilization of Family Physicians to OBGYN in providing Women's Health Care
43	Sugarbaker	Improving timeliness and quality of discharge summaries in a family medicine residency
44	Sugarbaker	A High Pressure Situation: A Case Report
45	Tang	Utilizing Inter-Professional Teaming To Reduce Inpatient Length of Stay
46	Tang	The Winding Road to Aplastic Anemia
47	Tran	Adequacy of Screening for Substance Use Disorder in the Primary Care Setting
48	Tran	Barriers Towards Low Dose Computed Tomography for Cancer Screening among Primary Care Providers in New Jersey
49	Truss	Cutaneous Reactions Following COVID-19 Vaccination: A Case of Lichen Planus and Review of the Literature
50	Turakhia	Association of cancer screening and acculturation in Hispanic patients in the United States
51	Upadhyay	Performing Facility-Wide Testing and Reducing Spread of SARS-CoV-2 in Nursing Homes/LTC Facilities
52	Upadhyay	Increasing Cervical Cancer Screening Rates
53	Wong Urena	Incidence of Gastrointestinal Bleed (GIB) in COVID-19 Patients Treated with Anticoagulation Based on D-dimer Levels

2021 NJAFP Poster Contest Directory

1. “Contraceptive Implant Training and Practices: A Multisite Survey of Family Medicine Residents in New Jersey”	3
2. “Deprescribing Proton Pump Inhibitors in the Elderly”	3
3. “Community Partnerships to Address Barriers to Covid-19 Vaccine Access Among Vulnerable Adults”	4
4. “Mystery Solved! A case of Acute Renal Failure from Xanthogranulomatous Pyelonephritis”	5
5. “Group Visits for Weight Management in Primary Care: An Overview of Patient Preferences and Barriers”	5
6. “A case of myositis in a patient with sickle cell anemia”	5
7. “A Curious Case of Tickborne Co-infection from Three Pathogens”	6
8. “Are family physicians providing adequate preconception care to females of reproductive age during routine health visits?”	7
9. “Health Disparities with COVID-19: Is there an association between demographics, comorbidities, and clinical outcomes in hospitalized patients with COVID-19 on the FM service?”	7
10. “Resident Led Curriculum on Non Violent Communication and its Influence on Interpersonal Communication amongst Family Medicine Residents”	8
11. “Analysis of Hospitalized COVID Patients' Medical Histories' Effect on Length of Hospital Admission”	9
12. “The Use of Physician Outreach to Increase Follow Up Care of Type 2 Diabetes Mellitus During the Covid-19 Pandemic” ..	9
13. “An Unusual Case of Vaginal Bleeding in a Patient with an Indwelling Foley Catheter”	10
14. “A Complicated Case of Contagious Cough: A Case Report”	11
15. “The effect of the Covid-19 lockdown period on diabetes”	11
16. “Bilateral Adrenal Hemorrhage Following Thrombolysis”	12
17. “HELLP Syndrome”	12
18. “Differences in COPD Exacerbations and Admissions Before and During the COVID-19 Pandemic”	13
19. “Hypercalcemia-induced Pancreatitis in a Patient With Sarcoidosis: A Case Report”	13
20. “One Last Cigarette: Seeking to Improve Tobacco Cessation Counselling”	14
21. “Deprescribing Depression in the Elderly”	14
22. “Improving access to postpartum contraception”	15
23. “Euglycemic Ketoacidosis”	16
24. “Evaluation of Food Spending in Association with Chronic Disease Control”	16
25. “Implementation of an e-Learning Platform to Supplement Family Medicine Residency Didactics for Board Exam Prep” ..	17
26. “Decreasing The Use Of Opioids In Post-Operative Cesarean Pain Management”	17
27. “Weighing the Outcomes: Does Routine Primary Care Reduce BMI in the Obese Population?”	18
28. “Contraceptive implant training: perspectives from family medicine residencies in New Jersey”	19
30. “A Rare Case of Diabetes Insipidus Following Outpatient Constipation Treatment”	19
31. “Recurrent Pericardial Tamponade With Pericardial Effusion in a 30 year old with Stage IV Non-Small Cell Lung Cancer” ..	20
32. “A Rare case of Rhabdomyolysis associated with Novel Coronavirus Infection”	20
33. “BAM! COVID-OUT: Help is on the Way”	21
34. “To help or to harm? Isolating our Elderly during COVID-19 Pandemic”	21
35. “Horticulture Therapy: Practice of Healing for the Elderly Population in Long Term Care Facilities”	22

36. “The effects of patient portal use on diabetes health metrics during the Covid-19 pandemic”	23
37. “COVID-19 and Resident Wellness: The added stressors on top of an already extreme lifestyle”	23
38. “Utility of early depression screening in patients with concussion”	23
39. “The Final Hit, Fibrillary Glomerulonephritis and End Stage Renal Disease”	24
40. “Obesogenic Food Environments in New Jersey”	25
41. “Correlation of Patient Blood Type with Patient Related Outcomes, Length of Stay, Severity of COVID-19 Disease, and D-Dimer elevation. A useful prognostic indicator?”	25
42. “Comparing Utilization of Family Physicians to OBGYN in providing Women’s Health Care”	26
43. “Improving timeliness and quality of discharge summaries in a family medicine residency”	26
44. “A High Pressure Situation: A Case Report”	27
45. “Utilizing Inter-Professional Teaming To Reduce Inpatient Length of Stay”	28
46. “The Winding Road to Aplastic Anemia”	28
47. “Adequacy of Screening for Substance Use Disorder in the Primary Care Setting”	29
48. “Barriers Towards Low Dose Computed Tomography for Cancer Screening among Primary Care Providers in New Jersey”	30
49. “Cutaneous Reactions Following COVID-19 Vaccination: A Case of Lichen Planus and Review of the Literature”	30
50. “Association of cancer screening and acculturation in Hispanic patients in the United States”	31
51. “Performing Facility-Wide Testing and Reducing Spread of SARS-CoV-2 in Nursing Homes/LTC Facilities”	31
52. “Increasing Cervical Cancer Screening Rates”	32
53. “Incidence of Gastrointestinal Bleed (GIB) in COVID-19 Patients Treated with Anticoagulation Based on D-dimer Levels”	32

POSTER: 1**“Contraceptive Implant Training and Practices: A Multisite Survey of Family Medicine Residents in New Jersey”****CATEGORY:** Research**AUTHOR(S):**

Tiana Acosta

Jennifer Amico, MD, MPH; Stephanie Mischell, MD; Anna Silowaska, MD; Jeffrey Levine, MD MPH

INSTITUTION: Rutgers Robert Wood Johnson

Purpose: The primary purpose of this study is to understand knowledge and attitudes towards the etonogestrel implant (Nexplanon) insertion, the scope and barriers to resident training with implants, and its impact on implant provision within Family Medicine training programs.

Methods: This is a mixed-method observational study which will employ an online, self-administered survey of 65 questions through REDCap. Surveys will be electronically distributed to residents and preceptors within 19 Family Medicine programs across New Jersey. Participants will be surveyed on both practice and individual demographics, knowledge and attitudes about long-acting reversible contraception (LARC), receipt of any LARC training(s), as well as experiences and comfort with a range of office procedures including implant insertion and removal, incision and drainages, and endometrial biopsies. Knowledge of LARC will be assessed through direct and case-based questions. Data will be analyzed using Chi-square or Fischer tests and results of this survey will be used to rank programs based on the top and bottom 10% of programs performing implant insertions for further interviewing to continue to evaluate attitudes and practices towards implant utilization.

Results (anticipated): We anticipate that contraceptive implant knowledge, attitudes and training will vary between programs, as well as between residents at the same program. We expect to identify predictors of increased knowledge and provision and that receipt of contraceptive implant training during residency will have a positive impact on knowledge and comfort prescribing and providing LARC. Additionally, we expect that comfort with other family planning procedures and comfort with other skin procedures will correlate with comfort in implant provision.

Conclusions (anticipated): Family Medicine residency training provides a unique opportunity for impacting training of contraceptive implant insertion, and ultimately improving access to LARC within communities. Increased access to contraceptive implant training can positively influence comfort and prescribing practices.

POSTER: 2**“Deprescribing Proton Pump Inhibitors in the Elderly”****CATEGORY:** Quality Improvement**AUTHOR(S):**

Rebekah Amarini, MD

Valerie Buisson, MD; Abbie Jacobs, MD; Harini Kumar, MD

INSTITUTION: Hoboken University Medical Center

Background: Proton Pump Inhibitors (PPI) treat symptoms of GERD and Peptic ulcer disease and are widely prescribed today. Long term PPI use in the elderly has been associated with bone loss and osteoporotic fractures and increased risk for pneumonia, C difficile, vitamin and mineral deficiencies and other adverse events 4, 5. Using PPIs in patients continuously without trials of deprescribing and periodic reevaluation to determine necessity can lead to adverse effects with long term complications^{4,5}.

Objective: To improve appropriate PPI medication use in the elderly at the NHC by determining if attempts were made to prescribe the lowest effective dose for the shortest period of time, stepped down or completely stopping PPI use if unnecessary.

Methods: Retrospective chart review, convenience sampling. Inclusion criteria: Age >65, have been on a PPI for ≥ 8wks with controlled symptoms. Exclusion criteria: Patient on long- term PPI with a hx of chronic NSAID use with bleeding risk, oral steroids, hx of bleeding GI ulcer, or Barret’s esophagus. Question: Was there a deprescribing trial done? Monitor: Check at 4 and 12 weeks if symptoms recur, was dietary and lifestyle modifications enough or an H2 blocker attempted first before restarting, rechecking for H pylori, only restarting if severe GERD, stricture requiring dilation, or lifestyle modifications have failed².

Results: Initial chart review done on 20 charts including patients >65 on a PPI seen in 8/2020. 50% of pts were on a PPI >8 weeks without attempts at reassessing symptoms or deprescribing, 25% of patients there was an attempt to lower the dose, switch to an H2 blocker or stop completely. 25% met the exclusion criteria.

Intervention: Designed a form to assess the patient's symptoms if they know the side effects of long-term PPI use and determine if they were open to deprescribing.

Final chart review: 40 charts included patients >65 on a PPI >8weeks seen for a period of 6 months from 8/2020-2/2021. At the patients visit, 56% of the time there was a reassessment of symptoms by the provider and an attempt to deprescribe, no patients answered yes on the form to the question if they knew of any side effects from taking PPIs. 36.6% had no reassessments of symptoms with no attempts made to deprescribe. 70.6% of the time lifestyle modifications were documented as being discussed with patients. Preferred method of deprescribing among providers was to stop the PPI and start an H2 blocker. There was a 31% increase in attempts by the provider to deprescribe PPI's after interventions were in place, and 52.9% (n=9) of deprescribing attempts were successful, 11.8% (n=2) of attempts were unsuccessful, with the main reason being that GERD symptoms worsened and 35.3% (n=7) are pending reevaluation of symptoms. Limitations: larger sample size to increase generalizability to multiple ethnic backgrounds other than Hispanic

Conclusions: There was an increase in the attempts to deprescribe PPI's in this patient population and over half of attempts at deprescribing were successful. This highlights the importance of educating patients about the side effects of long-term PPI use and having methods in place for deprescribing to decrease adverse drug events and lower costs for the patients and the healthcare system as whole.

POSTER: 3

“Community Partnerships to Address Barriers to Covid-19 Vaccine Access Among Vulnerable Adults”

CATEGORY: Community Project

AUTHOR(S):

Nathalia Arias-Azalte, MS4

Karen WeiRu Lin, MD, MS, FAAFP; Danielle Flood, Meagan Hawes, Catherine Morris, Cameron Schmidt, David Wu, Julia Zheng

INSTITUTION: Rutgers RWJ Medical School

Background: The COVID-19 pandemic has exacerbated health disparities that are prevalent in New Brunswick, NJ, especially for underserved populations who have the poorest outcomes from COVID infection. Vaccination has both an individual benefit by providing protection from infectious disease, and a social benefit by reducing the transmission rates in populations through herd immunity. This initiative emphasizes the promotion of primary prevention in an urban area by collaborating with community partners to facilitate registration for the COVID-19 vaccine through the NJ Vaccine Scheduling System (NJVSS); coordinate vaccine appointments through our local FQHC, Eric B Chandler Health Center (EBCHC), and the Student-Run Vaccine Clinic (SRVC); and provide interpreter services. We aim to lower barriers to vaccination and improve long term health outcomes in New Brunswick populations in context of the COVID-19 pandemic.

Design, Subjects, Settings: Our project was conducted in New Brunswick, NJ, focusing on clients of Rutgers Robert Wood Johnson Medical School HIPHOP Promise Clinic (PC) and Elijah's Promise Community Kitchen (EP). It was designed to improve vaccine access for vulnerable adults who were eligible but had been unable to receive the vaccine due to structural barriers such as lack of technology, transportation or language barriers. The project anchored on direct outreach to underserved patrons of New Brunswick community partners by medical and social work students. Students created an immediate scheduling workflow based upon the NJVSS website. To provide sustainably improved access, they also provided training to community partner staff on how to screen and register their patrons. Individuals were able to receive vaccines at EBCHC with the help of the SRVC.

Methods: Students set-up a weekly registration table to register eligible patrons of EP for vaccine appointments when the patrons came to pick up meals. In addition, students with established relationships with vulnerable adults through PC reached out to register their patients. Once registered, vaccine appointments were made possible via protected times set aside for underserved vulnerable adults by EBCHC. Vaccine administration was coordinated through the SRVC.

Results: As of March 23, 2021, 40 clients from EP and 16 patients from the PC have been registered for the first dose of the Moderna Vaccine. Of those registered, 39 clients (98%) from EP and 13 (81%) patients from PC attended their appointment for the first dose. All 34 active patients from the PC have been offered assistance in registration through NJVSS. The refusal rate for the vaccine is approximately 50% among PC patients. Vaccine registration and administration remains ongoing.

Discussion: The cornerstone of this community project was existing trusting relationships with community partners and individual vulnerable adults that were able to be leveraged to increase access to vaccines. As family medicine providers, we know that building relationships and being present in our communities is paramount. Although limited by a small sample population, the success of this work demonstrates the impact those relationships can have in improving individual and community health in times of crisis and underlines the importance of investing in our communities as a routine part of our work.

POSTER: 4**“Mystery Solved! A case of Acute Renal Failure from Xanthogranulomatous Pyelonephritis”****CATEGORY:** Clinical Inquiry**AUTHOR(S):**

Sydney Asselstine, MD

Kevin Ly, MD; Nicole Castro, MD; Anand Shah, MD; Robert Kim, MD; Jacey Pudney, MD; Sairah Johnson, MD; Deshanki Pandya, MD; Krishna Parikh, MD; Zeeshan Khan, MD; and Maria Ciminelli, MD

INSTITUTION: Rutgers RWJMS at CentraState

Introduction: Renal dysfunction is a common laboratory finding in the emergency department and carries a broad differential diagnosis. When coupled with associated symptoms of unintentional weight loss, edema, and flank pain, red flags are often elicited. With the complexity of the kidney, the culprit is not always so apparent and fortunately not always so malignant.

Case Presentation: A 47 year old female with brittle type II diabetes initially presented unresponsive due to hyperglycemia. After improvement in mental status it was found that she had a progressive history of unintentional weight loss, flank pain, edema, and dyspnea on exertion. She had significant right sided crackles on her lung exam and 1+ pitting edema to her shins bilaterally. Renal function was impaired on initial labs with a GFR of 53mL/min and she had associated normocytic anemia. Her urine yielded over 7g of protein in 24 hours. A CT of the abdomen and pelvis was significant for severe end-stage hydronephrosis of the right kidney and parenchymal thinning. A CXR also found a significant pleural effusion requiring multiple thoracentesis over her hospitalization due to recurrence. She was diuresed with furosemide and given IV albumin but overall her renal function and fluid imbalance continued to worsen significantly, eventually requiring dialysis. A biopsy of her left kidney was performed which showed diabetic nephropathy. She later underwent nephrectomy of the dysfunctional right kidney and histopathology revealed xanthogranulomatous pyelonephritis associated with Klebsiella. Patient symptomatically improved postoperatively and has remained on dialysis with stable renal function since.

Discussion: Xanthogranulomatous pyelonephritis is a rare form of chronic pyelonephritis more often seen in women. Typically presenting with weight loss, edema, urinary symptoms, and a palpable flank mass, it ultimately leads to destruction of renal parenchyma. CT scans can present an alarming picture of a grossly enlarged kidney with hydronephrosis and cortical destruction, requiring a broad differential until a histopathological diagnosis can be made. Complications include chronic bacteremia, fistula formation, RCC and emphysematous pyelonephritis. Nephrectomy is often required as the definitive treatment and renal function can return to normal afterwards in many cases.

