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Implementation of Point-of-Care Diabetic Retinal Exams Using Autonomous AI in a Federally Qualified Health Center

POSTER: 1
CATEGORY: Research, Physician
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INSTITUTION: Zufall Health Center

Diabetes causes vision threatening complications. To identify patients at risk, Zufall Health used FDA-cleared autonomous AI technology and retinal cameras at point-of-care. We were able to significantly increase access to diabetic retinopathy screening. Implementing point-of-care testing was associated with increased completion of DREs.

Background: Diabetic retinopathy (DR) and diabetic macular edema (DME) are well established complications of diabetes mellitus (DM). Across the nation, about one in three people with diabetes has DR, the leading cause of preventable blindness in the US. Early detection is critical, and current standard of care is for an annual diabetic retinal examination (DRE). Zufall Health Center is a Federally Qualified Health Center (FQHC) serving a low socio-economic patient population with low rates of completion of recommended annual eye examinations. We hypothesized that by eliminating barriers and using an FDA approved autonomous AI technology (IDx-DR®) to bring the DRE to point-of-care, completion of this exam would increase. Design: Pre-post single site prospective study. Method: All patients with known DM >22 years of age were identified. Patients were excluded if they had a documented DRE in the past 12 months. Staff contacted eligible patients and offered an appointment for the DRE to be completed at their next DM visit. Additionally, providers identified eligible patients at time of DM visit and added them for immediate testing. As part of the screen, four retinal images were captured and run through the AI software. Point-of-care results were provided without dilation or need for specialist oversight. For those identified with more than mild DR or DME, or who had a non-diagnostic examination, prompt referrals were made to an eyecare specialist. Results: From April 2021-January 2022, 161 patients were screened using the AI software, resulting in 80 negative screens, 51 nondiagnostic examinations and 30 patients testing positive for diabetic retinopathy. None of the patients screened had previously been up to date with their DRE. In total, 49.7% of patients screened negative and were able to avoid a referral to ophthalmology. Discussion: Implementing AI point-of-care testing was associated with increased completion of DREs at an FQHC. Patients testing positive or with non-diagnostic examinations received immediate referrals allowing for prompt attention and potentially vision saving treatment. The identification of end organ damage also provides crucial feedback for the patient and medical team regarding the need for intensifying or improving overall DM care.

CADASIL: A familial stroke syndrome that plagues the young

POSTER: 2
CATEGORY: Clinical Vignette, Physician
AUTHOR(S: Danielle Carcia DO
INSTITUTION: Capital Health

CADASIL is a rare autosomal dominant condition which predisposes to migraine, stroke and early dementia which is often misdiagnosed as MS. We hope to raise awareness of this condition by presenting our case.

Cerebral autosomal dominant arteriopathy with subcortical infarcts and leukoencephalopathy (CADASIL) is an inherited condition which predisposes those affected to strokes and other neurological impairments. CADASIL is a rare disorder, which plagues families given its inheritance pattern of autosomal dominant and is often misdiagnosed as multiple sclerosis (MS). It is imperative for clinicians to be aware of this disease, as treatment for alternate diagnoses may not be beneficial for patients. A 28-year-old female with a family history of MS presented as a new patient to our family meidcine office with concerns of developing MS. She reported a number of symptoms including new migraines with aura & intermittent numbness and was found to have hyperreflexia on examination. She was noted to have a strong family history of MS in her mother and maternal grandmother. Before complete workup was undertaken, she found herself admitted to a local outside hospital system. She had Left hemiplegia of her upper and lower extremity and was treated for an acute MS flare with high dose decadron. Unfortunately, she failed to improve significantly. Once discharged, upon further evaluation of her family history, diagnosis of CADASIL was found in her maternal grandmother and patient subsequently had NOTCH-3 gene sequencing. The clinical picture of CADASIL can mimic other more common neurologic diagnoses including migraine and MS, additionally MRI imaging of the brain may have atypical findings which mimic the findings of the acute plaques of MS, thus confounding the diagnosis. Since CADASIL is such a rare disease, and it can plague not only entire families but favors the clinical symptoms of early stroke and dementia in young and middle aged adults more awareness is needed about this disease. Advancements in geneologic testing have allowed a diagnosis to be made sooner. As family physicians, awareness of this disease and the privilege of caring for an entire family may allow for earlier recognition of this rare familial disease and allow for possible prevention of subsequent cerebrovascular events.

The missing piece of a dialysis catheter with multiple complications

POSTER: 3
CATEGORY: Clinical Vignette, Physician
AUTHOR(S: Hadra Habib MD; Stephen DeTurk, MD; Wessley Square, DO
INSTITUTION: St. Lukes Warren-Phillipsburg

Infected fibrin sheath associated with hemodialysis catheter as source of bacteremia and septic emboli managed by extirpation of fibrin sheath via suction thrombectomy method.

This is a case report of a patient with an infected fibrin sheath noted in right atrium after removal of permanent hemodialysis catheter and identified as the source of septic emboli and bacteremia. Although fibrin sheaths are a commonly noted complication of temporary and permanent HD catheters, they are not often known to embolize. They most commonly dissociated and localized in the venous system near the site of insertion but in this case, the fibrin sheath was in the right atrium. The diagnosis was reached by TEE as part of the workup for sepsis. In this case, it was the fibrin sheath itself that embolized and served as a nidus for infection. This led to vegetation formation and subsequent bacteremia and septic emboli. The case was further complicated by large necrotizing lobar pneumonia and loculated pleural effusion that required decortication via VATS. Different techniques of managing fibrin sheaths have been discussed in literature including thrombolytics, balloon disruption, stripping the sheath but the data available are limited and without definitive consensus. The object was later removed by Interventional Radiology through implementing a suction thrombectomy using FlowTriever device, which is typically used for pulmonary emboli. This is a technique that is not commonly used to retrieve such objects.

Nutrition and the Geriatric Population: Assessment, Diagnosis, Treatment and Documentation

POSTER: 4
CATEGORY: QI, Physician
AUTHOR(S: Joshua Raymond MD; M. Edgar PAS-3; A. Shah, MD; Z. Khan, MD; M. Ciminelli, MD
INSTITUTION: Rutgers RWJMS at CentraState-Freehold

With an aging population, topics regarding the geriatric population are coming to the forefront. The purpose of this work is to continue education regarding the proper assessment, treatment and documentation of malnutrition in the geriatric population.

With an aging population, topics regarding the geriatric population are coming to the forefront. The purpose of this work is to continue education regarding the proper assessment, treatment and documentation of malnutrition in the geriatric population. Information for this presentation was compiled from various sources: American Society for Parenteral and Enteral Nutrition, American Geriatrics Society, Beers criteria, and other geriatric works and research. This compilation provided a framework for the proper assessment, treatment, and documentation of malnutrition in this special population. This review also elucidated that although common in practice, there is no proven data on the utility of pharmacotherapy in treating malnutrition in the geriatric population. This work is significant because as the geriatric population grows worldwide, so do the number of patients to care for. Therefore, it is imperative for Geriatricians, Family Physicians and other primary care providers to become well-versed in the proper detection and management of malnutrition.