POSTER: 5**“Group Visits for Weight Management in Primary Care: An Overview of Patient Preferences and Barriers”****CATEGORY:** Quality Improvement**AUTHOR(S):**

Sydney Asselstine, MD

Nicole Castro, MD; Kevin Ly, MD; Mahvish Qazi, MD; Robert Kim, MD; Anand Shah, MD; Krishna Parikh, MD; Deshanki Pandya, MD; Kirk McCalmon, MD; Maria Ciminelli, MD; Joshua Raymond, MD; and Zeeshan Khan, MD

INSTITUTION: Rutgers RWJMS at CentraState

Obesity is an expanding epidemic within the United States; according to the Centers for Disease Control, in 2018 the prevalence of adult obesity was 42.4%. Increased adiposity is associated with greater rates of type II diabetes, cardiovascular disease, certain cancers, osteoarthritis, among other conditions. It correlates with reduced quality of life, self-image, and sexual dysfunction, and also has a significant impact on the cost of healthcare. In 2014, the annual medical spending for the obese population was nearly \$150 billion across the nation. Primary care weight management interventions have been suggested as cost-effective options for obesity. Effective lifestyle interventions involving modifications to exercise and dietary regimens are able to invoke weight loss while reducing the burden of chronic conditions. Group medical visits can have a positive impact on weight-loss interventions compared to traditional office visits, improved cost-effectiveness, and increased patient satisfaction. Clinicians can experience difficulty with recruitment for these visits, and so this Quality Improvement

POSTER: 6**“A case of myositis in a patient with sickle cell anemia”****CATEGORY:** Clinical Inquiry**AUTHOR(S):**

Michael Chung, MD

Jason Womack, MD

INSTITUTION: Rutgers RWJ Medical School

Case History: The patient is 39-year-old male with sickle cell anemia requiring monthly hospital admission for pain crises, hypertension secondary to ESRD requiring dialysis s/p failed renal transplant. He presented with atraumatic swelling and pain out of proportion to exam over the inner right thigh. He could not bear weight. This focal pain contrasted with the generalized, bilateral arm and leg pain typical of his vaso-occlusive crises. He denied fever, loss of sensation, motor weakness, paresthesias, recent viral illness, rash. **Physical Examination General:** in acute painful distress, wincing and writhing attempting to cooperate with exam. **Extremities:** asymmetrical, homogenous 1+ non-pitting edema over the anteromedial aspect of the right thigh. Exquisite, diffuse tenderness to palpation. No surface erythema. No exacerbation of pain with resisted hip adduction with knees in flexion or extension. **Neurologic:** CN II-XII intact. 5/5 strength at flexion and extension of hip, knee, ankles. 5/5 strength of hip abduction and adduction. Sensation to light touch intact. **Skin:** no malar, discoid, V-neck, Shawl, heliotrope rash. No Gottron papules. **Differential diagnosis** Polymyositis, dermatomyositis, connective tissue disorder i.e. idiopathic inflammatory myopathy, focal myositis, myonecrosis, necrotizing fasciitis, avascular necrosis, osteomyelitis, cellulitis, compartment syndrome

Tests/Results: WBC 13 ESR 114 CRP 2.4 CPK 49 MRI: patchy intramuscular edema scattered throughout deep posterior compartments of the leg. There is no intramuscular fluid collection identified. The visualized tendon attachments are intact. There is patchy intramuscular edema scattered throughout the anterior, posterior, and medial compartments of the thigh. A small amount of fluid is noted about the sartorius and gracilis muscles. **Soft tissue US:** diffuse subcutaneous edema with no evidence of drainable collection at the palpable area of concern [right anteromedial thigh]. **Doppler:** no SVT or DVT. **Final diagnosis** Myositis **Discussion** One year ago, while admitted for occlusive crisis secondary to severe pneumonia and bacteremia, he had developed a similar, atraumatic, pain out of proportion to examination and swelling of the right thigh. MRI had shown edema in the right adductor muscle medial knee compartment degenerative disease with mild suprapatellar effusion. Follow up CT scan, knee aspiration, orthopedic evaluation were not consistent with necrotizing fasciitis, avascular necrosis, septic joint, gout. He was treated with ceftriaxone for bacteremia, hydromorphone PCA for pain, and discharged home one week later. Several months later, he presented with similar pain, which was treated with doxycycline for presumed cellulitis. On this admission, rheumatology felt the absence of weakness or skin findings ruled out dermatomyositis, polymyositis. He had no clinical evidence of connective tissue disorders such as lupus, SLE, Sjogren's. Myonecrosis was less likely without a fluid collection and a normal CPK. By exclusion, this could be focal myositis for which they recommended EMG as well as muscle biopsy if the EMG was abnormal. The primary team treated the patient with methylprednisolone x5 days, doxycycline x7 days.

Outcome: The patient's edema and pain resolved after the steroid + antibiotic course. He was discharged several days later. He was re-admitted three weeks later for vaso-occlusive crisis.

POSTER: 7

"A Curious Case of Tickborne Co-infection from Three Pathogens"

CATEGORY: Clinical Inquiry

AUTHOR(S):

Anthony Ciricillo, MD

Angel Reyes-Diaz MD; Preethi George, MD; Daniel Cruz, PhD

INSTITUTION: HMH Mountainside Medical Center

Introduction: In the United States, the reported number of tickborne diseases has steadily increased over the years. The most common tickborne conditions include Lyme borreliosis, Babesiosis, Anaplasmosis, Ehrlichiosis, Spotted Fever Rickettsiosis, Tularemia, and Mycoplasma. However, a tick will commonly be infected by many disease-causing pathogens and can potentially transmit multiple infections from a single bite – a process referred to as co-infection. These conditions present with similar signs and symptoms (fever, fatigue, myalgia, rash), but clinical manifestations during co-infection are often more severe and resistant to standard therapy. It is vital to diagnose a co-infection, as it will directly impact treatment which usually requires a broader spectrum of antibiotics depending on the pathogens.

Case: A 47-year-old woman with no significant past medical history presented to the ED with flu-like symptoms, fatigue, and fever for two weeks. She was previously seen in the ED a week before with similar symptoms and discharged on Doxycycline 100mg every 12 hours x 7 days for suspected community-acquired pneumonia. Before the onset of symptoms, she was healthy and reported running through wooded areas for marathon training. Vital signs were T100.2F, HR 59, and BP 92/48. Physical examination was unremarkable without rash or lymphadenopathy. Laboratory values were significant for platelets 49 (150 - 450 10³/uL), d-dimer 2.99 (<0.50 ug/mL), and erythrocyte sedimentation rate 82 (0-25mm/hr). Chest x-ray and CT Chest showed hazy infiltrates bilaterally in lower lung fields. CT abdomen showed splenomegaly of 14cm. An echocardiogram and electrocardiogram (EKG) showed no abnormalities. Based on these findings, the patient was initially admitted for suspected COVID-19 and started on antibiotics (Azithromycin, Ceftriaxone), intravenous steroids, and enoxaparin for anti-coagulation. The patient had minimal improvement of symptoms in the following days and had multiple febrile episodes (ranging between T101F-T103F). On hospital day #4, lab results revealed Borrelia Burgdorferi antibody total by ELISA

3.57 (0.00 - 1.20 LIV), Babesia on peripheral smear, and Mycoplasma Pneumonia IgM 1.35 (≤ 0.76 U/L). Cultures also showed no growth after five days, and COVID PCR was negative twice. The patient was started on broad-spectrum antibiotics for co-infection of three pathogens which included Atovaquone 750 mg every 12 hours, Azithromycin 500 mg IV daily, and Cefepime 2g IV every 12 hours. On hospital day #6, her symptoms were much improved with no fever for 48 hours; inflammatory markers were trending down, and a repeat blood smear showed no sign of parasites. On hospital day #7, the patient was discharged after symptoms resolved and additionally prescribed Atovaquone x 10 days, Azithromycin x 10 days, and Doxycycline x 28 days for complete coverage.

Conclusion: This case illustrates the importance of diagnosing and appropriately treating tickborne co-infections. These diseases have a high prevalence in the northeast region of the United States (NJ, NY, CT, MA, RI, ME) and should be approached with a high suspicion index. If co-infection is untreated, individuals are susceptible to severe complications, which can be fatal.

POSTER: 8

“Are family physicians providing adequate preconception care to females of reproductive age during routine health visits?”

CATEGORY: Quality Improvement

AUTHOR(S):

Anthony Ciricillo, MD

Preethi George, MD ; Daniel Cruz, PhD

INSTITUTION: HMM Mountainside Medical Center

Background: In recent years, maternal mortality rates (deaths related to pregnancy or giving birth) in the United States have reached 17.4 maternal deaths per 100,000 live births, which ranks last among industrialized countries. The majority of maternal deaths are associated with preventable complications during pregnancy and childbirth (i.e., cardiovascular, bleeding, hypertension, infection), likely from the lack of quality care before or during pregnancy. As family physicians, we have a valuable opportunity in the primary care setting to optimize a woman’s health and address risk factors before pregnancy, thereby reducing the number of adverse maternal and fetal outcomes. This practice is also known as preconception care, an important part of women’s health that includes reproductive planning, educational and health promotion counseling, chronic disease management, family history, genetic risks, and social/behavioral history. For instance, women should receive counseling on the importance of initiating prenatal vitamins, reducing the chance of developing neural tube defects. Similarly, maternal obesity has a high prevalence and, when left untreated, contributes to nearly all pregnancy complications (miscarriage, preeclampsia, gestational diabetes, stillbirth, and congenital defects). The purpose of this research was to improve the quality of preconception care in our family practice by 1) understanding areas for improvement and 2) understanding the most common health risks in our patient population.

Methods: A retrospective chart review was performed on 50 females of reproductive age (between 18 to 35 years old) who were seen for preventative health appointments at our family practice office last year. We reviewed all EMR documentation to understand if our providers appropriately addressed the major components of preconception care during that visit. We also reviewed the chart for any health risks commonly associated with poor outcomes in pregnancy.

Results: The research successfully identified multiple areas and high-risk factors where we could significantly improve our preconception care. Based on the documentation, there was insufficient counseling regarding reproductive planning (4%), prenatal vitamins (8%), and birth control. Of note, 55% of females were having unprotected sex without any form of birth control. Nearly half of these patients were not counseled on contraception options or the potential consequences of unintended pregnancy. Furthermore, approximately 75% of patients were also affected by a chronic condition. Some of these standard high-risk features included obesity (40%), mental illness (33%), and substance use (30%).

Conclusions: Family physicians have an indispensable role in caring for women of all ages and providing preconception care. As health problems are becoming more common in the United States, educational and health promotion counseling should be regularly included in primary care visits for women of reproductive age to reduce adverse pregnancy outcomes. Future research will evaluate the utility of a preconception risk assessment screening tool, a standardized and time-efficient solution to establish best practices of preconception care in our family practice. More investigation is also needed on social determinants of health and addressing these barriers of care. These topics are not routinely screened in our practice (e.g., financial insecurity, education, family support).

POSTER: 9

“Health Disparities with COVID-19: Is there an association between demographics, comorbidities, and clinical outcomes in hospitalized patients with COVID-19 on the FM service?”

CATEGORY: Research

AUTHOR(S):

Anthony Ciricillo, MD
Jorge Suening MD; Preethi George, MD; Daniel Cruz, PhD

INSTITUTION: HMM Mountainside Medical Center

Background: COVID-19 has caused a global pandemic that continues to devastate our nation with unprecedented challenges from a public health and economic standpoint. It was first identified in December 2019 in Wuhan, China, and was declared a global pandemic by the World Health Organization on March 11, 2020. A year later, it has taken over half a million lives in the US and over 2.7 million worldwide, making it one of the deadliest pandemics in history. Data indicates that racial and ethnic minority groups have been disproportionately affected by COVID-19, likely a direct result of long-standing systemic health and social inequities that exist in the United States. These populations have a higher likelihood of developing pre-existing conditions (hypertension, diabetes mellitus, and cardiovascular disease) that may contribute to poorer outcomes when infected by COVID-19. The primary purpose of this research was to understand the association between demographics and co-morbidities on clinical outcomes of hospitalized patients with COVID-19. Our study also compared treatments using the standard of care (antibiotics, hydroxychloroquine, steroids, vitamins) with a sub-group that also received colchicine. Colchicine is a well-known anti-inflammatory agent that theoretically could play a role in preventing the cytokine cascade that is associated with many severe symptoms of COVID-19 (including acute respiratory distress syndrome, shock, multiorgan dysfunction).

Methods: We performed a chart review of 34 patients hospitalized with COVID-19 between March 2020 and June 2020. Patients were confirmed for SARS-COV-2 by a positive result on PCR testing via nasopharyngeal sampling. We collected demographic data, including age, sex, ethnicity, co-morbidities, and treatments. The clinical endpoints included inflammatory markers, length of stay, and outcome. **Results:** The data showed no statistical significance between demographics, co-morbidities, and clinical outcomes among hospitalized patients with COVID-19. There was also no significant difference in the sub-group treated with colchicine compared to the standard of care.

Conclusions: We still have many unanswered questions with COVID-19 due to research limitations, but we know disparities exist in healthcare and are directly associated with a higher incidence of chronic conditions and worse health outcomes. During the pandemic, our inpatient service had a disproportionate number of hospitalized patients who were Black/African American and Latino, reflecting this systemic issue. The etiology of racial/ethnic health care disparities is multifactorial and involves economic, political, environmental, social, and cultural factors. These groups often experience lower incomes, more unemployment, food and housing insecurities, educational gaps, and lack of access to healthcare services or health insurance. As physicians, we must be aware of these social determinants of health that create problems for our healthcare system. Future research should be focused on understanding inequities and improving access to healthcare and health prevention.

POSTER: 10

“Resident Led Curriculum on Non Violent Communication and its Influence on Interpersonal Communication amongst Family Medicine Residents”

CATEGORY: Quality Improvement

AUTHOR(S):

Gisela Delgado Rosado, MD
Dieynaba Toure DO; Amulia Chari, DO; Nada Farooqui, MD

INSTITUTION: St. Luke's Warren Family Medicine

Medical Residency is a time of high stress levels for training physicians due to long hours, high responsibility and minimal control over their day (5). Stressors during residency include competing time demands, lack of control, high responsibility, low team support, excessively challenging work situations and environments, low confidence, and interpersonal conflict (5). All of these factors are placing residents at risk for reduced well-being, distress, burnout and the triad of emotional exhaustion, depersonalization and cynicism, and decreased sense of personal accomplishment, leading to increase in psychological distress (5). The study by Martini et al studied the burnout rate of residents among different residency programs, with family medicine having a score of 27% (4). Burnout leads to decreased job performance, lower career satisfaction, decrease in empathic concern. Another factor which may play a role in this includes home related stressors (4). Communication is a key part of our job as physicians. According to the Canadian Interprofessional Health Collaborative, the foundation of relationships on which collaborative practice is built and the basis of all forms of cooperation is communication. However, trouble with communication between professionals can lead to conflicts, stress, and/or exhaustion. It is considered to be the main cause of medical errors and delays.(2) A study by McCaffrey et.al., communication improved with active listening, empathy, and self-disclosure process based on awareness of self and others (2). Nonviolent communication by Dr. Marshall Rosenberg, seeks to foster authenticity and increase awareness of how attitudes and actions affect relationships. It fosters better relationships, prevents and disable conflict, promotes awareness of self and personal responsibility, increases empathy and the ability to sustain positive social relationships (2). NVC has been studied in different settings, with findings supporting the use of NVC training in improving interpersonal skills and relationship quality. In the study by Wacker, R and Dziobek, R, a 3 day training in NVC was

implemented with employees in a public health organization in Germany. This study demonstrated increased emotion verbalization behavior, which led to prevention of social stressors at work, and decline in empathic distress (1) In the study by Museux, et.al., focused on interprofessional communication among health and social workers by NVC training session.

The results showed improvement in group competencies, specifically in the areas of decision making and developing a shared plan of action. However no significant improvement in communication competency was shown.(2) A study by Marlow et. al., provided NVC training to male parolees enrolled in substance abuse treatment, which showed a significant increase in their empathy levels. Majority of the participants felt that the empathetic communication skills were applicable to their interpersonal relationships across the board. However, to the best of our knowledge, use of this training in a residency program has not been attempted yet. We hypothesize that providing the opportunity for NVC training will improve interpersonal communication among peers, which will lead to reducing this factor as a stressor in workplace. We also consider the training will improve empathy towards patients, which will help residents improve intrapersonal emotion management.

POSTER: 11

“Analysis of Hospitalized COVID Patients' Medical Histories' Effect on Length of Hospital Admission”

CATEGORY: Research

AUTHOR(S):

Roshen Eapen

Michael Cascarina, MD

INSTITUTION: Our Family Practice

There is abundant evidence to show that individuals with certain health conditions are more vulnerable to infection by the COVID-19 virus. Some of these health factors include: old age, congestive heart failure (CHF), chronic obstructive pulmonary disease (COPD), hypertension (HTN), obesity, and diabetes (DM). Having these comorbid conditions can also lead to worse health outcomes after a COVID infection. While we know individuals with these health factors are at greater risk, there is not much data on which of these health factors when compared to each other, contribute most to adverse outcomes. This information could be valuable to further understand which individuals are at greatest risk. A potential use for this research would be to understand which subsets of populations are most likely to develop complications from COVID infection, which would let us prioritize which patients should be given the COVID vaccination based on their medical history. The goal for this research was to evaluate data that compared outcomes of individuals who were admitted to the hospital for COVID infection based on their history of health problems. Data was obtained from a list of all patients of the "Our Family Practice" group who were admitted to the hospital from 03/01/2020 to 03/01/2021. From this list, each patient was searched from the Aledade patient database to see their diagnosis for hospital admission. The medical histories and length of hospital admission for patients who were admitted for COVID or suspected COVID were obtained. 43 total patients that were admitted to a hospital for COVID were obtained, and the patients' length of admission to the hospital was used as a parameter for their health outcome, as lengthier stays generally means greater morbidity. Results of data collection showed that the average hospital admission of individuals with DM (n=6) was 3 days, COPD (n=6) was 4.2 days, obesity (n=5) was 4.25 days and HTN (n=3) was 6 days. There was no statistical significant difference between these averages. When accounting for individuals with comorbidities of these health problems, it was noted that there was a significant increase in hospital admission days for individuals with CHF+COPD (n=3) at 14.33 days, DM+HTN (n=2) at 13 days, and DM+CHF+HTN (n=3) at 19 days. Limitations to this research included sample size and limited access to data. Further research with a larger sample size will provide more accurate mean values. Along with this, increased access to patient information could eliminate some confounding variables in the study. For example, if information was obtained about how each patient was treated for their hospital admission, this would account for a potential confounding variable of different treatments. Also, information about individuals with these health problems who contracted COVID, but were not admitted to the hospital would be relevant data to have to further understand patient risk.

POSTER: 12

“The Use of Physician Outreach to Increase Follow Up Care of Type 2 Diabetes Mellitus During the Covid-19 Pandemic”

CATEGORY: Quality Improvement

AUTHOR(S):

Nada Farooqui, MD

Helaine Levine, MD

INSTITUTION: St. Lukes Coventry Family Practice

BACKGROUND: The incidence and prevalence of Type 2 Diabetes Mellitus is increasing in the United States. Patients often do not appreciate the severity of their illness, its progressive nature, and the importance of follow up care to slow disease progression. In addition, the Covid-19 pandemic has created fear of leaving the home to go for primary care visits to care for chronic conditions.

HYPOTHESIS Patients who are hesitant to come for Type 2 Diabetes Mellitus care due to Covid-19 will be reassured of office safety precautions and be motivated to schedule and complete appointments when contacted by their primary care physician. These patients can be “recaptured” through physician-led engagement and education. The goal was to recapture 50% of patients who were contacted and educated by the resident primary care physician.

DESIGN: The study was performed at St Luke’s Coventry Family Practice, a residency-based community clinic in Phillipsburg, NJ. A cohort of patients was identified with an EMR query for Type 2 Diabetes visits performed in November 2020 for the period of January 2019 to October 2020. Patients met inclusion criteria by having a Resident primary care provider, Hemoglobin A1C \geq 9.0%, at least one office visit in the past year with no office visits in the past three months. Patients were excluded if they had left the practice or were managed by Endocrinology.

METHOD: Resident physicians were asked to contact patients with Hemoglobin A1C \geq 9.0%. A minimum of three telephone call attempts were made at different times of the day. Patients received strong recommendations regarding the need to resume care for diabetes as well as reassurance regarding Covid-19 precautions taken in the office to protect patients and staff. Names of patients who agreed to visit were given to office clerical staff for scheduling.

RESULTS: 405 patients had a resident PCP 79 patients were found to have a most recent Hemoglobin A1C \geq 9.0%. (20%) 46 patients were successfully contacted by their physician. (58%) 34 were seen for an office visit, Recapture rate of 74%.

DISCUSSION: The recapture rate of 74% exceeded our goal of 50%. Thus, the physician-led engagement and education intervention was successful in bringing the most severely ill diabetic patients to follow up during the Covid-19 pandemic. Limitations of this study included the inability to reach all patients despite 3 telephone contacts. While the initial outreach call was initiated by the resident physician, the scheduling call was made by clerical staff. Some patients, who were successfully contacted by the resident physician, were unable to be reached by the scheduling staff. With the increasing prevalence of Diabetes, the importance of routine and preventative care cannot be overemphasized. The rapport between a Family Medicine Physician and patients with diabetes can be key to improving patient compliance, outcomes, and quality of life even in the most challenging of times.

POSTER: 13

“An Unusual Case of Vaginal Bleeding in a Patient with an Indwelling Foley Catheter”

CATEGORY: Clinical Inquiry

AUTHOR(S):

Nada Farooqui, MD

Kate Viotto, DO; Raymond Buch, MD

INSTITUTION: St. Lukes Coventry Family Practice

INTRODUCTION: Foley catheter placement should be avoided whenever possible in both the acute and long-term settings. Even acute foley catheter use has been associated with longer hospital stays, increased discomfort, and decreased return to ambulation. Chronic foley use should only be considered in bladder outlet obstruction, intractable skin breakdown, neurogenic bladder, and for reasons of comfort in the palliative care setting.

CASE DESCRIPTION: A 65-year-old female with a past medical history of Diabetes Mellitus, Dyslipidemia, Morbid Obesity, Chronic Kidney Disease Stage 4, Heart Failure, and Neurogenic bladder with chronic indwelling foley presented to the Emergency Room with complaints of two days of vaginal bleeding. Due to her elevated white blood cell count, a CT Abdomen/Pelvis was performed that showed an abscess of the pelvis and underlying bilateral pubic symphysis osteomyelitis. Urine analysis and culture were indicative of a urinary tract infection. The patient was admitted for IV antibiotic treatment and further monitoring.

INTERVAL HISTORY: Interventional Radiology was consulted for placement of a drainage tube into the suprapubic soft tissue collection. During this intervention, there was concern for possible bladder involvement, and Urology was consulted for further input. During the course of her admission, she continued to have purulent vaginal drainage and bleeding of unknown source. During a routine drainage tube check, it was noted that methylene blue injected into the tube was not found in her foley, as expected with presumed bladder involvement, but instead, dye was found in her labial area.

OUTCOME: Gynecology Oncology was consulted at this time due to the patient’s continued postmenopausal bleeding, purulent drainage from the vagina, and plausible tract between the suprapubic abscess and vagina. The patient was taken to the OR for an examination under anesthesia, D&C with hysteroscopy and cystoscopy with cystogram. A urethral vaginal fistula was found and implicated as the primary event with resulting tissue breakdown and necrosis. This in turn led to secondary infection which tracked superiorly to the retropublic space causing pubic osteomyelitis and a vesicocutaneous fistula. The mid urethra was also found to be necrotic with bladder

content draining from the proximal urethra into the vagina. This patient was not a candidate for fistula repair nor would she benefit from a suprapubic catheter. She was discharged to the skilled nursing facility for completion of IV antibiotics.

DISCUSSION: Urethrovaginal fistulas are a rare complication occurring secondary to inappropriate foley balloon placement during vaginal delivery, sling procedures, pelvic malignancy or urethral repair attempts. In our patient, the formation of the fistula was secondary to chronic foley catheter removal and replacement causing repetitive abrasion and stress to the urethra. This was further complicated by the patient's advanced diabetic neuropathy that precluded that patient's ability to feel discomfort or urinary symptoms, thus allowing fistula formation and infection to advance to pubic osteomyelitis. The most validated repair for a urethrovaginal fistula is the Martius operation, which involves interposing the labial fat pad between the urethra and vagina. Unfortunately, our patient was not a candidate for this procedure.

POSTER: 14

"A Complicated Case of Contagious Cough: A Case Report"

CATEGORY: Research

AUTHOR(S):

David Fear

Iftekhhar Mahmud, DO; Richard Rondanina, MD

INSTITUTION: Geisinger Commonwealth School of Medicine

Introduction: Despite the availability of multiple vaccinations against *Bordetella pertussis*, infection rates remain a public health concern and a cause of chronic cough. Even those previously vaccinated are at risk of infection as the available vaccines offer variable and non-lifelong immunity protection. Certain comorbid conditions such as chronic obstructive pulmonary disease (COPD) put individuals at risk for more severe cases of infection and are associated with worse outcomes. Here, we present the case of a patient with COPD and allergy to first-line treatment who was treated for "whooping cough," the disease caused by *Bordetella pertussis*, throughout the course of an extended hospital stay.

Case presentation: A 65-year-old female with past medical history of COPD, fibromyalgia, gastroesophageal reflux disease (GERD), and recent COVID-19 infection several months prior presented to the emergency department with a chronic cough of 4-6 week duration under the recommendation from her pulmonologist. Concerned about pneumonia and complicated by a penicillin allergy, she was started on intravenous (IV) Levofloxacin and IV Aztreonam following a sepsis alert due to tachycardia to 102 beats per minute and an elevated lactate of 3.01 mmol/L. Due to the comorbidity of COPD, the patient was started on an inhaled corticosteroid (ICS) and a long-acting beta agonist (LABA). An initial chest computed tomography (CT) scan was negative for pneumonia. Pulmonology was consulted and recommended Pertussis titers due to the chronic cough and the fact that the patient was not up-to-date with Tdap (Tetanus, Diphtheria, Pertussis) Vaccine. The patient improved over the course of the hospital stay with the Levofloxacin and supportive therapies for her cough which persisted. After 6 days, the pertussis titers came back positive. Due to her penicillin allergy, infectious disease (ID) was consulted and recommended Trimethoprim / Sulfamethoxazole (TMP-SMX). The New Jersey Health department was contacted to notify her close contacts. After an extended hospital stay of 10 days, she improved and was stable enough to be discharged home on TMP-SMX, pseudoephedrine-guaifenesin, codeine-promethazine, benzonatate, acetylcysteine.

Discussion: Even in the context of the current COVID-19 pandemic, it is important to maintain a broad differential in the work-up of chronic cough. It is well known that neither natural nor vaccine-generated immunity offers lifelong protection from *Bordetella pertussis*. It is also well understood that patients with certain comorbidities such as COPD suffer from increased economic burden while being treated for whooping cough. Here, we discuss the extended hospital stay of our patient with a history of COPD complicated by the fact that the patient is allergic to the first-line treatment for pertussis infection. We are reminded of the importance of advocacy for booster pertussis vaccination.

POSTER: 15

"The effect of the Covid-19 lockdown period on diabetes"

CATEGORY: Quality Improvement

AUTHOR(S):

Donald Fru, MD

Angella Makaha, MD; Daniel Cruz, PhD; Preethi George, MD.

INSTITUTION: HMM Mountainside Medical Center

COVID-19 is the most infectious disease originating from the SARS family coronavirus. This disease is responsible for the 2020 pandemic, which caused a global increase in mortality and morbidity. Much of disease health impact is related to the viruses adverse effect on multiple body organ systems, but also due to the indirect effects driven by medication accessibility, accessibility to food and ability to

participate in leisure activities. The novel coronavirus correlates with a broad range of medical conditions such as hyperglycemia, hypercoagulability, acute and chronic lung diseases, and other cardiac pathologies. These conditions are severe amongst the high risk populations defined as persons with elevated BMI, hypertension, CHF, COPD, and diabetes. The state of New Jersey implemented a mandatory lockdown period from April 2020 until June 2020 to curb the spread of the virus. Patients were likely affected during this lockdown period probably due to inaccessibility to their health needs and leisure activities. Our research set out to illustrate the implications of the lockdown on the hemoglobin A1c, as well as other high risk comorbidities such as BMI and blood pressure. Our data was obtained from the Mountainside Family Practice electronic medical records. Records of 325 patients with diabetes and prediabetes seen between the periods of November 2019 and November 2020 were analyzed with patients whose hemoglobin A1c checked in both the pre-covid and post-covid time periods selected. 65 patients met this criterion. The BMI and blood pressures of the 65 patients were also analyzed. The study showed that there was no significant difference between pre-covid and post-covid Hemoglobin A1c (p=0.055). Additionally, the study showed no significant difference between the pre-covid and post-covid BMI (p=0.778). The study also showed no significant difference with SBP (p=0.449) and BDP (p= 0.455).

POSTER: 16

“Bilateral Adrenal Hemorrhage Following Thrombolysis”

CATEGORY: Clinical Inquiry

AUTHOR(S):

Andrew Haddad, MD

Kimyetta Robinson, DO; Emad Kamel, MD; Christopher Bader, DO; Kelly Ussery-Kronhaus, MD; Kenneth Kronhaus, MD

INSTITUTION: HMH Ocean Medical Center

Learning Objectives: 1. Recognize signs and symptoms of adrenal insufficiency. 2. Understand the pathophysiology of adrenal insufficiency after thrombolysis. 3. Understand diagnostic and therapeutic options for adrenal insufficiency.

Case Summary: Patient is a 63-year-old male with a PMH of hypothyroidism who presented to the ED via EMS with the complaint of multiple syncopal episodes and seizure-like activity. He was found to be hypotensive in the field but was alert and oriented on arrival to the ED. In the ED, he became bradycardic and required CPR. He was resuscitated via ACLS protocol 4 times for cardiac arrest, one instance showing ventricular tachycardia. An EKG was done showing ST elevation in lead V1 with evidence of right ventricular strain. 50mg of TPA was given IV for a suspected pulmonary embolism based on the D-Dimer as patient was initially too unstable for CT. ROSC was achieved, he was started on vasopressors, and transferred to the ICU. Vital signs after intubation and pressure support were as follows: blood pressure 109/55 mmHg, pulse 115 beats per minute, respiratory rate 18 breaths per minute, saturating 99%, temperature 98.2 degrees Fahrenheit. Physical exam was significant for diminished breath sounds bilaterally and abdominal distension. LABS: D-Dimer 25,537 ng/mL (<500), ACTH 6.1 pg/mL (7.2-63.3), AM Serum Cortisol 2.9 ug/dL (8.7-22.4), Cortisol 30 minutes 11.7 ug/dL (>= 18-20), Cortisol 60 minutes 14.6 ug/dL (>= 18-20). IMAGING: CT of the chest showed bilateral main pulmonary emboli with extension to the bilateral lower lobe vessels. CT of the abdomen showed bilateral adrenal hemorrhage greater on the left side with a left retroperitoneal hematoma. Lower extremity dopplers showed DVT in left popliteal vein. The patient was blood transfusions as needed given retroperitoneal bleed from bilateral adrenal hemorrhage. He was found to have hypernatremia and hypokalemia which was managed with the assistance of nephrology. He was placed on vasopressors to maintain his blood pressure and started on hydrocortisone sodium succinate 100mg IV q8h. The patient’s AM Cortisol level and ACTH levels were drawn, and an ACTH stimulation test was done. The patient’s cortisol levels did not respond to normal levels, confirming adrenal insufficiency.

Conclusions: Acute adrenal insufficiency can occur as a result of sudden, bilateral adrenal necrosis caused by blunt trauma, sepsis, emboli, and hemorrhage. Regardless of the etiology, the exact mechanism of adrenal hemorrhage has not been established. Postulated theories implicate anatomical causes as the usual culprits. Over 90% of patients present with hypotension or shock. Other presenting symptoms include abdominal or flank pain, fever, and neuropsychiatric symptoms. Laboratory evidence of hemorrhage such as a drop in hemoglobin and hematocrit with progressive hyperkalemia and hyponatremia are expected. Classic risk factors include anticoagulant therapy or an underlying coagulopathy, and post-operative state. Bilateral adrenal hemorrhage is a rare but potentially fatal entity that carries a mortality rate of 15%.

POSTER: 17

“HELLP Syndrome”

CATEGORY: Clinical Inquiry

AUTHOR(S):

Daniel Khan, MD

Gagan Malhi, DO; Timothy Wu, MD; Erica De Clemente, MD; Kelly Ussery-Kronhaus, MD; Esther Koai, MD

INSTITUTION: HMH Ocean Medical Center

Case Summary: Patient is a 29-year-old G4P3003 who presented to Labor and Delivery unit for evaluation of seizure which occurred at an outpatient OB clinic. Patient had presented to clinic for evaluation after experiencing decreased fetal movement that morning. In the office, the patient was found to have a Category 3 tracing on a fetal non-stress test and shortly after experienced a seizure lasting about 3 minutes. Patient was promptly transported to OMC where she was taken immediately to the operating room for an emergency C-Section. However, after finding no fetal heartbeat on ultrasound, the decision was made to transport the patient to L&D for a vaginal induction of labor for fetal demise. In L&D, the patient had an additional seizure lasting 1 minute which prompted a rapid response. Patient was put on a nasal cannula and started on Versed to prevent recurrence. A stat CT head was ordered with findings depicting a subarachnoid hemorrhage that extended to the subdural space and possibly into the pituitary. In addition, the patient was also found to have a platelet count of 20,000. A code neuro was called and the decision was made to transfer the patient to Jersey Shore University Medical Center for close monitoring in the Neuro ICU.