Covid Outreach - A Proactive Approach

POSTER: 5
CATEGORY: Clinical Vignette, Physician
AUTHOR(S: Roger Thompson MD; Bonnie Thompson, BSN; Alexis Thompson, BA
INSTITUTION: Family Practice of Middletown (Integrated Medicine Alliance)

We review our practice's proactive Covid outreach evaluation and treatment.

Patients infected with Covid often found out at testing centers where no treatment was offered. Access to care was limited by office closures. Most patients were left with no guidance. Our team created a proactive outreach program to our patients who had tested positive. With this program we "treated" over 2000 Covid patients, providing access to evidence based care, access to in-person visits as needed and essential emotional support. This system allowed us to coordinate our office response to the pandemic, provide much needed patient care and support and in a proactive manner. This system met with universal approval from caregivers, office staff, patients and their families. We see it as a model of care for future broad based conditions.

Risk Factors Driving Alcohol and Substance Use Rates During the COVID-19 Pandemic and Recovery

POSTER: 6
CATEGORY: Research, Physician
AUTHOR(S: Meagan Vermeulen MD, FAAFP
INSTITUTION: Inspira Health-Mullica Hill

Alcohol and substance use disorders are leading causes of morbidity and mortality worldwide. Although animal studies show stress as a risk for misuse of these substances, there are no human studies examining this risk. Our study examined the heightened risk of alcohol and substance use during periods of social isolation during the COVID19 pandemic.

Background: Alcohol misuse is one of the leading preventable causes of death worldwide; opioid overdose accounted for over 70% of overdose deaths in 2018. Stress is a known risk in the mitigation of alcohol and substance use disorders. Previous studies describe the long-term effects of social isolation on stress in non-human animals; there are no known studies examining the impact of long-term social isolation on humans. Hypothesis: Our study aimed to demonstrate the heightened risk of increased alcohol and substance use in adults during times of pandemic, lock-down, and isolation. Methods: An anonymous report of all adult patients of Rowan Family Medicine was generated across four time frames: prior to COVID-19 pandemic (12/2019-3/2020), during NJ stay-at-home order (3/2020-5/2020), after NJ stay-at-home order lifted (6/2020-8/2020), and NJ return to partial stay-at-home order (9/2020-11/2021). Alcohol and substance use screener scores (AUDIT-C and DAST-10), gender, age, and residence zip code were analyzed and compared. Individual patients were not compared across time periods. Results: T-test and bootstrap resampling techniques analysis were used. Results indicated a 43% increase in alcohol use during mandated lock down. Alcohol use returned to pre-lock down levels following lock down, including a decline as activities outside the home increased. Male alcohol use was higher than female ($p = 0.0007018$), increased faster during lockdown, and decreased faster than in females following lockdown. The greatest increase in alcohol use during lockdown was present in affluent communities (71%) followed by impoverished communities (58%); alcohol use declined after lockdown (-57% and -30%, respectively). Drug use decreased during lock down, continued decreasing during re-engagement, and increased to lockdown levels during secondary lockdown. Male drug use increased during lockdown then decreased; female drug use decreased during lockdown and increased upon re-engagement. The increase in drug use during lockdown was noted in affluent communities (35%) and impoverished communities (7%). Drug use in affluent communities decreased following lock down and increased in impoverished communities. Discussion: Periods of social isolation during the pandemic lockdown showed a rise in alcohol and substance use amongst all patients in a large, multi-site family medicine practice in Southern New Jersey. This was affected by multiple variables, including gender, socioeconomic status, and age, with slower resolution of risky alcohol consumption noted in women in both affluent and impoverished communities. Drug misuse followed a bell-shaped curve in men during and after lockdown; use in women decreased in lockdown yet rebounded afterwards, including a rise in use post-lockdown. Although alcohol use was higher in males during lockdown, alcohol use in females was slower to return to baseline after lockdown lifted, if at all. It is repeatedly noted women are disproportionately affected by this pandemic, including job loss and increased caregiving burdens, creating increased risk for persistent stressors influencing these hazardous behaviors and maladaptive coping mechanisms. The authors urge physicians to continue screening patients, particularly women, for substance and alcohol use disorders and receive training in motivational interviewing tools for engaging patients who are at risk for persistent use of risky, maladaptive coping skills. References: Global status report on alcohol and health 2018. World Health Organization. https://www.who.int/substance_abuse/publications/global_alcohol_report/en/. Published August 21, 2019. Accessed June 9, 2020. Wilson N, Kariisa M, Seth P, Smith H, Davis NL. Drug and Opioid-Involved Overdose Deaths-United States, 2017-2018. MMWR Morbidity and Mortality Weekly Report. 2020;69(11):290-297. doi:10.15585/mmwr.mm6911a4. Find Help: ATOD. SAMHSA.gov. https://www.samhsa.gov/find-help/atod. Accessed June 9, 2020. Kreek MJ, Koob GF. Drug dependence: stress and dysregulation of brain reward pathways. Drug and Alcohol Dependence. 1998;51(1-2):23-47. doi:10.1016/s0376-8716(98)00064-7. Mitchell MR, Potenza MN. Addictions and Personality Traits: Impulsivity and Related Constructs. Current Behavioral Neuroscience Reports. 2014;1(1):1-12. doi:10.1007/s40473-013-0001-y. Weiss IC, Pryce CR, Jongen-Relo AL, Nanz-Bahr NI, Feldon J. Effect of social isolation on stress-related behavioural and neuroendocrine state in the rat. Behavioural Brain Research. 2004;152(2):279-295. doi:10.1016/j.bbr.2003.10.015. U.S. labor market inches back from the COVID-19 shock, but recovery is far from complete. Pew Research Center. https://pewrsr.ch/3sk0qCx Accessed July 7, 2021.

Cardiac Cirrhosis in the Setting of Severe Diuretic-Resistant Tricuspid Regurgitation

POSTER: 7
CATEGORY: Clinical Vignette, Resident
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INSTITUTION: Rutgers RWJMS at CentraState-Freehold

Tricuspid regurgitation (TR), while common, is often mild; in those with severe dysfunction, it is a finding of advanced cardiac disease. Patients become refractory to diuresis and develop chronic volume overload. We present the case of a 59-year-old male with extensive cardiac history including severe TR leading to cirrhosis and renal failure.