Conclusion: The presence of elevated LFTs, low platelets, seizure activity, and hemorrhagic complications clarifies the diagnosis of HELLP Syndrome. It is thought to be a variation of pre-eclampsia that presents around 28-37 weeks gestation. The patient presentation usually consists of a rapid onset of colicky abdominal pain and nausea. Hypertension and proteinuria are commonly present but it is important to note that hypertension can be absent in roughly 20% of patients. The key lab values for correct diagnosis include CBC, peripheral smear, AST/ALT, bilirubin, and LD. HELLP must be promptly diagnosed and treated due to its associated maternal and fetal complications as seen in our patient. Currently research suggests that due to the variable nature of presentation, diagnosis is generally delayed 8 days with conflicting presentations which can be confused with cholecystitis, esophagitis, gastritis, or hepatitis. As a result a careful history, examination, and a high index of suspicion are essential in correctly diagnosing HELLP syndrome and preventing maternal and fetal demise. Management consists of magnesium sulfate for seizure prophylaxis and the treatment of hypertension. Delivery is considered the best treatment for gestational age >34 weeks.

POSTER: 18

“Differences in COPD Exacerbations and Admissions Before and During the COVID-19 Pandemic”

CATEGORY: Research

AUTHOR(S):

Nicole Kuhar, DO

Bhavika Patel, MD; Robert Post, MD

INSTITUTION: Virtua Family Medicine

Purpose: The purpose of this research project was to determine the effects of the COVID-19 Pandemic on COPD exacerbations and hospital admissions.

Methods: Study design: Epidemiological study to determine the effects of the COVID-19 pandemic on the number of COPD exacerbations and admissions. Participants consisted of patients with a known diagnosis of COPD as of 3/1/2019 through 2/28/2021 in a community health system comprised of 3 acute care hospitals. Primary outcomes were the percentage of patients with a known diagnosis of COPD that were diagnosed with COPD exacerbations before and during the COVID-19 pandemic and the number of COPD exacerbations that required hospitalizations. Data was collected using EPIC EMR. Means were calculated for continuous variables and proportions were calculated for categorical variables. Data was analyzed using STATA 13.1 software.

Results: In March 2019, there were a total of 6,421 patients with a known diagnosis of COPD. By February 2021, there were a total of 10,418 patients with a diagnosis of COPD. The percentage of patients with a COPD exacerbation was relatively unchanged in most months before and during the pandemic. However, the number of patients admitted with COPD exacerbations was significantly reduced in most months. For instance in March the number of COPD exacerbations were relatively unchanged when comparing before the COVID19 pandemic and during (8.3% compared to 8.9%). However, the number of admissions was significantly decreased, with 24.5% being admitted before the pandemic and 11.6% during the pandemic ($p < 0.001$). This trend was consistent when comparing the number of admissions for COPD exacerbations before and during the pandemic from 3/1/2019 through 2/28/2021.

Conclusions: Despite the number of COPD exacerbations before and during the COVID-19 pandemic being relatively unchanged, the number of hospitalizations was significantly decreased. Future research is needed to determine why the number of hospitalizations decreased.

POSTER: 19

“Hypercalcemia-induced Pancreatitis in a Patient With Sarcoidosis: A Case Report”

CATEGORY: Clinical Inquiry

AUTHOR(S):

Chelsea Lauro OMS-III

Kaitlyn Dalsey, DO; Daniel Feldman, OMS-III; Iftekhar Mahmud, DO, PGY-I; Brendan Kelly, DO, MBA, FACOI

INSTITUTION: Rowan School of Osteopathic Medicine

Hypercalcemia induced pancreatitis is a rare, serious complication of sarcoidosis. Many socioeconomic factors may contribute to each patient's individual outcome. We present a case of a 48-year-old African American female who presented to the hospital with acute pancreatitis and a recent diagnosis of sarcoidosis established 4 months prior. On admission, the patient was found to have an elevated lipase and considerably high serum calcium. The patient was treated with hydration, diuresis, calcitonin, prednisone, and bisphosphonates with resolution of her pancreatitis and a down-trending of her calcium levels. The patient was discharged on oral prednisone with outpatient follow up with pulmonology and nephrology. Our case is a scantily reported scenario in which a patient presented with hypercalcemia-induced pancreatitis despite a known diagnosis of sarcoidosis. This case highlights how socioeconomic factors may act as a barrier for patients to receive the outpatient and maintenance care needed to improve their outcomes.

POSTER: 20

“One Last Cigarette: Seeking to Improve Tobacco Cessation Counselling”

CATEGORY: Quality Improvement

AUTHOR(S):

Nancy Lee, DO

Marilyn Pierre-Louis, MD; Donna Kaminski, DO; Namita Joshi, MD; Dorothy Klingmeyer, DO; Alena Lytwyn, APN-C; Joseph Melograno, DO; Andrea Ramirez PA-C; Catherine Zeh, MD; Jonathan Torres, DO.

INSTITUTION: Morristown Medical Center Family Medicine

Background and Hypothesis: Tobacco use is the leading preventable cause of disease, disability, and death in the US. In 2014 480,000 deaths annually were attributed to cigarette smoking, including second hand smoke.¹ In 2019, an estimated 50.6 million US adults (20.8% of the adult population) used tobacco; 14.0% currently smoked cigarettes; and 4.5% used electronic cigarettes (e-cigarettes).² Tobacco use screening rates were 62.7% during adult visits to outpatient physician offices between 2005-2008, with only 20.9% receiving tobacco cessation counseling and 7.6% receiving tobacco cessation medication.^{3,4} Our aim was to improve tobacco cessation counselling rates by giving providers simple and convenient EMR tools.

Design and Setting: We are a suburban family medicine residency practice with faculty, residents, nurse practitioners and physician assistant providers which uses EPIC exclusively for EMR documentation. We looked at the tobacco cessation counseling rate for adult patients amongst non-resident providers before and after initiation of EMR friendly tobacco cessation tools.

Methods: To establish the baseline individual tobacco cessation counseling rate, we collected data for our adult patient providers from January – April 2020. The tobacco cessation smart phrase and pamphlets were made available July 1, 2020. Patient encounters from July to October 2020 were used for the post intervention data. We began with 12 providers, however, due to changes in staffing over this time, only 8 providers had complete pre- and post-intervention data and were included in this analysis.

Result: Prior to the intervention, the cumulative rate of tobacco cessation counseling amongst faculty providers was 16%. Post-intervention, the cumulative rate of tobacco cessation counseling improved to 46.66%. Individual faculty members also demonstrated significant improvement in their rates of counseling, (p- 0.0223).

Discussion: The use of convenient EMR smart phrase and pamphlet significantly improved rates of tobacco cessation counseling amongst our providers. Unfortunately, we are not able to determine how much improvement was due to the availability of the tools or whether the act of reminding our providers regarding tobacco cessation alone impacted the rate of tobacco cessation counseling. Future considerations would assess whether the improvement in tobacco cessation counselling is sustained. Another investigation could examine whether simply reminding providers about smoking cessation counseling at regular provider meetings would also improve tobacco cessation counseling rates.

POSTER: 21

“Deprescribing Depression in the Elderly”

CATEGORY: Research

AUTHOR(S):

Kevin Ly MD

Zeeshan Khan, MD

INSTITUTION: Rutgers RWJ Medical School

Background: The geriatric population is growing across the world. As screening and awareness for mental health increases, attention has turned to treatment for illnesses such as depression and subsyndromal depression, which include depressive symptoms without meeting the full criteria for diagnosis. There is growing support for use of non-pharmacological measures to treat depression in the elderly due to the risks associated with polypharmacy in this age group.

Design: A literature search was conducted using Cochrane Library, PsycInfo, CINAHL, Pubmed, Scopus and Web of Science in August 2020. The search used keywords: “depression” AND (“elderly” OR “nursing home” OR “nursing homes” OR “long term care” OR “geriatrics”) AND “nonpharmacological” OR “non-pharmacological” OR “recreation” OR “recreational”). This resulted in 212 publications written between 2005 and 2020. After excluding all meta analysis and systemic reviews, and isolating only those focused on nonpharmacological interventions, 57 met criteria with an additional 6 discovered through cited and referenced articles not discovered in the original search.

Measures: Depression scores based on evidence-based tools including Geriatric Depression Scale and PHQ-9, were examined as it related to interventions done on the geriatric population in the nursing home, assisted living and private setting.

Results: Findings favored the use of nonpharmacological interventions however with mixed results for effectiveness. The use of exercise was most prevalent, studied in 35% of all the studies included, and had accounted for reduction of depression in 72% of studies. Creative arts showed effective decreases in depression scores as well, with music, specifically listening to music, improving depression in all cases, while art, light and pet therapy require some further studies to analyze its effectiveness. Most studies were limited in sample size and loss to follow up due to end of life.

Discussion: Exercise and physical activity are a predominant means of addressing depression in the elderly. There have been trends that shifted away from equipment-based approaches in recent years, likely due to difficulty in scalability with costs. Group based and individual approach has increased in recent years. There are potential interventions involving the use of technology that may provide innovative ways to tackle and scale treatment for depression. Limitations in current literature include loss to follow up due to comorbid conditions and small sample size. Very few studies are prospective studies focusing on preventative techniques. Potential areas for future literature and research include long term follow up of previously diagnosed depression in young adults and their ability to cope and manage without pharmacology as they age against late or subsyndromal depression in cognitively impaired individuals. There are limited studies to support decreased cognition as a limiting factor in processing coping skills as well. Finally, insufficient reimbursement for nonpharmacological measures from a policy standpoint, emphasizes the need for change to support the use of nonpharmacological measures in the outpatient setting at nursing facilities and at home.

POSTER: 22

“Improving access to postpartum contraception”

CATEGORY: Quality Improvement

AUTHOR(S):

Kevin Ly, MD

Taru Sinha, MD; Sairah Johnson, MD; Krishna Parikh, MD

INSTITUTION: Rutgers RWJ Medical School

In the United States, there are approximately 61 million women of reproductive age. Of this, approximately 70% are sexually active without the intent of becoming pregnant. Couples who do not use any method of contraception are at significant risk, up to 85% chance, of experiencing pregnancy over the course of a year. Based on current literature, the WHO advises an interval of 24 months between pregnancies as the interpregnancy interval, IPI. Shorter IPIs are associated with a higher rate of adverse maternal, perinatal, and infant outcomes. The use of long-acting reversible contraception, LARC, and sterilization, can reduce the chance of an IPI by approximately 80%. The US Department of Health & Human Services developed contraceptive care measures which determined a metric for adequate contraceptive care to be defined as being provided contraception between 3 and 60 days after delivery.

A retrospective analysis of rate of contraception and family planning was reviewed for postpartum women at the Freehold Family Health Center between Jan 2020 and Dec 2020. 125 pregnancies occurred between this time frame. 48% of post-partum visits included a discussion regarding counseling of contraception, which was defined by billing codes Z30.x. Of these encounters, 65% of encounters were within 3 and 60 days post-partum. 83% of encounters with contraception prescribed were done in the same visit, with 13% of patients required additional follow up for financial assistance in obtaining contraception.

This review serves as evidence and preliminary data to support interventions such as improved education regarding contraception. Potential prospective intervention will include family planning at prenatal visits, available in English and Spanish, discussed by obstetric and primary care providers. Future considerations for outcomes can include rates of counseling, with no preference on particular mode of contraception nor decision to start contraception. Secondary outcomes can include whether or not early discussion regarding family

planning improves physician patient relationships and patient satisfaction. Similarly, timely planning can help to address any financial barriers prior to delivery. Overall, preliminary data shows that there is significant opportunity for improvement in education, accommodation and access to contraception in the post-partum period.

POSTER: 23

“Euglycemic Ketoacidosis”

CATEGORY: Educational Program

AUTHOR(S):

Gagan Malhi, DO

Colin Scott, MD; Paul Weissburg, MD; Charles Rutkowski, MD; Andrew Haddad, MD; Ariel Meyer, DO; Kenneth Kronhaus, MD

INSTITUTION: HMM Ocean Medical Center

Case Summary: A 57-year-old female with a past medical history of type 2 diabetes presented to the emergency department with a complaint of fatigue. The patient had been experiencing weight gain and increased blood sugar since the onset of the COVID pandemic. She had been started on Invokamet 2 weeks prior by her Endocrinologist. The patient had also started a keto diet eight days prior to admission and had lost 5 pounds with improved glycemic control. She remained in her normal state of health until she began experiencing SOB, tachycardia, and fatigue 2 days before presenting to ED. Labs revealed glucosuria and ketonuria but normal blood glucose levels. The anion gap was elevated. The patient was admitted to ICU and started on D5 normal saline with potassium. Insulin drip was not started due to normal glucose levels. Invokamet was held and the patient was put on an insulin sliding scale.

Conclusion: SGLT-2 inhibitors are a relatively new class of drugs with the first approved drug in the class being introduced to the market in 2014. SGLT-2 inhibitors are oral diabetes drugs that can be used in conjunction with other oral medications in type 2 diabetes. These drugs work by inhibiting the sodium-glucose transporter in the distal convoluted tubule, effectively leading to reductions in both sodium and glucose as they are eliminated in the urine. These drugs are typically well-tolerated; however, they can have adverse reactions in certain settings. These side effects include urinary tract infections (especially fungal) and hypoglycemia. Recently a link has been established between SGLT-2 inhibitor use and the development of euglycemic diabetic ketoacidosis. Diabetic ketoacidosis is typically seen in type I diabetes and is defined as having a blood glucose greater than 250 and an anion gap metabolic acidosis with pH <7.32. Ketones are also usually present in the serum and urine. However, in euglycemic ketoacidosis, this occurs in the setting of a blood glucose level that is lower than expected. SGLT-2 inhibitors are thought to be able to maintain a euglycemic state through loss of glucose and sodium in the urine. This leads to a state of starvation which in turn causes lipolysis in order to maintain the body's energy requirement. Keto diets, like many other diets, center around reductions in carbohydrate consumption to achieve weight loss and better glucose control. This can lead to an inadvertent state of starvation that also causes the body to undergo lipolysis for energy. This in turn leads to an increase in ketones causing a similar pathology seen in diabetic ketoacidosis. Therefore, due to this altered presentation of a potentially life-threatening condition, it is important to be aware of the patient history that can lead to an early and correct diagnosis of euglycemic ketoacidosis. Such awareness can result in prompt treatment which can prevent patient deterioration.

POSTER: 24

“Evaluation of Food Spending in Association with Chronic Disease Control”

CATEGORY: Research

AUTHOR(S):

Stefan Mathews, MD

Robert Post, MD; Annamarie Ibay, MD

INSTITUTION: Virtua Family Medicine

Purpose: Diet is a common therapy for disease control where obesity is a known risk factor including hypertension, cardiovascular disease and type 2 diabetes. This study aims to determine how those with chronic disease spend money on various food subtypes.

Methods: Analysis of 2013-2016 National Health and Nutrition Examination Survey (NHANES), a national continuous, cross-sectional survey of the United States population, was performed. Adults 20 years and older who answered the consumer behavior questionnaire were included. Participants were excluded if they did not fully answer survey questions. 4653 participants (representing 193,621,244 American adults) were included for analysis. The selected patients were studied concerning spending habits at grocery stores, eating out (restaurants and carry out) and other food environments (cafeterias and vending machines). Money spent was categorized into percent of total food expenditure. Parameters for disease control included blood pressure less than 140/90 and hemoglobin A1c less than 8.0. Patients' spending was compared by chi-squared analysis to determine significance.

Results: There was no statistically significant difference in percent of food money spent at grocery stores and other food environments when comparing patients with controlled vs uncontrolled diabetes or controlled vs uncontrolled hypertension. There was also no

statistically significant difference in spending patterns in association with obesity. A larger proportion of participants in the lowest quartile of grocery spending reported feeling at risk for diabetes mellitus compared to those in the highest quartile (30.8% vs 21.5%, $p=0.005$).

Conclusions: The breakdown of where money is spent for food is not associated with diabetes mellitus or hypertension control. More research is needed to determine what these patients actually purchase when they buy food at grocery stores and at restaurants.

POSTER: 25

“Implementation of an e-Learning Platform to Supplement Family Medicine Residency Didactics for Board Exam Preparation”

CATEGORY: Educational Program

AUTHOR(S):

Stephanie Matza DO

Kesha Sheth, MD; Thomas McGinley, MD

INSTITUTION: St. Luke's Warren Family Medicine

To keep up with the constantly changing state of medicine, residency programs should seek out ways to improve access to the most current and relevant information and accommodate different learning styles. The traditional model of residency didactics consists of lectures given by faculty, specialists, and other residents. This model does have some drawbacks. Residents may be off-site or working shifts that prevent them from attending lectures. Lectures are notoriously a passive form of learning. Small residency programs, like ours, have fewer choices of lecturers available for presentation. The addition of a web-based e-learning platform to supplement existing didactics could help address these issues by improving access to educational material, broadening the information presented, or by accommodating learning styles better suited for independent reading and answering questions.

With input from our program director, faculty, and residents, we selected an e-learning platform to implement for the 2019-2020 academic year. The chosen product consisted of weekly assigned readings and quizzes. Resident completion reports were tracked, however performance on quizzes was not monitored. We hypothesized that integration of an e-learning platform would improve resident performance on the annual In Training Exam (ITE) when comparing PGY class average scores to the national mean. Class average scores were utilized to protect individual resident privacy. For the class of 2021, initial ITE average score (461) was very near the national average (463) in 2019, and in 2020, the ITE average score (497) was above the national average (485). For the class of 2022, initial ITE average scores in 2019 revealed a result of (381) which was below the national average of (414), and in 2020 revealed an average ITE score (401) which was below the national average (447). Calculated Z scores for class of 2021 were -0.03 before e-learning integration and 0.15 after. The class of 2022 scored -0.48 before e-learning integration and -0.61 after.

Compared to the national average for each PGY class, the class of 2021 performed better after integration of the e-learning platform and the class of 2022 performed worse. These results were not statistically significant. There were many confounding elements to consider, including the COVID-19 pandemic forcing a didactics transition to a virtual platform halfway through the academic year. Based on survey results, residents utilized several other resources in addition to the e-learning platform, including various question banks, review books, and board review courses. Performance on weekly quizzes were also not monitored and could have been done for the sake of completion. Finally, due to small class sizes and in the interest of protecting resident privacy, individual score changes between years could not be analyzed. By survey, only 3 of 20 residents who participated would subscribe to the e-learning platform again. Resident feedback indicated that while the structure of this e-learning platform was helpful to direct studying, most preferred more self-directed learning with resources of their choosing. Given lack of significant improvement across classes and less than favorable reviews from residents, the e-learning platform subscription was not renewed for another year.

POSTER: 26

“Decreasing The Use Of Opioids In Post-Operative Cesarean Pain Management”

CATEGORY: Quality Improvement

AUTHOR(S):

Kristin McKitish, MD

INSTITUTION: NYMC at Hoboken University Medical Center

BACKGROUND: Post-operative pain management remains a crucial topic as untreated pain is associated with a risk of greater opioid use, postpartum depression, and development of persistent pain (1). Current guidelines for post-cesarean pain published by The American College of Obstetricians and Gynecologists include standard oral and parenteral analgesic adjuvants such as acetaminophen, nonsteroidal anti-inflammatory drugs (NSAIDs), opioids, and opioids that are in combination formulations with either acetaminophen or an NSAID (1). As a direct result of the opioid crisis there has been a nationwide movement to decrease both their overall prescription and use. In 2016,

Batemen et al found that one in 300 opioid-naïve patients exposed to opioids after cesarean birth become persistent users of opioids (1). A good substitution for opioids in post-operative pain relief are NSAIDs as they decrease pain scores, particularly related to visceral cramping pain. (3) Scheduled administration may allow a consistent therapeutic concentration as opposed to peaks and troughs when taken as needed, resulting in a reduced need for opiate rescue analgesia (4). Additionally, orally administered NSAIDs are breast feeding-friendly, as they are excreted into breast milk in low concentrations — equivalent to 0.2% of the pediatric dose (3).

OBJECTIVE: The objective of this study was to determine whether or not implementing a scheduled dosage of NSAIDs is as efficient as implementing on an as-needed basis. The goal was to determine if there would be an overall improvement in postpartum pain management for patients who delivered via cesarean section and in turn a decrease in need for opioid use for breakthrough pain.

METHODS: Post-partum pain management was changed from the initial pain scale, which included 600mg of Ibuprofen every six hours as needed for mild pain as indicated by a visual analogue score, with opioids reserved for any moderate or severe pain. The order set was revised to include the scheduled 600 mg of Ibuprofen every six hours regardless of pain, and opioids remained reserved for breakthrough pain as needed. Chart review was then conducted looking at medication dispensed for pain control in post-operative cesarian section patients over two 60-day intervals (October 1, 2018-November 30, 2018 and October 1, 2019-November 30, 2019); one set prior to the pain management medication change and the other after the change was implemented. Amount of NSAID (Ibuprofen 600mg) and opioids (Acetaminophen 325mg/Oxycodone 5 mg) dispensed to each patient were reviewed amongst both groups. Obstetrician-gynecologist attending physicians were the primary surgeons for every cesarean section.

RESULTS: Statistical significance was found in regard to the percentage of patients who did not require any opioids for breakthrough pain throughout their post-operative recovery (p-value = 0.024, odds ratio = 2.8 (95% CI = 1.1-7.0)). In 2018, only 8 out of 53 women did not require any opioids in their post-operative recovery whereas in 2019 with scheduled NSAIDs, 21 women of 63 total did not require any opioids in their post-partum recovery.

CONCLUSIONS: Using a regularly scheduled NSAID showed a statistically significant reduction in the need for opioids after cesarean birth — ultimately cutting down opioid exposure entirely.

POSTER: 27

“Weighing the Outcomes: Does Routine Primary Care Reduce BMI in the Obese Population?”

CATEGORY: Quality Improvement

AUTHOR(S):

Jason Mendelsohn, MD - PGY3
George Miller, MD; Daniel Cruz, PhD

INSTITUTION: HMM Mountainside Medical Center

Background: Obesity is a multifactorial condition which is associated with many leading causes of death in the United States and worldwide, as well as other comorbidities which are not life-threatening but are still limiting to patient functionality and quality of life. It is pervasive globally, and its prevalence has been increasing dramatically over the past several decades. Our study sought to determine how well the primary care physician addressing this growing concern. Our null hypothesis states that obesity is not being adequately addressed or managed.

Methods: Specifically, our study reviewed whether obesity was being addressed during a patient’s primary care, what recommendations were being made if obesity was addressed, and whether those recommendations led to a meaningful decrease in total body weight (5% per NHBLI guidelines). We did so by analyzing randomly selected charts between 2016-2019, and following them over a minimum of six months to allow sufficient time for weight loss. We determined what percentage of these patients had their obesity addressed, subcategorized the recommendations which were made, and analyzed which patients had achieved a meaningful weight loss. We attempted to subcategorize patients based on conditions that may predispose to weight gain, but our study lacked the statistical power to do so.

Results: Overall, we found that one third of patients did not have their obesity directly addressed, and several did not have obesity noted in their past medical history. Diet and exercise were the most prevalent recommendations made, with nutritionist referrals, weight loss programs, and bariatric surgery referrals accounting for only one third of recommendations. Behavioral modification techniques were not documented for any of our patients. Only 28% of the patients studied were able to lose weight, and of these only two thirds were able to sustain it. However, those who received weight loss recommendations were significantly more likely to lose weight than those who did not (35% vs 7.7%).

Discussion: Despite obesity’s known health risks and increasing prevalence, we found it is not being adequately addressed. Reasons for this may be due to time constraints on the PCP during a visit, as we found obesity more likely to be addressed during an annual physical

rather than a problem visit. Obesity may also be seen as “commonplace” by the PCP, and therefore not a directly treatable medical issue. Diet and exercise were the most common physician recommendations, but factors limiting this may be lack of time to discuss the advice, poor patient internalization of the advice, variations in the physicians’ recommendations, variable patient motivation, and healthcare disparities. Adjuvant recommendations may be underutilized due to lack of physician familiarity. Per AACE recommendations, lifestyle therapy to control obesity should address meal plans, physical activity, and behavioral changes; however, behavioral changes were not addressed in our patients, leading to another potential gap in adherence. The AACE also recommends follow up visits to reinforce weight loss, which we found were not being scheduled. In sum, we recommend providing adequate time and specific visits to address obesity for more effective interventions.

POSTER: 28

“Contraceptive implant training: perspectives from family medicine residencies in New Jersey”

CATEGORY: Research

AUTHOR(S):

Stephanie Mischell, MD

Kenya Cabrera, MD

Tiana Acosta, BA; Jeffrey Levine, MD, MPH; Ania Sliwowska, MD; Jennifer Amico, MD, MPH

INSTITUTION: Rutgers RWJ Medical School

PURPOSE: The aim of this study is to evaluate the experiences of New Jersey Family Medicine residents with the etonogestrel subdermal contraceptive implant (Nexplanon) in their clinical practices, and to explore barriers to training perceived by family medicine residents and faculty.

METHODS: This observational study will employ mixed methodologies to assess resident and attending physicians’ knowledge, attitudes and experiences with contraceptive implant training. The study population includes both resident and attending physicians enrolled in any of the 19 accredited Family Medicine residencies in New Jersey. Exclusion criteria include attendings who do not regularly precept family medicine residents in the outpatient setting. A survey will be used to stratify the residency programs by average number of contraceptive implant devices provided by residents. Residents and attendings from the upper and lower quartile of residency programs will be invited to participate in semi-structured exploratory interviews. We will ask subjects to identify and explain factors that support or inhibit contraceptive implant training and provision in their residency program. We anticipate requiring 32 total interviews, including 8 residents and 8 attendings from each subgroup prior to reaching thematic saturation. We will transcribe, code and analyze interviews on a rolling basis, utilize memoing to reflect on the data and identify saturation, and develop and refine our codebook using a collaborative and iterative process. We will compare findings between the subgroups to identify differences in barriers and enablers between subgroups.

RESULTS (anticipated): We expect a range of experience with the contraceptive implant. We anticipate identifying barriers to resident physician comfort and experience with implants across both environmental factors in the clinic itself, environmental factors in the broader residency program such as access to training, and personal factors such as individual comfort with contraception and perception of patient’s values.

CONCLUSIONS (anticipated): Contraceptive implants can be effectively prescribed by family medicine physicians with adequate support and training. We anticipate this study will illuminate areas of further study for possible interventions to increase family physician comfort with contraceptive implants.

POSTER: 30

“A Rare Case of Diabetes Insipidus Following Outpatient Constipation Treatment”

CATEGORY: Clinical Inquiry

AUTHOR(S):

Manuela Noriega, DO

Diana Palanker, MD; Jaime Diaz, MD; Muayad Bayat, MD; Iyad Baker, MD; Adam Atoot, MD

INSTITUTION: HMM Palisades Medical Center

In this case, we present the case of an otherwise healthy 37-year-old male that develops severe hyponatremia after the consumption of magnesium citrate as a laxative for the treatment of constipation. Patient had occasional episodic constipation that he had treated with stimulant senna based laxatives in the past. Patient was recommended the osmotic laxative Magnesium Citrate as a shorter acting alternative. Patient reported taking the laxative and continuing to hydrate with “several glasses of water” while experiencing bowel movements that turned into diarrhea. 4 hours after the ingestion of the laxative, the patient experienced sudden onset of generalized weakness and dizziness and presented to the ED for further evaluation. He reported ingesting one bottle, 10 ounces, of magnesium

citrate early on the day of presentation and denied taking any other medications. On examination, the patient was lethargic, grunting, and experienced a generalized seizure. He was noted to have dry oral mucosa, pale sclera, and poor skin turgor. Based on the patient's history and examination, 1 L bolus of intravenous normal saline was initiated. Discussion: Severe hyponatremia secondary to consumption of over the counter laxatives a rare complication. Additionally, diagnosis of central DI can be based on plasma hyperosmolality (>300 mOsm/L), urine hypoosmolality (<300 mOsm/L or urine/plasma osmolality ratio <1), and polyuria exceeding three liters per day. As with this patient, initial labs were suggestive of hyponatremia secondary to cerebral hypersecretion of ADH, indicated by hyponatremia with elevated urine sodium and urine osmolality. However, in a matter of 24 hours, urine osmolality and urine sodium had decreased significantly, highlighting the compensatory presence of diabetes insipidus. Central suppression of ADH was hypothesized as the compensatory drive of the subsequent volume depletion. This was believed to be due to the laxative agent, magnesium citrate, causing volume depletion triggering a compensatory increase of ADH secretion. This hypersecretion of ADH combined with the laxative triggered electrolyte imbalances with ingestion of free water resulted in severe hyponatremia. Rapid increase in intravascular volume after the 1L bolus of 0.9% NS and the emergent infusion of 100 mL of hypertonic saline, resulted in suppression of ADH secretion and presented as clinical central DI with polyuria and aquaresis. This sequelae of compensatory ADH suppression was likely the primary cause for the spontaneous overcorrection of serum sodium in the 24 hrs following initial treatment with hypertonic saline. This is further supported by suppression of the patient's polyuria and cessation of further overcorrection after the administration of DDAVP. While hyponatremia caused by polydipsia and central DI are well-known conditions, it is rare to have both occur sequentially as a result of the consumption of the OTC laxative, magnesium citrate. This phenomenon of spontaneous central DI after hypovolemic hyponatremia is an unique clinical presentation that should be considered and anticipated during the management of acute hypovolemic hyponatremia and instructions for adequate hydration with electrolyte supplemented beverages during treatment of constipation with osmotic laxatives.

POSTER: 31

“Recurrent Pericardial Tamponade With Pericardial Effusion in a 30 year old with Stage IV Non-Small Cell Lung Cancer (NSCLC)”

CATEGORY: Clinical Inquiry

AUTHOR(S):

Tomi Olaniyan, MD

Shalena Islam, MD; Kirk McCalmon, MD; Raahi Upadhyay, MD; Mahvish Qazi, MD; Jamie Cherian, DO; Akanksha Saxena, MD; Resham Khan, MD; Meetali Patel, DO

INSTITUTION: Rutgers RWJMS at CentraState

Inframe insertions of three or more base pairs in exon 20 of the epidermal growth factor receptor (EGFR) gene were among the first EGFR mutations to be identified as oncogenic drivers in non-small cell lung cancer (NSCLC). However, unlike the classical EGFR L858R point mutation or exon 19 deletions, which represent the majority of EGFR mutations in NSCLC, low frequency EGFR exon 20 insertion mutations are associated with resistance to targeted EGFR inhibitors and correlate with an extremely poor patient prognosis. Here we discuss the unfortunate case of a 30-year-old female who had presented with stage 4 NSCLC with metastasis further complicated by a large pericardial effusion causing cardiac tamponade and right ventricular collapse. Although this unique case presentation was detected during the later stages of a horrible disease, it not only highlights the importance of primary care and preventive care, it also underscores the importance of having palliative and/or hospice evaluation for end of life discussions. By having primary care physicians in collaboration with palliative/hospice specialists assist terminal patients to establish their personal goals of care, this will help to promote quality of life for terminal patients during the end of life.

POSTER: 32

“A Rare case of Rhabdomyolysis associated with Novel Coronavirus Infection”

CATEGORY: Clinical Inquiry

AUTHOR(S):

Diana Palanker, MD

Manuela Noriega, DO; Jaime Diaz, MD PGY2; Iyad Baker, MD; Adam Atoot, MD

INSTITUTION: HMM Palisades Medical Center

Coronavirus disease 2019 (COVID-19), caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), was first reported in Wuhan, China in the late December 2019. COVID-19 mainly affects the respiratory tract. Mild muscle damage and increased creatine kinase (CK) levels have commonly been observed in Wuhan patient cohorts. Rhabdomyolysis is a life-threatening disorder that manifests with myalgia, fatigue, and hemoglobinuria; it can also manifest as acute renal failure. The inducing factors of rhabdomyolysis include autoimmune myopathies, septicemia, electrolyte abnormalities, substance abuse, or infection. Viral infections can lead to rhabdomyolysis. In a large series of COVID-19 patients, Guan et al reported two cases of rhabdomyolysis in non-severe cases. Likewise, Suwanwongse et al described a case of a patient with non-severe COVID-19 pneumonia with rhabdomyolysis as a presenting feature. In patients presenting with myalgias in the setting of COVID-19, diagnosis of Rhabdomyolysis versus Viral Induced Myositis becomes

challenging. However, rapid clinical recognition and appropriate treatment must be initiated promptly to reduce risk for serious complications. The corresponding case recounts a 31 year old male with past medical history of obesity who presented to the Emergency Department with excruciating pain in the upper and lower extremities bilaterally for one day. Patient had not worked out in a long time and had a strenuous work-out with a trainer the day prior. Symptoms were associated with dark urine. Otherwise, patient denied any other associated symptoms, including fever, chest pain, dyspnea or recent viral infections. In the hospital, he was found to have an initial CK level of 12,000. He incidentally tested positive for COVID-19. He had no pulmonary symptoms at the time of presentation. His O2 saturation was 96% on room air. Patient was admitted and given aggressive fluid hydration, however, CK levels continued to rise. He remained with persistent severe myalgia for 5 days. On day 5, myositis panel was obtained and patient was started on Solumedrol 125 mg followed by 60 mg twice daily given no improvement with aggressive hydration alone. After the initial dose of steroids, CK levels decreased to 7000. With the administration of the subsequent steroid dose, CK levels returned at 2000. Patient's myalgia improved significantly and he was discharged home on 40 mg of Prednisone daily with a taper regimen. Patient was seen in clinic on day 10 post discharge. Myositis panel found to be negative. At the time of his visit he did not report any residual symptoms, while on 20 mg of Prednisone daily. Given lack of autoimmune etiology, steroids were discontinued with repeat CK levels in 2 weeks. Patient was further instructed to follow up in 2 weeks to assess his clinical status at which time his CK level was found to be 66.