We present the case of a 59-year-old male with an extensive cardiac history including myocardial infarction status post three vessel coronary artery bypass graft, congestive heart failure with reduced ejection fraction status post biventricular implantable cardiac defibrillator (ICD) placement, recently diagnosed atrial fibrillation status post cardioversion, ischemic cardiomyopathy, hypertension, and stage IV chronic kidney disease, who presented with anasarca and was admitted for intravenous diuresis. He had significant abdominal distension and scrotal edema on exam, without pulmonary congestion, and labs were notable for an elevated brain natriuretic peptide level which correlated with his clinical volume overload. He also had proteinuria and an elevated creatinine of 2.6mg/dL. Echocardiogram identified a reduced left ventricular ejection fraction of 30-35% with moderate to severe TR and grossly normal TV structure, as well as dilation of the inferior vena cava. This patient had significant fluid overload, with congestive heart failure exacerbation as the most likely diagnosis. However, given his ascites, cirrhosis and nephrotic syndrome from his renal impairment were also considerations. Despite receiving intravenous diuresis, the patient was not improving, and milrinone infusion was necessary to assist with cardiac output. Gradually his volume status improved, and he was eventually discharged with close cardiology follow up. Several weeks later, he returned for readmission to the hospital with significant uremia and worsened creatinine to 4.7mg/dL, in addition to dramatic ascites requiring paracentesis. His serum-ascites albumin gradient was 1.4, and imaging of the liver showed evidence of cirrhosis, likely cardiac in etiology given his severe tricuspid valve dysfunction. He was referred to a tertiary care center and underwent tricuspid valve replacement, subsequently having significant improvement in his overall cardiac status. Discussion: Tricuspid regurgitation (TR), while common, is often mild and asymptomatic. In those with severe valvular dysfunction, it is considered a finding of advanced cardiac disease. Disease severity positively correlates with mortality, with severe TR having as high as a 36% mortality rate. TR is most commonly due to functional causes; patients with left heart valvular disease or pulmonary hypertension develop elevated right ventricular pressures which lead to subsequent right-sided cardiac remodelling and tricuspid annulus dilation. Functional impairment may also result from right-ventricular device leads structurally impeding valves. Non-functional causes are less frequent and occur due to direct damage to the valvular structures from the likes of infective endocarditis, rheumatic fever, myxomatous degeneration, trauma, or iatrogenic disease. Diagnostic evaluation primarily consists of echocardiography, and severity can be determined using the 2017 guidelines adopted by the American Society of Echocardiography. Medical management of TR mostly consists of symptomatic treatment with diuresis and salt restriction; however, those with severe disease may become refractory to these measures. This can result in a chronic volume overloaded state that leads to a multitude of complications, including hepatic congestion progressing to cirrhosis or renal failure due to cardiorenal syndrome. Given these potential debilitating complications, isolated surgical intervention for the tricuspid valve is indicated in refractory cases, ideally prior to the development of significant right ventricular dysfunction.

Warm Hand-Offs Improve Emergency Department Follow-Up with Primary Care

POSTER: 8

CATEGORY: QI, Resident

AUTHOR(S: Sydney Asselstine MD; Resham Khan, MD, Deshanki Pandya, MD, Ryan Narrain, MD, Nicole Castro, MD, Joshua Raymond, MD, and Maria Ciminelli, MD

INSTITUTION: Rutgers RWJMS at CentraState-Freehold

Being able to coordinate appropriate emergency department follow-up can alleviate some of the burden on the healthcare system. When patients are left responsible to schedule this follow-up, potential gaps in care result; direct communication between ED staff and primary care allows for a more optimal transition.

The majority of emergency department (ED) visits within the United States do not necessitate hospital admission, and a large volume of visits are even considered non-emergent. Many unnecessary ED visits occur as a result of a rising uninsured population and difficulty with achieving primary care. This leads to an increased burden on the ED system and greater cost of healthcare overall. Being able to coordinate appropriate primary care follow up for ED patients may allow for relief of some of this burden. Smaller community hospitals particularly value primary care follow-up. In our hospital, which works closely with a residency-based federally qualified health center (FQHC), the question was posed as to how we could better coordinate this care. Before implementing solutions, we first sought to identify current follow up rates. We hypothesized that directly communicated warm handoffs between ED staff and the residency program would correlate with higher follow-up rates. This retrospective study analyzed data collected from chart review for the months of July and August 2021. Data was extrapolated from ED visits for patients that were not hospitalized and were referred for follow-up with a residency-based federally qualified health center (FQHC) serving the community. Information regarding the method of referral was collected, noting whether there was a warm handoff to resident physicians from emergency room staff or provision of health center contact information to patient. Follow up rates at 2 weeks following ED visit were examined. It was hypothesized that there would be higher volumes of follow-up care in patients with whom direct communication occurred between the ED staff and the resident physicians. A total of 474 patient encounters from the ED were reviewed over the two month period. Of patients for which the ED staff communicated directly with the residents about, 42.6% were seen for follow-up care within 2 weeks, compared to 10.0% of patients that were required to establish follow-up by contacting the FQHC themselves (x^2 (1,474) = 42.9559, $p<0.00001$). There is a clear concern for gaps in follow up care after ED visits, and when the responsibility was left to the patient to make the appointment there were lower rates of follow up than when the residency program was directly communicated with by the ED staff to establish follow up. While this communication has increased the effectiveness of follow-up care, there is a need for a referral platform that can increase the efficiency of scheduling these appointments.

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

POSTER: 9
CATEGORY: Research, Resident
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INSTITUTION: Rutgers RWJ-New Brunswick

This study investigates the experiences of New Jersey Family Medicine residents with the etonogestrel subdermal contraceptive implant (Nexplanon) in their practices. We used semi-structured exploratory interviews to evaluate the factors that impact comfort, attitudes and training with contraceptive implants and factors that impact those experiences.

1. Background and Hypothesis: The aim of this study is to explore the experiences of New Jersey Family Medicine residents and preceptors with the etonogestrel subdermal contraceptive implant (Nexplanon), and to explore barriers and facilitators to training. 2. Design, subjects, setting: This qualitative study employed semi-structured individual interviews to explore resident and attending physicians' experiences with contraceptive implant training. A survey was used to stratify the NJ residency programs by average number of contraceptive implant devices provided by residents. Residents and preceptors from the upper and lower quartile of residency programs were invited to participate. 3. Methods/Scientific Merit: We asked subjects to identify and explain factors that support or inhibit contraceptive implant training and provision in their residency program. We transcribed, coded, and analyzed interviews on a rolling basis. We utilized memoing to reflect on the data and identify saturation, and developed and refined our codebook using a collaborative and iterative process. We analyzed interviews using deductive and inductive techniques to identify themes. 4. Results: Twenty-five subjects including 14 residents and 11 preceptors completed interviews. Preliminary results suggest common themes among programs in the lower quartile of programs. These similarities include lack of resident hands-on experience with the procedure, lack of formal training and teaching with the procedure, and office barriers that result in difficulty scheduling patients in a timely fashion, among others. Some of the facilitators shared across programs in the upper quartile include formal training and inclusion of contraception topics in residency curriculums, attending physicians' comfort with the procedure, office sessions dedicated to procedures/GYN issues, and patient familiarity with the procedure. 5. Discussion: Contraceptive implants can be effectively prescribed by family medicine physicians with adequate support and training. We identified potential interventions including formal implant training sessions, dedicated procedure office sessions, stocking of product in office, and support staff focused on reproductive health that can aid in scheduling, obtaining device, and setup prior to visit.