POSTER: 33

“BAM! COVID-OUT: Help is on the Way”

CATEGORY: Clinical Inquiry

AUTHOR(S):

Deshanki Pandya, MD

Joshua Raymond, MD, MPH, FAAFP, CMD; Sairah Johnson, MD; Leslie Berger, APN; Kevin Ly, MD; Jamie Cherian, MD

INSTITUTION: Rutgers RWJMS at CentraState

1. Introduction: Bamvanilimab is a recombinant neutralizing human IgG1K monoclonal antibody that binds to the spike protein of the SARS-CoV-2 virus and inhibits its attachment to the human ACE2 receptor. It has demonstrated antibody-dependent cell-mediated cytotoxicity on reporter cells following engagement with target cells which expressed the spike protein. This treatment is currently authorized for emergency use for patients with mild to moderate COVID-19 in adults and pediatric patients who are at high risk of progressing to severe COVID-19 and/or hospitalization.

2. Case description: We will discuss the case of an 81 year old female with advanced dementia, atrial fibrillation on anticoagulation, sick sinus syndrome with pacemaker who was admitted to the Manor for subacute rehabilitation and found to be COVID-19 positive. Patient met the eligibility criteria for Bamlanivimab infusion given that she had mild symptoms consisting of nonproductive cough and was not requiring oxygen. Patient was deemed to be high-risk due to her age for severe progression of disease. Patient tolerated the infusion without complications. Initial labs were pertinent for elevated inflammatory markers such as CRP, fibrinogen, LDH. We will continue to trend these labs to monitor for a response.

3. Discussion of practice guidelines: Current guidelines offer emergency use of Bamlanivimab to treat patients in the outpatient setting who have mild to moderate cases of COVID-19 and do not require oxygenation. A phase 2 clinical trial, BLAZE-1 showed a decreased viral load in patients who were treated versus those receiving placebo. Additionally, these patients were less likely to be hospitalized or have emergency room visits due to COVID-19 related reasons within 28 days of treatment. Administration should be done as soon as possible after positive results and within 10 days of symptom onset. Our patient received the infusion the day after positive results.

Conclusions/discussion: The World Health Organization reports data which suggests that 80% of infections are mild or asymptomatic, 15% are severe infection, requiring oxygen and 5% are critical infections, requiring ventilation. Bamlanivimab has emerged as an option of treatment for patients undergoing mild infections in an effort to prevent progression of disease. Prior to this, management consisted of supportive measures including Vitamin D, C, Zinc Sulfate and Melatonin and overall symptom management. The FDA has approved the use of Remdesivir for COVID-19, which is shown to be effective, however only for patients who are requiring oxygen and have more severe disease. Preliminary studies show that Bamlanivimab is beneficial early in infection and is the first form of medication available for patients with mild to moderate symptoms.

POSTER: 34

“To help or to harm? Isolating our Elderly during COVID-19 Pandemic”

CATEGORY: Community Project

AUTHOR(S):

Deshanki Pandya, MD

Joshua Raymond, MD, MPH, FAAFP, CMD

INSTITUTION: Rutgers RWJMS at CentraState

During the COVID-19 pandemic, social distancing and face masks were mandated to ensure safety of the general population. According to the CDC, the risk for severe illness increases with age, making the elderly most vulnerable. In the U.S., 80% of deaths associated with COVID-19 were adults 65 years or older. Social isolation is a public health emergency that was already evident in the geriatric population, now exacerbated due to the effects from the pandemic. Patients residing in skilled nursing facilities were then restricted to remain in their room without visitors or activities, drastically changing their daily routine. Ultimately, this can result in a physical stress response, increased inflammation and an impaired immune system. Studies have shown elevated pro-inflammatory markers, such as IL-6, CRP, fibrinogen in the elderly who were isolated. Lack of physical activity also leads to increased arterial stiffness, cardiac atrophy and dysfunction and increased oxidative stress and inflammation. Social isolation is associated with a significantly increased risk of premature mortality of all causes based on research studies spanning over 40 years. From a mental standpoint, there are higher rates of depression, anxiety and suicide. At The Manor, a skilled nursing facility and rehabilitation in Freehold, NJ, many interventions were implemented from the start of the pandemic to help this population survive this crisis. Volunteers participated in 'Sunshine calls' consisting of 15-20 minutes conversation with a resident regarding their hobbies. 'Freedom rides' allowed patients to experience fresh air and see roses blooming, after months of being confined to their rooms. It's Never Too Late (IN2L) tablets, user friendly for the elderly, were distributed to allow for communication between family members and telehealth visits for healthcare providers. Visitation Stations with plexiglass screens were arranged to allow "in-person" visits from family members, and thoroughly disinfected after each encounter. From January 2021 until present day, there has been a significant decline in the number of new NJ-wide LTC COVID-19 cases. Family medicine residents and students can engage in weekly wellness rounds, which will engage patients and provide face-to-face interactions. We can use the Geriatric Depression Score to further assess their response. b. We can conduct surveys for patient satisfaction, including questions regarding their physical symptoms, mood, appetite, and sleep. For comprehensive care, we can provide surveys to family members as well to assess on how they feel their loved one is doing and if they note any changes. c. Barriers to allow for proper care and support exist, especially in this population who may not have access to technology. As we learn to live in a world with COVID-19, there needs to be further consideration on guidelines towards adaption in this 'new normal'. It is imperative to find a balance to provide these patients with their fundamental human needs for companionship and community keeping in mind the physical and mental effects of social isolation in this population.

POSTER: 35

"Horticulture Therapy: Practice of Healing for the Elderly Population in Long Term Care Facilities"

CATEGORY: Quality Improvement

AUTHOR(S):

Krishna Parikh, MD

Joshua Raymond, MD, MPH, FAAFP, CMD

INSTITUTION: Rutgers RWJMS at CentraState

The world is aging at an unprecedented rate and individuals 65 years old and older will represent a significant majority of the population in the United States. Increase in life expectancies leads to an increase in prevalence of many chronic diseases in our societies. As individuals age, it becomes difficult to manage the co-morbid conditions and often can lead to complications requiring many elderly individuals to reside in nursing home facilities for adequate long-term care. There has also been an increase in hospitalized patients needing skilled nursing facilities to long-term care to manage their chronic conditions. However, obtaining care at long-term care facilities should not prevent these individuals from adequate mental stimulation and interaction with their surroundings. Especially in the setting of COVID-19, where many elderly individuals are not able to physically see their loved ones, it is imperative that they be provided with adequate stimulation and engagement in the activities that are offered to them at the facilities. Therefore, It has become more imperative to promote successful practices and strategies which are cost-effective, easily accessible, and a feasible activity for the aging population. Horticulture has been used as a means of therapy since ancient times. There is increasing literature supporting the therapeutic effects of nature on stress and healing. Horticulture therapy is used to improve physical activity, social skills, and engagement. Repetitive activities such as digging and watering along with observing plant growth have been found to bring stability and consistency in the lives of the elderly. It has been shown that spending time walking in the garden, with nature, brings about peaceful mindset, and leads to calmer behavior. It has been suggested that when elderly individuals witness the growth of their plants, it can lead to an increase in their confidence and enthusiasm thus motivating them to pursue more outdoor activities with nature. Not only does it provide a means mental and physical stimulation for the elderly, it also gives them an opportunity for emotional connections with their others taking part in the group activities. One of the benefits of horticultural therapy is that it allows them to work with their hands and connect with nature which really promotes stress relief and tranquility. Studies have shown that elderly individuals who participate in horticulture activities report they have improved and more restful sleep and experience calmness throughout the day. Moreover, this type of intervention has the potential to be community-based and can be sustained in nursing home facilities. Bringing horticulture therapy to residents of nursing homes truly promotes a sense of stability and consistency which provides them with a purpose. It, in turn, plays a large part in improving their quality of life.

POSTER: 36**“The effects of patient portal use on diabetes health metrics during the Covid-19 pandemic”****CATEGORY:** Research**AUTHOR(S):**

Niral Patel, MD

Robert Post, MD; Mario Maffei, MD

INSTITUTION: Virtua Family Medicine

Title: The effects of patient portal use on diabetes health metrics during the Covid-19 pandemic **Purpose:** Online patient portals allow patients to be more engaged in their overall healthcare. The benefits of online patient portals, including access to laboratory and imaging results and the ability to directly communicate with the healthcare team, can be particularly useful for improving the quality of life for patients with chronic diseases that require ongoing self management, such as diabetes. Previous studies have shown a positive association between online portal use and lower glycemic levels as well as diabetes medication adherence. However, the relationship between patient portals and other diabetes health metrics is unknown. This study will examine the association between online patient portal use and diabetes health metrics. **Methods:** Study design: An epidemiological cross-sectional study with a retrospective cohort. **Setting:** A large, suburban community health system. **Participants:** Patients age 21 and older with a known diagnosis of diabetes mellitus. **Primary Outcomes:** Proportion of participants with each health metrics completed (annual diabetic eye exam, annual diabetic foot exam, A1c completed within last 12 months, A1c < 8.0%, blood pressure < 140/90, statin use, and annual nephropathy screening or ACEI/ARB use). **Statistical Analysis:** Data will be obtained from the health system electronic medical record. Means will be calculated for continuous variables and proportions will be calculated for categorical variables. Data will be analyzed using the STATA software. **Results:** Our results show that there was a positive correlation with the use patient portals and diabetic quality metrics met. Patients using the portal were more likely to have their A1c and blood pressure at goal, completed an annual eye exam, were on a statin, and also have their nephropathy managed (either were already on an ACEI/ARB or had screening for urine microalbuminuria. There was also a positive correlation with patient portal use and the number of health metrics met with patients using the portal almost twice as likely to have met all five metrics when compared to patients who had no patient portal use. In terms of the demographic makeup of the patients using the portal, we found that there was a negative correlation with age and portal use. Patient who were non-white were also less likely to be using the portal, along with patients insured by Medicare or Medicaid. Given our findings, we can reasonably conclude that all diabetic patients should be encouraged to use patient portals especially minority patients and those on Medicare/Medicaid to help improve disease control.

POSTER: 37**“COVID-19 and Resident Wellness: The added stressors on top of an already extreme lifestyle”****CATEGORY:** Educational Program**AUTHOR(S):**

Meghan Pillai MD

INSTITUTION: Morristown Family Medicine, Atlantic Health System

This study was undertaken by a Family Medicine resident to elucidate the added stress of a global pandemic, on top of the already difficult lifestyle for a physician in training. Medical Residents work 60–80 hours a week depending on specialty and rotation within the specialty, with residents occasionally logging up to over 120 hours in a week. Since the pandemic began, focus has shifted to accommodate the unique needs of physicians and health professionals experience in heightened stress. By understanding the top concerns contributing to increased demand on the resident physician right now, health systems and organizations can adopt changes to meet those evolving wellness needs. This study took place via a questionnaire to determine the wellness residents felt prior, and during the pandemic, as well as highlighting the dominant stressors that made the lifestyle of a young physician in training, more difficult.

POSTER: 38**“Utility of early depression screening in patients with concussion”****CATEGORY:** Research**AUTHOR(S):**

Omid Rashidbaigi, DO

Geoffrey Sanyi, DO; Jonathan Torres, DO

INSTITUTION: Morristown Medical Center Family Medicine

Introduction: Depressive disorders are a relatively common sequela after concussions and are associated with poor functional outcomes and quality of life after injury. In addition to increasing suicide risk, post-concussion depression symptoms (PCDS) have been associated with poor cognitive performance. Furthermore, depression is a mediator between concussion and physical health problems and persistent concussive symptoms after injury. This research investigates whether formal screening for depression in post-concussion

patients can improve success rates of identifying depression at an early stage and decreasing the rate of long-term depression in these patients. If depression screening improves outcomes, it may revise standard of care and decrease length of time for patient to return to a normal functioning quality of life.

Methods: Chart review was conducted on 351 patients who were seen either on an initial concussion visit or follow up visit for concussion per billing codes. The time frame for these visits was between July 1, 2018- December 31, 2019. Criteria for depression screening included completed PHQ-2, with reflex to PHQ-9 per protocol if indicated.

Results: Of the 351 patients seen for concussion visits, only 6 patients were screened at the visits using PHQ-9. Of the 6 patients who were screened at these visits, 1 tested positive per PHQ-9 grading scale for depression. Interestingly, multiple patients were screened with depression screenings at visits months or even years later and found to meet criteria for depressive disorder.

Conclusion: The PHQ-2/PHQ-9 are quick and effective screening tools for depressive disorders. With the growing evidence that concussion and TBI are linked to depressive disorders, this screening test could prove to be an invaluable tool in expediting treatment and recovery. With only 1.7 % of the population screened with an appropriate screening tool such as PHQ and 16.67 % of this population screening positive for depression there is potential for early identification and management if use of PHQ is standardized.

POSTER: 39

“The Final Hit, Fibrillary Glomerulonephritis and End Stage Renal Disease”

CATEGORY: Clinical Inquiry

AUTHOR(S):

Kimyetta Robinson, MD

Daniel Brouder, MD; Ruchi Bhatt, MD; Kelly Ussery-Kronhaus, MD

INSTITUTION: HMH Ocean Medical Center

Learning Objectives: 1. To recognize the signs and symptoms of End Stage Renal Disease 2. To learn the initial evaluation of patients with Chronic Kidney Disease (CKD) 3. To learn about the diagnosis and management of Fibrillary Glomerulonephritis

Case Summary: A 61-year-old female with a PMH of a congenital atrophic kidney, Stage V CKD, and hypertension presented to the ED for generalized weakness, poor appetite and dysuria. She was advised to go to the ED by her nephrologist who received results of labs drawn 1-week prior revealing worsening renal function. Labs were significant for Creatinine of 8.04 mg/dL (0.61-1.24), compared to 1.81 mg/dL about one year prior, and nephrotic range proteinuria. A biopsy of the left kidney was done revealing immunofluorescence staining for IgG, C3, kappa & lambda suggestive of fibrillary glomerulonephritis. During this workup, the patient was also found to have a polyclonal gammopathy. EXAM: Vitals-BP: 165/86, HR: 63, Temp: 97.6. Patient was AAO x3, Heart RRR, Lungs CTAB, Abdomen soft, NTND, No peripheral edema. LABS: Hemoglobin 8.2 g/dL(12-16), WBC 6.7 (10*3/uL), Potassium 3.9 mmol/L(3.5-5.2), BUN 90 mg/dL (5-25), Creatinine 8.53 mg/dL (0.44-1.00), GFR 6 (>60), Troponin 1.65 ng/mL (<0.04), Magnesium 3.0 mg/dL (1.3- 2.5), Phosphorus 9.0 mg/dL (2.5-4.6), Urinalysis: Small Leukocytes, >500 mg/dL protein, Urine Culture: >100,000 CFU/mL E.coli. Given the patient’s clinical presentation and lab results, she was started on dialysis urgently. The patient was also treated for a UTI and anemia during her hospitalization. She improved clinically, and outpatient dialysis was arranged. She was discharged on hospital day 4.

Conclusion: The initial evaluation of patients with chronic kidney disease includes a full review of systems and medical history, with attention to exposure of nephrotoxins, diet and weight history. A full physical examination is necessary including review of current blood pressure. Laboratory evaluation should include serum electrolytes, fasting lipid panel, Hemoglobin A1C, urinalysis and urine albumin/creatinine ratio. Renal ultrasound is recommended to assess for structural abnormalities. Referral to nephrology is indicated for further evaluation of etiology of CKD, management of CKD complications, and for preparation of renal replacement therapy. Fibrillary glomerulonephritis is a rare disorder that leads to chronic kidney disease, characterized by immunoglobulin deposition in the glomerular basement membrane. Immunofluorescence microscopy is positive for IgG, C3, kappa and lambda light chains. Initially, fibrillary glomerulonephritis was thought to be idiopathic however approximately 30-50% of patients have a history of malignancy, monoclonal gammopathy, autoimmune disease, or infections. Therefore, patients with the condition should be screened for secondary causes. There are no therapies that have been shown to be beneficial. Patients may benefit from treatment of an underlying disorder. The focus of treatment in patients with idiopathic disease is determined by severity and complications of kidney disease, but ultimately revolves around prevention of progression to end stage renal disease.