Evaluation of Depression Screening in a Community Oriented Primary Care Office

POSTER: 10
CATEGORY: Research, Resident
AUTHOR(S: Khashayar Farhoomandi MD, MPH; Daniel Cruz, PhD; Preethi George, MD
INSTITUTION: HMH Mountainside

Depression is a widely prevalent issue throughout the world. Screening for mental illnesses such as depression in the primary care setting is of utmost importance to ensure patient centered care. During this study, we viewed whether or not physicians were successfully screening patients for depression during annual wellness visits.

Title: Evaluation of Depression Screening in a Community Oriented Primary Care Office Purpose: Depression screening in the primary care setting allows for detection, evaluation, and management of mental health. This study aimed to determine whether resident physicians in the office screened patients for depression during annual wellness examinations. Methods: Study Design: Single site, retrospective chart review. Setting: Hackensack Meridian Mountainside Family Practice Group, a residency training primary care practice. Intervention: Depression screening per AAFP guidelines. Participants: A total of 150 of 217 randomly selected patients from Mountainside Family Practice. Measures / Main Outcomes: A review of patient EHR for screening of depression with the Patient Health Questionnaire (PHQ-9), a valid, reliable, and widely used questionnaire for signs and symptoms of depression. We conducted a retrospective statistical analysis of data collected during a specified time period and chi-square tests were used to test rates of PHQ-9 screening and correlations with demographics. Results: The data pertaining to 150 randomly selected office patients were successfully analyzed. Of the 150 patients, the PHQ-9 screening rate was 77% (N=116) for the current study. Thirty four patients or 23%, were not screened for depression during annual wellness exams (x2 44.827, p-value is < .00001). Patient data was also stratified based on PGY resident year, age, sex, and insurance of patient, which did not result in statistically significant differences. Conclusion: Results revealed that 77% of patients at Mountainside Family Practice were successfully screened for depression using the PHQ-9 during annual wellness exams. There were no statistically significant differences in PHQ-9 screening for PGY year, gender, age or insurance type. These findings are positive as they suggest that screening rates are not adversely influenced by demographic variables that would have otherwise suggested biased screening practices. More research can be conducted and compiled to strengthen the results of this study and provide further insight on the findings as compared to other national quality standards.

Increasing Lung Cancer Screening in First Hand Smokers: An Effort to Aid in Early Detection of Lung Cancer

POSTER: 11
CATEGORY: QI, Resident
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INSTITUTION: Rutgers RWJMS at CentraState-Freehold

As family physicians, patient care and wellbeing is our ultimate goal, and we strive to serve our patients. Through our efforts, we hope to improve utilization of annual lung cancer screening in our family practice's qualifying patient population, in order to aid in early detection of lung cancer.

Lung cancer is the second most common cancer and the leading cause of cancer death in the U.S. The most important risk factor for lung cancer is smoking, estimated to account for about 90% of all lung cancer cases with a relative risk of lung cancer approximately 20-fold higher in smokers than in non smokers. Lung cancer has a generally poor prognosis, with an overall 5-year survival rate of 20.5%. However, early stage lung cancer has a better prognosis and more applicable treatment options. The USPSTF recently expanded lung cancer screening criteria to include adults aged 50 - 80 yrs who have a 20 pack-year smoking history and currently smoke, or have quit within the past 15 yrs and recommends annual screening for lung cancer with low dose computed tomography (LDCT) in this group (Grade B recommendation). Screening should be discontinued once a person has not smoked for 15 years or develops a health problem that substantially limits life expectancy or the ability or willingness to have curative lung surgery. The recent change in guidelines and realization of the underutilization of lung cancer screening prompted us to review the number of orders placed for LDCT chest vs the number of orders that actually get carried out. Our EHR review included the number of active smokers documented from 11/1/2020 to 10/31/2021 and the numbers of LDCT chest orders placed during that period. This date was then compared to the LDCT chest orders that were performed. We were surprised to find out that during the studied period, only 10% of the active smokers received an order for lung cancer screening, and out of this only 19% of the orders were completed. We developed an informative flyer in English and Spanish, with a plan to educate our patients, co-residents and medical assistants regarding the need and criteria for annual lung cancer screening and how to properly document a patient's smoking history to aid in the identification of qualifying individuals. Through our intervention, we hope to increase the rate of orders placed by 20% in the next five months and by 50% in the next 12 months. Our data review was limited due to lack of accurate quantification of smoking history, therefore assumption was made that all smokers during this period qualified for LDCT chest. We hope to correct this by the time of five month analysis by educating our medical assistants to correctly document smoking history into pack years during intake for easier identification. Our long term goal is to aid in the early detection of lung cancer by screening high risk individuals in order to reduce lung cancer mortality.

Incidental case of Alexander disease in a patient admitted for Pyelonephritis.

POSTER: 12
CATEGORY: Clinical Vignette, Resident
AUTHOR(S: Aqsa Khan MD; Iyad Baker MD, Syed Sirajuddin MD
INSTITUTION: Hackensack University Medical Center

Central nervous system demyelination disorders have a wide range of differentials, this case illustrates the atypical presentation of juvenile-onset Alexander disease and emphasizes the importance of high clinical suspicion in diagnosis of any disease.

Introduction: Alexander disease is a very rare fatal leukodystrophy, which usually becomes clinically evident in the infantile period, although neonatal, juvenile, and even adult variants are recognized. The pathophysiology involves mutations in the gene for glial fibrillary acidic protein (GFAP) that maps to chromosome 17q21. It is inherited in an autosomal dominant manner; however, most cases arise de novo as the result of sporadic mutations. Most common type is the infantile form that usually begins during the first 2 years of life. Symptoms include mental and physical developmental delays, followed by the loss of developmental milestones, an abnormal increase in head size, and seizures. The juvenile form of Alexander disease has an onset between the ages of 2 and 13 years. The disease can affect both males and females equally. Children may have excessive vomiting, difficulty swallowing and speaking, poor coordination, spasticity, seizures, and loss of motor control. Adult-onset forms of Alexander disease are less common. The symptoms sometimes mimic those of Parkinson's disease or multiple sclerosis or may present primarily as a psychiatric disorder. Case Presentation: Twelve-year-old boy recently immigrated from Pakistan, presented to ED with complaints of burning micturition, increased frequency, occasional hematuria, and right flank pain for 2 weeks diagnosed with Pyelonephritis and admitted for IV antibiotics. His height is 150cm, weight 43kg, and head size > 95th centile. On further questioning: the patient's mother reported Antenatal and natal history was unremarkable. Postnatally patient had delayed neck holding, started sitting without support after 12 months. He first walked at 2 years of age and currently has a normal gait but cannot run fast, or hop on one leg. He spoke his first words at 18 months of age and currently has a speech delay. The patient was a grade one student due to learning disabilities, likes to play with children between 4 to 6 years of age, has an intact conscience. The patient is a fourth child of related parents without any family history of neurological disorders but significant for the death of 3-second degree relatives in their third decade of life due to kidney disease. On examination, the patient had stable vitals. Had a head circumference > 95th percentile for age. Coarse face, poor eye contact. Systemic examination revealed bilaterally palpable kidneys. Cranial nerves were intact had stammering speech. Both gross and fine motor skills were normal with intact coordination and gait.