POSTER: 40

“Obesogenic Food Environments in New Jersey”

CATEGORY: Research

AUTHOR(S):

Elena Sharma

Elizabeth Cerceo, MD; John Gaughan, MD

INSTITUTION: Cooper Medical School of Rowan University

Background: Availability of healthy food options relative to high-calorie options has been found to contribute to obesity rates. We examine the relationship between food environment, obesity, and health-related behaviors within the state of New Jersey. We hypothesize obesity rates are inversely proportional to the quality of food environment and proportional to unhealthy behavior.

Methods: Using data from the CDC PLACES project for obesity and health-related behavior rates, we conduct a cross-sectional analysis of the state at the census tract level. We use the CDC measure of food environment quality, the Modified Retail Food Environment Index (mRFEI), which indicates the proportion of healthy food options relative to total food options. A higher number indicates more high-quality retailers while lower numbers indicate either a lack of retailers or an overabundance of high-calorie options. We use Pearson correlation coefficients to illustrate the strength of the relationships.

Results: We find a weak but statistically significant negative correlation between mRFEI and obesity rate ($r=-0.13$; $p<0.005$). Obesity instead correlates positively with the following unhealthy behaviors: Current Smoking ($r=0.839$; $p<0.0005$); Lack of physical activity ($r=0.767$; $p<0.0005$); Sleep <7 hrs/night ($r=0.819$; $p<0.0005$)

Discussion: Obesity is a complex and multi-factorial public health issue, but our findings suggest food environment policies have a role in improving conditions on a community level. Our findings regarding health-related behaviors suggest that factors thought to contribute to an obesogenic environment cluster and should be addressed in tandem. Other community characteristics such as education, access to outdoor spaces, and poverty should be studied as potential targets for improving public health. The food environments of other states and on a national level should be examined for similar trends. A limitation of the research is that the data was pulled from five years of surveys. There is some variability in the number of food retailers, population size, and prevalence of obesity across that time period. We hope that a deeper understanding of obesogenic environments will aid in tailoring patient education and resources and addressing barriers to weight loss.

POSTER: 41

“Correlation of Patient Blood Type with Patient Related Outcomes, Length of Stay, Severity of COVID-19 Disease, and D-Dimer elevation. A useful prognostic indicator?”

CATEGORY: Research

AUTHOR(S):

Bijal Sheth, MD

David Rodriguez, MD; Shideh Doroudi, MD

INSTITUTION: St. Joseph's University Medical Center- Family Medicine

Introduction: The association between blood type and disease state has been a topic of interest in the medical literature for decades. From 1977-2003, several studies have linked blood type O with increased likelihood of becoming infected with cholera, Helicobacter pylori and even norovirus.¹⁻² As the COVID-19 pandemic emerged, early research from China, that was not peer reviewed, suggested a possible link between blood type O and lower risk of COVID-19.² Over the course of the pandemic, several studies have shown mixed findings between blood type and SARS-CoV-2 PCR test positivity, risk of intubation and death among various other findings. Given the general lack of tests that provide clinicians with early prognostic insight, patient blood type remains an interesting topic of research. Herein, we sought to determine if blood type correlated with patient outcome, length of stay (LOS), severity of disease or D-Dimer level at our institution.

Methods: A retrospective electronic medical record chart review of 500 patients admitted to St. Joseph's University Medical Center, Paterson, NJ and Wayne, NJ from January 1st, 2020 to June 1st, 2020. The studied population included both sexes, all ages, and patients who had a positive SARS-CoV-2 PCR test. Additionally, patients who were PCR negative for SARS-CoV-2 but had a diagnosis of COVID-19 were included in the analysis. Excluded patients were those who either had no COVID-19 diagnosis, those who did not have serology, D-Dimer level, clinical manifestations consistent with COVID-19, or those who did not have a documented blood type in their medical record. Patient admission disposition, supplemental oxygen requirement, length of stay, outcome, admission D-Dimer, maximum D-Dimer and blood type were obtained from the electronic medical record. Admission disposition “severity” was based on acuity of location (medical floor, telemetry, ICU) as well as severity of oxygen supplementation (nasal cannula, oxymask, high flow nasal cannula, non-

invasive positive pressure ventilation, intubation). Outcomes were classified as either discharge or death after a measured length of stay in days. The data was analyzed using validated statistical methods (chi-squared, ANOVA).

Results: Our results demonstrated that blood type did not significantly correlate with severity of COVID disease (p-value=0.26, Chi-square test for contingency table), was not significantly related with outcome (p-value=0.82, Chi-square test for contingency table) nor was it significantly associated with LOS (p-value=0.92, ANOVA F test). Furthermore, no one blood type significantly correlated with D-Dimer value (p-value=0.34, ANOVA F test).

Conclusion: After an analysis of 500 patient charts in a retrospective chart review, we conclude that blood type does not correlate with COVID-19 disease severity, outcome, length of stay or with D-Dimer values.

POSTER: 42

“Comparing Utilization of Family Physicians to OBGYN in providing Women’s Health Care”

CATEGORY: Research

AUTHOR(S):

Kelissa Shillingford, MD

Robert Post, MD

INSTITUTION: Virtua Family Medicine

Purpose: Well women’s care is defined as routine gynecological and preventive care. Depending on the availability of physicians as well as patient preference, there is variability in parts of the United States as it pertains to women’s health care. Therefore, the purpose of this study is to assess and compare the utilization of Family Medicine (FM) versus Obstetrics/Gynecology (OBGYN) in providing well-women care throughout the United States.

Study design: Secondary data analysis of the 2007-2016 National Ambulatory Medical Care Survey (NAMCS).

Participants: Office visits for female patients ages 21-74 who presented to outpatient offices for preventive gynecologic care (defined as visits where one of the top 3 reasons for the visit was “gynecological examination”) were included. Visits were excluded if the patient was pregnant at the time of visit, or did not have a visit with FM or OBGYN.

Outcome measures: The primary outcome measure was the proportion of preventive gynecologic visits performed by FM and OBGYN. Analysis: Means were compared by the 2-sample t-test. Proportions were compared using chi-square. To determine the odds of a patient seeing FM versus OBGYN, when controlling for demographics and other potential confounding factors, binary logistic regression was performed. All data was analyzed using STATA 13.1. Specific survey analysis functions were used to account for the complex sampling and weighting factors of the NAMCS.

Results: 5,338 visits met inclusion and exclusion criteria, which represents 164,233,545 ambulatory visits. A larger proportion of patients went to OBGYN for gynecological visits (84.6% vs 15.4%, p<0.001). FM was more likely to be seen if the practice was in a rural region (OR 3.22, 95% CI 1.84-5.63, p<0.001), if the patients had chronic conditions (OR 3.34, 95% CI 2.40-4.64, p<0.001), or if the doctor was the patients PCP (OR 55.5, 95% CI 32.0-96.2, p<0.001). Visits with FM were longer than visits if OBGYN (mean (SE) 23.8 (1.5) vs 20.6 (0.5) minutes, p=0.008). OBGYN more frequently performed pelvic and breast exams. FM was more likely to order HIV testing and provide diet, exercise, and stress management counseling. There was no difference in mammograms, bone density scans, and chlamydia tests ordered, and there was no difference in pap smears performed.

Conclusion: Family Medicine is underutilized in providing well women’s care, especially in the northeast and non-rural areas. Furthermore, the well-women care provided by FM in this sample was more complete and evidence-based compared to OBGYN. Further work into specific patient factors regarding who they chose for well-women care and why needs to be addressed.

POSTER: 43

“Improving timeliness and quality of discharge summaries in a family medicine residency”

CATEGORY: Quality Improvement

AUTHOR(S):

Peter Sugarbaker, DO

Stephanie Matza, DO; Eugene Decker, DO

INSTITUTION: St. Luke's Warren Family Medicine

Background: The discharge summary reviews the patient's hospital course, current health status and follow up plan. This task is the responsibility of our inpatient team, made up of 2 residents. Patients are scheduled for transition of care appointments within 1-2 weeks, at which time the clinic resident assesses the patient's hospital stay by viewing the discharge summary and follows up necessary tasks. Multiple obstacles exist that interfere with the timeliness and quality of discharge summaries. These include their time-consuming nature, low priority for completion, cumbersome method for incorporating the discharge med rec into note template and lack of a standardized approach to writing the hospital course, the most important and onerous section. Poor quality or incomplete DC summaries and delay in completion can cause a backflow of work for both the inpatient team and clinic resident in addition to poor patient care. The purpose of this project was to improve the timeliness and quality of discharge summaries, thereby improving workflow and continuity of care.

Design/Methods: Using a PDSA methodology, a team of 2 residents identified methods to measure both the timeliness and quality of discharge summaries. Timeliness was measured by discharge summary latency, defined as the time between the DC order being signed and the DC summary being signed, and the number of DC summaries signed before sign out. Quality was measured by analyzing the number of DC summaries using a problem-based, paragraph format for the hospital course in addition to the number of DC summaries that had a complete discharge med rec. 112 DC summaries were analyzed and baseline data was collected. 2 PDSA cycles were then undertaken as outlined below. PDSA 1: A powerpoint presentation was given to the residents, outlining the new discharge summary workflow (DC summary worked on by multiple residents throughout hospital stay, rather than written on day of discharge), format (problem-based, paragraph form) and incorporation of a new EMR quick phrase for rapid medication reconciliation. PDSA 2: A second lecture was given 2 months later, with review of FAQ's regarding the new discharge process/documentation and feedback on a sample of discharge summaries written since the initial presentation. A discharge summary tip sheet was also placed on the wall in the physician lounge at this time.

Results: Data was collected from 92 DC summaries from the 1st PDSA cycle and 98 DC summaries from the 2nd PDSA cycle. DC summary latency was reduced by 52% (4:27 > 2:09). DC summaries signed before sign out increased by 26% (67% > 93%). The amount of DC summaries written in a problem-based, paragraph format increased by 64% (0% > 64%). The amount of DC summaries with completed medication reconciliation increased by 7% (93% > 100%)

Discussion: Timely and effective DC summaries are vital to ensure effective transition of care for patients once they leave hospital as well as efficient workflow for residents. Our QI project demonstrates the utility of PDSA methodology in improving quality and timeliness of DC summaries through resident education/feedback and improvement in workflow efficiency.

POSTER: 44

"A High Pressure Situation: A Case Report"

CATEGORY: Clinical Inquiry

AUTHOR(S):

Peter Sugarbaker DO

Brett Keller DO

INSTITUTION: St. Luke's Warren Family Medicine

History: A 17-year-old high school quarterback suffered trauma to his right lower extremity when he was tackled and his right leg landed on an opposing player's facemask. He was initially able to jog off of the field with a slight antalgic gait. He was examined by the physician who noted tenderness, swelling and erythema of the anterolateral leg and ice was applied. Over the course of 20 minutes, he developed severe pain, paresthesias and swelling of the RLE. EMS personnel were promptly alerted and the patient was subsequently transferred to the local ED for further evaluation and management.

Physical Exam: MSK: swelling, erythema and tenderness of anterolateral aspect of RLE. Firm and tender anterior and lateral compartments. ROM about the ankle limited due to pain with significant pain on passive ankle plantar flexion. MST 4/5 in ankle dorsiflexion/big toe extension, 5/5 in all other movements about the ankle and foot. DP/TP pulses 2+, cap refill < 2 seconds. Gross sensation intact throughout all dermatomes with diminished 2 point discrimination in web space between 1st/2nd toes on the right compared to the left.

Differential Diagnosis: Acute compartment syndrome Fibula fracture Soft tissue contusion Bone contusion Neuropraxia of peroneal nerve Labs/Imaging CMP was within normal limits. CBC showed WBC of 14.1. A CK was found to be elevated at 342. X-ray of the tibia and fibula showed no osseous abnormality. Stryker needle measurements showed compartment pressures of 30 and 32 in the anterior and lateral compartments respectively.

Final/Working Diagnosis: Acute compartment syndrome (ACS) of right lower extremity.

Discussion: This case features an uncommon presentation of ACS, a rare condition with an annual incidence of 3.1 per 100,000. It most commonly arises from high impact trauma and is associated with fractures 83% of the time. In the absence of significant trauma, ACS is more easily missed. Fasciotomy within 4 hours nearly guarantees full return to function, while delay beyond 8 hours portends much higher morbidity. For the sideline physician, this case highlights the importance of maintaining a high index of suspicion for the diagnosis of ACS in the setting of a seemingly innocuous injury and the value of efficient communication between the physician, athletic trainers and EMS personnel to ensure prompt treatment.

Outcome: The patient was transferred from the local ED to a tertiary care facility. He was taken to the OR for urgent right anterior and lateral compartment fasciotomy and wound vac application, which occurred within 3 hours of leaving the field. He was taken back to the OR 2 days later for washout and wound closure. Return to activity/follow up Patient's immediate postop course was without complication. He underwent 6 weeks of formal physical therapy and subsequently transitioned to working with his school athletic trainer and strength coach for an additional 8 weeks. He was cleared to return to full activity at 14 weeks postop and did participate in track and field in the spring without problems.

POSTER: 45

“Utilizing Inter-Professional Teaming To Reduce Inpatient Length of Stay”

CATEGORY: Quality Improvement

AUTHOR(S):

Julie Tang, MD

K. Ussery-Kronhaus, MD, C. Bader, DO; M. Halari, MD; J. Tang, MD, J. Bland, MSH, RN, K. Rasinya, LCSW, CCM; K. Kronhaus, MD; P. Cheriya, MD; W. Mink; G. Filice, MD

INSTITUTION: HMH Ocean Medical Center

Aim/Purpose/Objective: Decrease length-of-stay (LOS) by 1 day at Hackensack Meridian Health Ocean Medical Center through utilization of enhanced interpersonal communication.

Summary: The hospital and health system track on inpatient length-of-stay (LOS) is an important measure of its payment and benchmark of patient care when compared with other hospitals in the nation. The diversity, clinical complexity and resource needs of all patients in the hospital can be calculated by the case mix index which summarizes the severity-diagnosis related group weight for each discharge and divides it over total number of discharges. Ocean Medical Center identified LOS as a network initiative that would involve collaboration among different departments within the hospital. The interventions implemented include: network-wide Epic EHR with use of rounding tool visible to management and physicians, resident and faculty education and quaternary re-education emphasizing the use of the tool, and resident education about discharge time with case management. These interventions launched in March 2020 after baseline collection from November 2019 to February 2020. The goal was to decrease LOS by one day through utilization of enhanced interpersonal communication. There were periodic meetings with case management and patient progression department to identify current methods, goals and needs. There were two measurements of the intervention to help identify how interpersonal communication worked to decrease LOS. One measurement was the CMI adjusted LOS for Family Medicine vs. Internal Medicine (the control group). The second measurement was the Hospital Consumer Assessment of Healthcare Providers (HCAHP) discharge survey questions given to patients.

Conclusion: CMI adjusted LOS for the intervention group reduced 0.5 days compared to a 0.23 day reduction in the control group. While this did not meet the 1.0 goal of the network, it is still a significant reduction. Length of Stay reduction is a network initiative that involves teamwork and collaboration. The initiative allowed us to develop a method of synchronous interdisciplinary rounding. There was improved communication and teamwork between Family Medicine Teaching Service, Case Management, Patient Progression resource departments. Most importantly, our project was sustainable throughout the COVID-19 pandemic. Through it is difficult to assess the sustainability of the change past the project time line, the CMI for both groups is consistent and both were impacted by the COVID-19 pandemic. The rounding tool is available to all physicians and takes minimal time to input discharge plan/barriers for synchronous communication with case management. Due to the ease of participation and implementation of the intervention even it requires the participation of multiple departments, the sustainability of the project is promising. The implement of more resident education as well as involvement with office of patient experience to improve HCAHP scores can be beneficial to the the goal of reducing inpatient length-of-stay.