Neurometabolic investigations of serum were unremarkable. Cranial CT scan was consistent with frontal lobe leukodystrophy while MRI with extensive white matter signal changes and swelling represented Alexander's disease. Genetic testing is pending. Discussion: Alexander's disease is progressive, often fatal, and debilitating for patients and families. Making a correct diagnosis is essential. findings and Genetic testing for GFAP peptide sequencing mutation can confirm the diagnosis. Treatment of Alexander's disease remains supportive. A multidisciplinary and comprehensive approach can improve function and quality of life for affected individuals. Long-term PT/ST/OT. Supportive management such as Anti-seizure medications, baclofen, and benzodiazepines for hypertonia and spasticity. The clinical progression of Alexander disease is variable; many children survive for decades and pursue educational and employment opportunities.

Multiphasic Acute Disseminated Encephalomyelitis Associated with Metapneumovirus Infection in a 7-year-old boy.

POSTER: 13
CATEGORY: Clinical Vignette, Resident
AUTHOR(S: Aqsa Khan MD; Elizabeth August MD; Gaurang Brahmbhatt MD
INSTITUTION: Hackensack University Medical Center

ADEM typically is a monophasic disease but additional demyelinating events can occur in up to 36 percent especially if MOG Ab is positive. The multiphasic disease is defined as two episodes consistent with ADEM separated by at least three months. While ADEM can be fatal, the mortality rate is low.

Introduction: ADEM is a rare illness; annual incidence being 0.2 to 0.5 per 100,000 children. It usually affects children 3 to 7 years of age. Approximately 3 to 6 cases are reported in the United States annually. Males are affected more then females. Associated pathogens include several viruses and bacteria: coronavirus, HIV, influenza, coxsackie, CMV, EBV, chlamydia, Mycoplasma, beta hemolytic Streptococcus, herpes simplex, hepatitis A, measles, rubella and varicella etc. Pathogenesis of ADEM is not completely understood. It appears to be an autoimmune disorder of the central nervous system. It begins with activation of T cells by environmental triggers in genetically susceptible individuals, leading to production of cytokines and chemokine's, TNF-alpha, complement activation, antibody-dependent cellular toxicity, myelin phagocytosis, and oligodendrocyte apoptosis leading to demyelination and axonal injury. Case Presentation: We present a case of multiphasic ADEM in a 7-Year-old male who presented for evaluation of headache for 3 days, slurred speech, drooling, lethargy, ataxia and ptosis. Patient was diagnosed with meta-pneumovirus URI 3 weeks prior to presentation. In ED MRI brain revealed new demyelinating lesions and was admitted for ADEM Management. Metabolic panel, CT Head, MRA brain and Spinal MRI were normal. Patient's first episode of ADEM was 4 months ago when he presented with a 6-week history of daily headaches, vomiting with fever, neck pain, followed by gait disturbance and facial droop and slurred speech. MRI showed patchy bilateral demyelinating disease, he was treated with IV Steroids and IV-IG; his S/S improved and was discharged on steroid taper with close neurology follow up. In 2 months f/u Patient was clinically back to baseline and MRI showed complete resolution of abnormal findings. Extensive workup showed negative inflammatory markers, MOG ab, NMO ab, ANA, RF, CCP, Anti ds DNA ab, Ach Receptor ab, CASPR ab, GABA-R ab, NMDA ab. Muscle biopsy and genetic testing for mitochondrial ab were obtained pending results. Discussion: Diagnosis and Management: Clinical Features (all required for diagnosis): 1) A first polyfocal, clinical central nervous system event with presumed inflammatory demyelinating cause. 2) Encephalopathy that cannot be explained by fever, systemic illness, or postictal symptoms. 3) No new clinical and MRI findings emerge three months or more after the onset. 4) Brain MRI is abnormal during the acute (three-month) phase. Lesion characteristics on brain MRI 1) Diffuse, poorly demarcated, large (>1 to 2 cm) lesions involving predominantly the cerebral white matter. 2) Deep gray matter lesions (eg, involving the basal ganglia or thalamus) can be present. 3) T1 hypointense lesions in the white matter are rare. Treatment: Initial therapy with glucocorticoids rather than IVIG or plasma exchange is preferred; Frequent Assessment of response to initial therapy is the key in the acute phase of disease. Conclusion: There are no specific/confirmatory tests to establish the diagnosis of ADEM and it is considered a diagnosis of exclusion. Differentials that should be ruled out first include Bacterial and viral meningitis or encephalitis, multiple sclerosis, NMOSD, and MOG antibody-associated disease.

Oh Baby! A Rare Case of Heart Failure

POSTER: 14
CATEGORY: Clinical Vignette, Resident
AUTHOR(S: Deshanki Pandya MD; Deshanki Pandya MD, Sydney Asselstine MD, Aida Abdul Majid MD, Zeeshan Khan MD, Maria Ciminelli MD
INSTITUTION: Rutgers RWJMS at CentraState-Freehold

Peripartum cardiomyopathy (PPCM) is an idiopathic form of systolic heart failure with variable outcomes and often delayed diagnosis due to the nonspecific clinical presentation. Etiology appears to be multifactorial, including genetics, age, race as potential risk factors. A review of the established guidelines and further Research, , along with case review is essential for early detection and management of this condition.

Peripartum cardiomyopathy (PPCM) is a diagnosis of exclusion, generally defined as idiopathic heart failure with reduced ejection fraction (< 45%) in women without history of structural heart disease, who are in late pregnancy or in the following few months

postpartum. It is a life-threatening condition with often delayed diagnosis given clinical symptoms coincide with normal late gestational symptoms. We discuss the case of a 29 year old female G3P1112 with history of gestational diabetes, tobacco use who presented to the ED with pleuritic chest pain, without shortness of breath for 5 days. Of note, this was about one month post-op of her cesarean section. Upon arrival to the emergency room, patient had tachycardia to the low 100s, normotensive, normothermic. Pertinent exam findings include no jugular venous distention or bruits, lungs were slightly diminished at left lung base, otherwise clear to auscultation without wheezes, rales, or rhonchi. Cardiovascular exam was regular rate and rhythm without murmurs, gallops or rubs. No edema was noted in bilateral lower extremities. Troponin was elevated at 0.11 which then downtrended. Urine toxicity screen was positive for amphetamines, marijuana and opiates. Chest X-ray showed patchy right middle lobe opacity and questionable left basilar opacity. CT angiogram of the chest showed no pulmonary embolism, with findings suspicious for multifocal pneumonia. Echocardiogram showed normal left ventricular size, wall thickness with reduced ejection fraction of 20-25% with severe global hypokinesis and indeterminate pattern of left ventricular diastolic filling. Differential diagnosis for this patient included drug-induced cardiomyopathy, peripartum cardiomyopathy, costochondritis, pneumonia. Cath showed normal coronary arteries with a markedly elevated LVEDP at 40 mmHg. Cardiology determined the most likely cause of reduced ejection fraction was peripartum cardiomyopathy and decided to start Lasix for diuresis, carvedilol and spironolactone for guideline-directed medical treatment. LifeVest was also requested for this patient and provided on discharge. Of note, patient returned to the emergency department multiple times within the weeks following discharge due to repeated chest pain and shortness of breath. She was adherent to follow up and medications, however symptoms continued to recur. Many questions still remain regarding this condition, making the diagnosis and treatment plan difficult. There is ongoing research to determine etiology, pathophysiology and management for PPCM. A review of the current knowledge on this condition is essential for early detection and treatment.

Importance of Advance Care Planning Visits in an Outpatient Setting

POSTER: 15
CATEGORY: Research, Resident
AUTHOR(S: Krishna Parikh MD; Joshua Raymond MD, MPH, FAAFP Zeeshan Khan MD, FAAFP
INSTITUTION: Rutgers RWJMS at CentraState-Freehold

This poster addresses the importance of addressing long-term goals of care for elderly patients with chronic multiple co-morbidities in order to improve their quality of life. Hence it can allow them to make shared decisions with physicians and can also decrease health care costs.

One of the most important components of hospital admissions should be to address goals of care for acutely ill patients. Physicians should ensure that patient values and goals are aligned with their hospital care. There is an increasing percentage of the population who are 65 years of age and older. These individuals with multiple chronic illnesses are living longer and have a higher chance of having acute health issues, requiring more hospital admission. Hence, it is causing an increase in health care costs. One of the factors that can allow for patient goals to be addressed during hospitalization is an already established POLST(physician's order for life-sustaining treatment). The goal of this study is to highlight the potential and need for discussion of advance care planning in an outpatient setting. Addressing goals of care in a non-acute setting in elderly individuals can lead to better health outcomes and quality of life. The method for this project consisted of data gathering from the EMR system in a community-based federally qualified health center in central NJ. EMR data review ascertained a total number of active patients who are 65 years of age and older. The time frame chosen was from January 2018 to March 2021. Out of the total number of 65 years and older patients, those with any form of advance directive, including POLST form were accounted for. 1883 patients met inclusion criteria; of which 45 had ACP visits. Approximately 2.4% of patients had ACP visits. 45 patients out of 1883 had POLST and/or advance directives. There is a growing need to discuss goals of care for patients in an outpatient setting. There is not enough quantitative data/study on the completion of POLST forms or advance directives in outpatient settings. Future consideration can be to consider an intervention in the outpatient setting that increases the amount of advanced care planning visits within the next 6 months. A long-term goal can be considered in a one-year time span to measure the amount of advanced care planning visits in a non-acute setting such as an outpatient office.

Acute Renal Failure And Rhabdomyolysis Caused By Cyclic Vomiting Syndrome From Chronic Cannabis Use

POSTER: 16
CATEGORY: Clinical Vignette, Resident
AUTHOR(S: Saju Samuel MD; Paul Weissberg MD, Komal Trivedi MD, Gagan Malhi MD, Christopher Bader DO, Kelly Ussery-Kronhaus MD, Kenneth Kronhaus MD
INSTITUTION: Ocean University Medical Center

Cannabis smoking is becoming more and more common among our patients these days. Although most users do not ever end up having acute adverse effects, a certain number of individuals develop intractable vomiting causing them to develop cyclic vomiting syndrome.

Learning Objectives: 1. Acknowledge renal failure and rhabdomyolysis secondary from severe dehydration from cyclic vomiting syndrome. 2.Understand how to treat cyclic vomiting syndrome secondary to chronic cannabis use. Case Summary: 40-year-old male with past medical history of extra ventricular tachycardia and cannabis induced cyclic vomiting syndrome presented to the emergency

room with the complaint of intractable vomiting, epigastric abdominal pain, and shortness of breath. He had not smoked marijuana in 4 years but relapsed 4 days prior to arrival in the emergency room. His vital signs in the emergency room were as follows: blood pressure 122/85 mmHg, pulse 112 beats per minute, respiratory rate 19 breaths per minute, saturating 99% on room air, temperature 98.7 Fahrenheit. Physical exam was significant for epigastric abdominal pain. LABS: BUN 145 mg/dL (5-25), creatinine 13.84 mg/dL (0.61-1.24), potassium 5.7 mmol/L (3.5-5.2), sodium 147 mmol/L (136-145), carbon dioxide 17 mmol/L (24-31), ALT 91 U/L (10-60), AST 95 (10-42), Anion Gap 31 mmol/L (5-13), WBC count 24.5 10*3/uL (4.5-11.0), hemoglobin 21.4 g/dL (13.2-17.5), Urinalysis Large Blood, Creatine Kinase 3,764 [iU]/L (22-232), SARS-COV-2 PCR Positive. IMAGING: CXR showed no acute pulmonary disease. EKG significant for sinus tachycardia with peaked T waves. Renal ultrasound was also performed, which showed increased renal cortical echogenicity bilaterally, suggestive of medical renal disease. Given severe dehydration from vomiting, acute renal failure, rhabdomyolysis, patient admitted to family medicine inpatient service for further management. Nephrology was consulted and decided to start patient on intravenous fluids with D5W w/ NaHCO3 and Foley Catheter was placed. There was also a possibility that patient would be started on renal replacement therapy. Gastroenterology was also consulted and placed patient on NPO until clear liquid diet could be tolerated. On the day of discharge, his nausea and vomiting resolved and there was no need for renal replacement therapy as per nephrology. The patient's creatinine trended down to 1.44 mg/dL and his creatine kinase trended down to 741 [iU]/L. Patient was advised to follow-up with his primary care physician for creatine kinase, creatinine, AST/ALT, and magnesium. Conclusions: Cyclic vomiting syndrome secondary to chronic cannabis use is a rare cause of persistent vomiting. The pathophysiology is not well understood. However, some studies have shown that it may be secondary to the dysregulation of the endogenous cannabinoid system. Diagnostic characteristics of the syndrome include some of the following: abdominal pain, nausea, vomiting; heavy, chronic daily cannabinoid use; vomiting episodes only lasting 24-48 hours but may last 7-10 days; resumption of symptoms with re-exposure to cannabis. Management for cyclic vomiting syndrome secondary to chronic cannabis use is two-fold. Cannabis cessation is the gold-standard treatment for resolution of symptoms. Supportive management usually includes IV fluids for dehydration and antiemetics such as ondansetron.

Are we as a family practice residency program screening patients for Hepatitis C Antibody as per the updated 2020 USPSTF and CDC recommendations?