POSTER: 46

“The Winding Road to Aplastic Anemia”

CATEGORY: ResearchResearch

AUTHOR(S):

Julie Tang, MD

William Lerner, MD FACP; Kimberly Odell, MD; Kenneth Kronhaus, MD

INSTITUTION: HMH Ocean Medical Center

Case Summary: A 44 year-old male presented to ED for shortness of breath, palpitations and headache. Labs revealed severe pancytopenia. The patient was not able to provide much information, but stated he had a “rare blood disorder.” Bone marrow biopsy done years ago did not show any specific diagnosis. The on-call hematologist/oncologist was consulted and agreed with platelet and blood transfusion with plan for bone marrow biopsy. Patient was placed on neutropenic precautions and closely monitored. He was started on granix after the bone marrow biopsy. In correspondence with the result of the biopsy and flow cytometry, the working diagnosis was T-Large Granular Lymphocytic Leukemia (TLGL). There were plans to start the patient on methotrexate, however, T-cell clonality studies were negative. Next generation sequencing (NGS) panel for MDS/CMML disorders was negative. STAT3 gene (encodes for T cell maturation) mutations, which can be seen in 30-40% of T-LGL leukemia, was also negative. Patient returned a second time for left knee swelling and pain. Orthopedics decided to hold off knee aspiration at the time and he was discharged after transfusions. The knee pain responded to steroids but the patient’s pancytopenia remained unchanged. Patient went for a second opinion at Cornell University who agreed with the initial working diagnosis but wanted to do another biopsy. The second biopsy was done and showed a markedly hypocellular bone marrow with no evidence of acute leukemia. The virtually absent megakaryocytes and lymphocytosis bone marrow led to the diagnosis of aplastic anemia. He started cyclosporine and Promacta along with Bactrim for prophylaxis.

Conclusion: The differential diagnosis for an adult presenting with pancytopenia can be divided into bone marrow infiltration/ replacement, bone marrow failure and bone marrow destruction/sequestration/redistribution. In this patient, the original working diagnosis was TLGL. TLGL is bone marrow infiltration of large granular lymphocytes. However, further evaluation of the diagnosis revealed that the patient’s T cell studies were negative. A second biopsy was done at another marrow site which showed a markedly hypocellular bone marrow. This goes to show the heterogeneity of bone marrow. It is possible for a bone marrow biopsy done at one site showing a different result from another site. Aplastic anemia is a type of bone marrow failure that affects all three cell lines. It is rare and many times, a specific cause is not identified. Some of the causes include drugs, radiation, toxins and viruses. This patient had mildly elevated CMV and EBV antibodies and negative HIV and hepatitis panel. The patient denied any radiation in the past. In medicine, we may be led towards one diagnosis but often have to shift our thinking process along the way when new results arrive or further studies are done.

POSTER: 47

“Adequacy of Screening for Substance Use Disorder in the Primary Care Setting”

CATEGORY: Research

AUTHOR(S):

Thai Tran, MD

Jennifer Amico, MD; Melissa Encarnacion, MD

INSTITUTION: Rutgers RWJ Medical School

Purpose: Adequate screening for substance use disorder (SUD) allows providers to identify those who are at risk or currently suffering from SUD and intervene at an appropriate time to offset its detrimental effects. This study aims to evaluate how well routine screening during adult physical exam visits identifies those with substance use as compared to the World Health Organization Alcohol, Smoking and Substance Involvement Screening Test (WHO ASSIST) screening tool.

Methods: This is a cross-sectional study, demonstrating the difference in documentation of substance use for one patient population at an urban clinic in NJ receiving 2 screening methodologies. We will compare documentation of substance use in the EMR to a gold standard screening tool, the WHO ASSIST survey. The study population of 400 patients will be selected from a retrospective chart review of all patients who have received routine primary care at the family medicine office over a 3-month period. We will contact them by phone to recruit them to complete the ASSIST survey tool. We will then compare the prevalence of SUD as documented by the EMR to the prevalence found when using the ASSIST survey, and identify characteristics associated with a greater discrepancy in screening methodologies.

Results (anticipated): We anticipate that there will be a greater difference in documentation of alcohol and illicit substance use than documentation of tobacco use. We anticipate that there may be a difference in screening by age, with younger patients more likely to be screened during routine visits than older patients.

Conclusions (preliminary data/results or anticipated): This study will allow us to identify the gaps in routine SUD screening, as well as which populations are less likely to receive adequate screening during routine wellness visits. Screening and identifying those with substance use disorder will allow providers to intervene earlier and offer treatment soon to limit morbidities and social consequences.

POSTER: 48**“Barriers Towards Low Dose Computed Tomography for Cancer Screening among Primary Care Providers in New Jersey”****CATEGORY:** Research**AUTHOR(S):**

Thai Tran, MD

Stacy Davis, PhD, MPH; Johanna B Serrano, BS; Jeanne M. Ferrante, MD, MPH, FAFP; Michael Steinberg, MD, MPH, FACP; Shawna V Hudson, PhD; Anita Y. Kinney, PhD, RN

INSTITUTION: Rutgers RWJ Medical School

Current screening recommendation for patients at high-risk of lung cancer is annual low-dose computed tomography (LDCT). Patient eligibility criteria for LDCT screening is aged 55-80 years old, more than 30 pack- year history, and current smoker or quit in the past 15 years. Despite demonstrated efficacy in the National Lung Screening Trial (NLST), annual LDCT screening rates remain low. To identify and understand obstacles within the healthcare system that contribute to LDCT screening rates, qualitative interviews were conducted with 21 primary care providers (PCP) in New Jersey. Data revealed that PCPs believed LDCT screening would lead to early detection of lung cancer. Although enthusiastic, PCPs had barriers to recommending or talking to their patients about LDCT. PCPs identified lack of PCP knowledge of patient LDCT eligibility criteria as the driving factor of low recommendation of LDCT contributing to suboptimal national screening rates. PCPs also elucidated key patient barriers contributing to LDCT screening rates including limited awareness and knowledge of LDCT, cost/insurance, and fear of test results to undergo LDCT. PCP suggested EMR alterations, multi-disciplinary team approaches, and monthly screening goals as clinical implementations to improve nationwide screening rates. In order to combat low LDCT screening rates, various barriers perceived by PCPs must be addressed to allow further understanding for investigations into clinical based implementations.

POSTER: 49**“Cutaneous Reactions Following COVID-19 Vaccination: A Case of Lichen Planus and Review of the Literature”****CATEGORY:** Clinical Inquiry**AUTHOR(S):**

Annie Truss, MD

Jennifer Amico, MD, MPH

INSTITUTION: Rutgers Robert Wood Johnson University Hospital

Learning Objectives: 1. Familiarize providers with possible cutaneous reactions seen after COVID-19 vaccination 2. Provide reassurance to healthcare providers counseling patients about the COVID-19 vaccination, particularly those who may have had a cutaneous reaction following the 1st dose

Case Summary: A 44-year-old female with past medical history of lichen planus 10 years ago in remission presents with 4 weeks of an intensely pruritic rash. It started on her ankles but quickly spread in small clusters all over her body over the course of a few days. Initially, she denied any new exposures including products, detergents, or outdoor activity but later realized that she had her 2nd COVID-19 vaccine a few days prior to this eruption. Exam was notable for >25 violaceous coalescing papules and plaques on the bilateral upper and lower extremities and trunk with varying degrees of excoriation; and oral erosions with fine white reticular structures on the bilateral posterior buccal mucosa. The diagnosis of lichen planus was made clinically and she was treated with topical triamcinolone 0.5% and later systemic steroids due to the severity of pruritis. Given the timing, it is likely that her lichen planus recurrence was triggered by the COVID-19 vaccine.

Discussion: This case is similar to prior reports including a case report by Corbeddu et. al in which a patient with previously controlled atopic dermatitis experienced a new flare following COVID-19 vaccination requiring the use of oral steroids. As COVID-19 vaccinations are administered across the globe, reports of cutaneous reactions are rapidly emerging and it is important for family medicine providers to remain informed. Clinical trial data has demonstrated local injection site reactions to be the most common cutaneous side effect for both the Pfizer/BioNTech (BNT162b2) and Moderna (mRNA-1273) COVID-19 vaccines. Other cutaneous reactions observed in the Moderna clinical trial included vesicular, urticarial, exfoliative, and maculopapular rashes. Since wide-spread vaccination efforts have begun, new literature, including a registry of 414 cutaneous reactions following COVID-19 vaccination, has been published. The most common cutaneous reactions following COVID-19 vaccination include: erythematous local site reaction, delayed large local reaction (also referred to as “COVID-arm”), urticaria, morbilliform rash, erythromelalgia, and flares of previous dermatologic condition. It is important to note that not all patients who experience symptoms after the first dose will also develop symptoms following the second dose. It is particularly important to keep this in mind for patients who experience urticaria 4 hours or more following vaccination. Urticaria >4 hours after injection is not considered an immediate hypersensitivity reaction and thus should not preclude patients from receiving a second dose **Conclusion:** In general, a wide variety of cutaneous reactions have been reported following COVID-19 mRNA vaccination. The

majority of reactions occur within 5-10 days of vaccination and are mild and self-resolving. Urticaria >4 hours after injection is not a contraindication to a 2nd dose and patients with a history of chronic skin conditions should be counseled regarding the possibility of flare however, the frequency at which these flares occur is not defined.

POSTER: 50

“Association of cancer screening and acculturation in Hispanic patients in the United States”

CATEGORY: Research

AUTHOR(S):

Puja Turakhia, MD

Lauren Lucente, PsyD; Robert Post, MD

INSTITUTION: Virtua Family Medicine

Purpose: To examine national rates of preventive care utilization among Hispanic patients who are English speaking (acculturated) versus those who are Spanish speaking (non-acculturated).

Study Design: Cross sectional study using surveys from Behavioral Risk Factor Surveillance System (BRFSS) from 2014, 2016, 2018.

Setting: Participants of the BRFSS surveys in 50 states.

Participants: Adult patients who identify as Hispanic between age 21-75 years old. **Primary Outcomes:** Proportion of patients in each language group who each had preventive care measure up to date (Colorectal, Cancer, and Breast cancer screenings). colorectal cancer, breast cancer, and cervical cancer screenings done.

Statistical analysis: Proportions compared by chi square. Multivariate logistic regressions for odds of preventive measures controlling for demographics. Data analyzed using STATA 13.1 software.

Results: For Hispanic participants aged 50-74 years old, when controlling for all other factors, Spanish speaking patients were less likely than English speaking participants to be up to date. Older patients, women, those with PCPs, those with higher levels of education, and higher incomes were more likely to be up to date. No difference existed between English speaking and Spanish speaking Hispanic participants with regard to breast cancer screening. Hispanic women between the ages of 21-64, were more likely to have had a pap smear if they spoke Spanish, if they were younger, white, had a PCP, and their income was greater than \$25,000.

Conclusions: The Hispanic population is one of the fastest growing ethnic groups in the U.S, accounting for approximately 60.6 million people in 2019. Healthcare disparities exist between Hispanic and non-Hispanic people in the United States. Hispanic patients underutilize health care services, with acculturation being a major factor. Patients who speak Spanish instead of English may have a harder time accessing services. Based on the results of this study, further research could focus on studying colorectal cancer screening in Spanish-speaking Hispanic men to help understand the disparities.

POSTER: 51

“Performing Facility-Wide Testing and Reducing Spread of SARS-CoV-2 in Nursing Homes/LTC Facilities”

CATEGORY: Research

AUTHOR(S):

Raahi Upadhyay, MD

Jacey Pudney, MD; Maria Ciminelli MD, FAAFP; Zeeshan Khan MD, FAAFP, CMD; Joshua Raymond MD, MPH, FAAFP; Hammad Abdelquader MD; Anand Shah, MD; Shalena Islam, MD; Mahvish Qazi, MD; Robert Kim, MD; Jamie Cherian, DO; Sydney Asselstine, MD

INSTITUTION: Rutgers RWJMS at CentraState

Long-term care facilities (LTCF) include skilled nursing, assisted or senior living, and group homes and/or board and care facilities. As LTCFs typically serve older individuals with chronic health conditions, residents of LTCFs are at greater risk of developing severe disease from COVID-19. The COVID 19 virus that has been expanding in the world extensive morbidity and mortality especially in the elderly population. In the US Adults ≥ 65 y/o made up, 35% of cases, 45% of hospitalizations, 53% of ICU admissions, 80% of deaths The greatest risk for severe illness from COVID-19 is among those aged 85 or older. It is important to follow CDC guidelines in LTC facilities to prevent the spread of COVID. There are many core practices that all facilities should follow such as assigning individuals with training in infection control to provide on site management. All COVID-19 cases should be reported and all residents, healthcare personnel, and visitors should be educated about COVID-19. Education should include symptoms as well as review modes of protection the facility is using and the restrictions that are in place. If all core practices and guidelines are followed, there should be a decrease in exposure and spread of COVID since this virus has shown to cause poor outcome in individuals of all ages especially in LTC facilities given other multiple comorbidities they may have.

POSTER: 52

“Increasing Cervical Cancer Screening Rates”

CATEGORY: Quality Improvement

AUTHOR(S):

Raahi Upadhyay, MD

Jacey Pudney, MD; Jamie Cherian, DO; Shalena Islam, MD; Meetali Patel, MD; Tomi Olaniyan, MD; Akanksha Saxena, MD; Resham Khan MD; Sairah Johnson, MD; Maria Ciminelli, MD; Zeeshan Khan, MD; Hammad Abdelquader, MD; Joshua Raymond, MD; Taru Sinha, MD

INSTITUTION: Rutgers RWJMS at CentraState

Preventive care is an important part of medicine especially part of family medicine. There are many conditions that can be prevented with proper screening such as colon cancer, breast cancer, and cervical cancer. Our QI project this year involves cervical cancer screening and increasing the rate of Pap smears in our current patient population. Screening methods used to find cervical changes that may lead to cervical cancer include the Pap test and human papillomavirus (HPV) testing. Such screening tests may find cancers earlier, when they are more easily treated. Women who have never been screened face the highest risk of developing invasive cervical cancer. The U.S Preventive Services Task Force (USPSTF) recommends screening for cervical cancer with the Pap test alone every 3 years in women aged 21-29 years. In women aged 30-65 years, the USPSTF recommends the Pap test alone every 3 years of HPV testing, with or without Pap co-testing, every 5 years. Through review of our practice's cervical cancer screening in women aged 21-64, it was evident that a large number of patients over the age of 21 had not received a Pap smear and women over the age of 35 had not received a Pap smear with HPV co-testing or majority of patients had not followed up with routine screening. A number of factors have been associated with lower rates of cervical cancer screening, including low income, less education, and a lack of health insurance. Given we are part of a federally qualified health center, many of our patients fall into these categories which explains why rate of screening is low. To improve and increase screening in our practice, we made small pap cards, similar in size to a credit card which can easily fit in a wallet; these cards were printed in both English and Spanish. The cards include the patient's name, age, last Pap smear date, results of the pap+HPV testing, and a future date for next one. We have begun giving these cards to all women that come in and are over the age of 21 and schedule them for a pap before they leave if they are due for one. By using these cards we are hoping to help patient's not only remember to come in for their Pap smear and HPV testing but also increase awareness and importance of cervical cancer screening. People are more likely to follow through and remember when having something tangible to remind them and we are hoping the pap cards will do just that. In a few months we will run the data again and hope to at least increase our screening by 10% with hope to increase more over time. Screening can reduce deaths due to cervical cancer and we hope to continue to increase our screening rates.

POSTER: 53

“Incidence of Gastrointestinal Bleed (GIB) in COVID-19 Patients Treated with Anticoagulation Based on D-dimer Levels”

CATEGORY: Research

AUTHOR(S):

Suey L Wong Urena, MD

Ivan Jakimovski MD, MPH; Shideh Doroudi, MD

INSTITUTION: St. Joseph's University Medical Center- Family Medicine

Goal: Our goal was to investigate the anticoagulation protocol in hospitalized COVID-19 positive patients and its impact on the incidence of GIB in an acute care hospital setting.

Methods: A retrospective analysis was done on COVID-19 positive patients hospitalized from 3/1/2020 to 5/31/2020. Patients with d-dimer ≥ 5 were started on a therapeutic anticoagulation. Those with d-dimer < 5 but ≥ 2 were treated with half therapeutic anticoagulation. Only those on Heparin or Lovenox were included.

Results: The incidence of GIB was 0.79% in our sample population (507 patients). 3 of 139 patients receiving Heparin experienced GIB compared to 1 of 368 given Lovenox. In 354 patients with d-dimer < 5 , 1 had GIB. In 153 patients with d-dimer ≥ 5 , 3 had GIB. Based on logistic regression, GIB is significantly related with length of stay (p value = 0.000476) and days of anticoagulation before bleed (p value < 0.001). Based on Fisher exact tests, GIB is not significantly associated with sex (p value = 0.6435), ethnicity (p value = 0.1668), D-dimer level (p value = 0.08422), and anticoagulation type (p value = 0.06472). However, GIB is significantly associated with MICU transfer (p value = 0.001902). **Conclusions:** The use of Lovenox or Heparin in COVID-19 positive patients, admitted to an acute care hospital, did not significantly effect on the incidence of GIB.