POSTER: 17
CATEGORY: Research, Resident
AUTHOR(S: George Sidrak DO; Daniel Cruz, PhD
INSTITUTION: HMH Mountainside

With the world's attention being focused on the ongoing Covid 19 pandemic, a recent public health policy update has received little attention. In March and April of 2020, public health agencies recommended major changes in our national approach to screening for hepatitis C virus (HCV) infection. The changes were done by The US Preventive Services Task Force (USPSTF) and the Centers for Disease Control and Prevention (CDC), USPSTF recommended to screen every adult age 18 to 79 for Hep C antibody at least once in the life time

Purpose: Hepatitis C is one of many infectious diseases that has been spreading recently with the increase in the number of drug users. The New USPSTF and CDC screening guidelines are essential to control the spread of the disease. This study aims to determine if MFP is compliant with the new guidelines for HCV screening. Methods: Study Design: This is a retrospective study in which data was collected using EPIC, the EMR system used by MFP. A report was run from EPIC to show the annual visits done from April 1, 2020, to September 15, 2021, which produced 1,240 charts. The investigator then used an electronic random number generator to select 100 patient charts for review. Each chart was reviewed for compliance with performance measurement questions that were adapted from the CDC screening guideline and the research group questionnaire. The age of the patient, the gender of the patient, the resident level (PGY1, PGY2, PGY3), whether or not the HCV screening was ordered, whether or not the HCV screening was collected and processed, and whether or not the HCV screening resulted in a negative or positive result were recorded. Results Data was initially entered into a Microsoft Excel spreadsheet. Analysis of variance (ANOVA), Chi- Square, and a t-test were used to analyze the data collected. The following are the results of the analysis of the data. For the age of the patient, the random sample included patients from the ages of 18 to 86 with a mean of 46.9. The gender of the patients was as follows: 60 females, 39 males, and 1 other. The level of the resident who conducted the visit is as follows: 11 were PGY 1, 19 were PGY 2, and 70 were PGY 3. The HCV screening was ordered and collected in 25 out of the 100 random patients selected. The HCV screening result was negative for 25 patients and positive for 0 patients. Conclusion: Increasing rates of acute Hepatitis C among young adults, including reproductive-aged persons, have put multiple generations at risk for chronic Hepatitis C. Implementing a new strategy to fulfill the USPSTF and CDC 2020 guidelines is a necessary course of action. This may include-but is not limited to-posting informational flyers on the wall to educate office patients on HCV screenings, updating the EMR system with the new CDC guidelines to issue a warning sign when HCV antibody testing is needed, advertising the importance of HCV screening in hospital and local health channels, and running a semi-annual report about HCV screening reviewed by the clinical improvement committee in order to take the required measures to improve screening rates.

Homonymous Hemianopsia: Initial Workup and Etiologies

POSTER: 18
CATEGORY: Clinical Vignette, Resident
AUTHOR(S: Martha Smith DO; Christopher Bader, DO; Kenneth Kronhaus, MD
INSTITUTION: Ocean University Medical Center

This poster, inspired by a 72 year old female who presented with findings of homonymous hemianopsia, discusses the initial workup and etiologies of this visual deficit.

Learning objectives Discuss the workup of homonymous hemianopsia. Discuss the potential causes of homonymous hemianopsia. Discuss the impacts of homonymous hemianopsia on patient's quality of life. Introduction: Homonymous hemianopsia, given its broad causes, warrants an extensive workup. This clinical vignette discusses the case of a 72 year old female, who presented to Ocean University Medical Center with homonymous hemianopsia. The aim of the presentation will be to review the workup and management of patients with this physical exam finding. Case summary: A 72 year old female presented to the emergency room with a chief complaint of dizziness which had been occurring for the past 3 days. She also had been noticing changes to her visual field over the past few months, noting she would need to turn her head at the grocery store to see the items on the shelf. Vitals upon presentation were stable. Physical exam was unremarkable except for left homonymous hemianopsia on neurologic exam. A CBC, CMP were within normal limits. Noncontrast CT head revealed an area of low attenuation in the parietal lobe, suggesting recent infarct or mass. She was admitted to the hospital for further workup, and in the meantime put on a high intensity statin and aspirin. MRI brain was ordered, which revealed multiple enhancing masses in the parietal lobe, suggesting a malignant or infectious process. CT chest abdomen pelvis was ordered to evaluate for systemic malignancy, which was unremarkable. She was transferred to JSUMC for a brain biopsy. Ultimate diagnosis was glioblastoma multiforme, for which the patient underwent resection, chemotherapy, and radiation. Conclusions: Homonymous hemianopsia, which is characterized by loss of half of each visual field, warrants an extensive workup. Differential diagnosis is broad, however, stroke accounts for nearly 70% of cases. Brain tumors, infections, and autoimmune conditions such as multiple sclerosis are other important causes which should be explored. Physical exam should include a full neurological exam, and a visual acuity test if possible. If symptoms are acute, stroke workup is warranted. In all cases of homonymous hemianopsia, both physical exam and neuroimaging are key. MRI or CT are preferred. Treatment should be focused on the underlying etiology. Vision loss is usually permanent, with only 17% of patients regaining vision. Hemianopsia can significantly impact quality of life, affecting the patient's ability to perform daily tasks such as driving, reading, and shopping. Due to these ramifications, a care team including physical/occupational therapy, as well as psychology/psychiatry, is important.

The Sum of All Spheres: Cerebrovascular Accidents in Hereditary Spherocytosis

POSTER: 19
CATEGORY: Clinical Vignette, Resident
AUTHOR(S: Tajwar Taher MD; Rajendra Patel MD FACP
INSTITUTION: Rutgers Health RWJUH Somerset FMR

Our case of cerebrovascular accidents (CVA) in a patient with Hereditary Spherocytosis (HS) adds to a very small body of literature regarding this phenomenon. We question whether HS itself or splenectomy - standard curative treatment - predisposes HS patients to having CVA, and whether preventative treatment guidelines should be adjusted for them.

Introduction: Hereditary Spherocytosis (HS) is the most common cause of hemolytic anemia. The deformed shape of the RBC prompts phagocytosis by splenic macrophages. As a result, HS patients may develop jaundice, reticulocytosis, and splenomegaly. Until now, only a few cases of cerebrovascular accident (CVA) in patients with HS have been reported. Here we report a case of recurrent CVA in a patient with HS. Clinical case: A 77 year old female diagnosed with HS at age 19 s/p splenectomy, history of smoking (60 pack years), hypertension, heart failure with preserved EF, possible lung malignancy, and recurrent GI bleed presents to the emergency room with altered mental status. Five months before admission, the patient suffered her first CVA. MRI showed an infarction in the right frontal lobe. Three months later, the patient had another CVA with CT demonstrating a new hypointensity in the right occipital lobe. As she had had a recent GI bleed, the patient declined starting anticoagulation; she was discharged to acute rehabilitation on dual antiplatelet therapy . At the rehab center, she was diagnosed with left lower extremity DVT and was started on Apixaban. She developed acute blood loss anemia from GI bleeding and required blood transfusion. Apixaban was discontinued while aspirin/clopidogrel were continued. She was discharged home from rehabilitation but was brought back to the hospital for failure to thrive and change in mental status. CT Head showed areas of encephalomalacia and infarct in the left frontal lobe. MRI demonstrated subacute infarction superimposed on numerous chronic bilateral infarctions. A transesophageal echocardiogram did not reveal a left atrial appendage clot. Her hospital course was complicated by seizure and acute hypoxic respiratory failure which required mechanical ventilation. She was subsequently extubated to oxygen via nasal cannula, but on hospital day 19 the patient went into asystole and expired. Discussion: Our case adds to the small body of literature describing CVA in patients with HS. If HS was responsible for her presentation, a potential mechanism suggested in the first reported cases of HS and CVA is increased RBC aggregation and plasma viscosity (ie "sludging syndrome"). Another possible explanation is the history of splenectomy, which may have put her at 5.6x greater risk of arteriosclerotic events compared to HS patients greater than 40 years old without splenectomy. Although splenectomy can cure symptoms of HS, the loss of the spleen's filtering function may

increase coagulability. Currently, extended anticoagulation is not recommended after splenectomy, but the risks shown in the literature warrant further investigation into the utility of anticoagulation post-splenectomy. Despite our patient having typical risk factors for CVA, the multiple events raise the suspicion of HS contributing to recurrent CVA.

Are Family Medicine Residents Trained to Diagnose Dermatologic Disease in Skin of Color?

POSTER: 20
CATEGORY: Research, Resident
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INSTITUTION: Rutgers RWJ-New Brunswick

Family medicine residents are more likely to correctly diagnose dermatologic disease in white skin compared to skin of color. This study highlights a gap in medical education and helps demonstrate why family medicine residency training needs to put the spotlight on diagnosing and treating skin of color.

Background: There is a widely recognized lack of medical education when it comes to dermatology in primary care; particularly in diagnosing and treating skin of color. This study aims to assess family medicine resident confidence and ability to diagnose dermatologic disease in skin of color compared to light skin. Design / Methods: Study design: cross-sectional survey. Setting/Intervention: Voluntary online self-administered survey. Participants: family medicine residents within the Rutgers network of affiliated family medicine residencies (8 programs in New Jersey). Measures/Main Outcomes: Online survey assessing demographic variables, prior dermatology training, prior procedural experience, attitudes towards diagnosing and treating skin disorders, and ability to diagnose dermatologic disease in skin of color and light skin. Analysis: Descriptive statistics will be used to evaluate survey results. Statistical analysis will be done using Chi-square and Fishers exact tests to describe differences noted between outcomes, as well as identify predictors for dermatology knowledge in family medicine residents. Results: We anticipate that residents will have greater diagnostic accuracy for dermatologic disease in light skin (Fitzpatrick I-II) compared to skin of color (Fitzpatrick IV-VI) and have greater confidence in diagnosing and managing skin disease in light skin. We hypothesize that resident diagnostic accuracy will directly correlate with prior dermatology exposure, access to inclusive dermatology education during residency such as didactics with images of all skin types, and availability of a dermatoscope. Discussion: Results from this study are likely to demonstrate a gap in medical education when it comes to dermatologic disease in primary care and highlight a need for greater emphasis on diagnosing and treating skin of color.

COVID-19: No Longer Just an Adult Afflicting Disease; The Importance of Childhood Vaccinations

POSTER: 21
CATEGORY: QI, Resident
AUTHOR(S: Raahi Upadhyay MD; Jamie Cherian, DO; Akanksha Saxena , MD; Bianca Leuzzi , MD; Aida Eliza Binte Abdul Majid, MD
INSTITUTION: Rutgers RWJMS at CentraState-Freehold

COVID-19: No Longer Just an Adult Afflicting Disease; The Importance of Childhood Vaccinations. A prospective study conducted at the Freehold Family Health Center to improve Covid vaccine take-up rates in pediatric patients ages 5 to 11, using a dual strategy of information dissemination and direct outreach.

As of January 2022, there have been 300 million confirmed cases of COVID-19 and 5.5 million deaths worldwide, making it one of the leading causes of death. In the United States, over two million children have been infected and COVID-19 ranks as one of the top 10 causes of death in children ages 5-11. In early November 2021, the FDA approved the Pfizer vaccine for children ages 5-11. This prospective study has the primary objective of increasing the rate of Covid vaccination in pediatric patients at the Freehold Family Health Center. This subgroup of patients was chosen, as this is the most recent inclusion group by the CDC for COVID vaccination. Furthermore, the recent Omicron surge has seen an increase in pediatric hospitalizations, exceeding that of the Delta variant hospitalizations. Nationwide, an average of 881 children under age 17 are being admitted to hospitals for Covid every day. The subjects evaluated for this project included all patients 5 to 11 years old who had not received the Covid vaccine. A two-prong strategy was adopted to improve the Covid vaccination take-up rate in our practice. The first strategy involved information dissemination. Each Pediatric patient at the end of their office visit was provided with a brochure regarding the COVID vaccine. This brochure included information from the CDC regarding the benefits of vaccination, guidelines for vaccination and information regarding when the vaccine can be obtained at our office. The second strategy involved direct outreach. A list of unvaccinated pediatric patients in the practice was generated. Physicians called the parents of these pediatric patients to discuss the benefits of obtaining the COVID vaccine . Physicians also provided information to the CDC website for parents to review COVID vaccine guidelines for their children. Parents were also provided information on where and when these vaccines could be obtained. Parents were also provided with the resources to schedule Covid vaccinations for their children at our practice. The results of these strategic efforts were analyzed by monitoring the Covid vaccination rates in pediatric patients in the practice, over a three month interval.

Allergic Proctocolitis in the Exclusively Breastfed Infant

POSTER: 22
CATEGORY: Clinical Vignette, Resident
AUTHOR(S: Raahi Upadhyay MD; Mahvish Qazi MD, Bianca Leuzzi MD, Ryan Narain MD, Dr. Zeeshan Khan MD, Krishna Parikh, MD, Rob Kim, MD, Resham Khan, MD, Aida Majid MD, Dr. Alicia Dermer MD, Dr. Maria Ciminelli MD
INSTITUTION: Rutgers RWJMS at CentraState-Freehold

This case review highlights an exclusively breastfed newborn with allergic proctocolitis which was diagnosed at an early stage to prevent severe complications such as failure to thrive. Importance of a good physical exam and evaluation of stool for blood is an important aspect of this diagnosis which often can be missed resulting in worsening of the condition. Importance of education in this condition is key. The usual recommendation is to completely stop breastfeeding, however, as seen in this case, elimination of breastfeeding is not needed but elimination of the offending agent can cause success and improvement of the condition.

Allergic proctocolitis (AP) is an immune mediated gastrointestinal disorder. Many antigens are associated with this disorder with the most common being cow's milk protein. Other food proteins such as soy, eggs, wheat are also implicated. It usually presents as rectal bleeding but can also present with irritability and diarrhea. The condition is seen mostly within the first few weeks of life and resolves by late infancy. It's characterized by inflammation of the distal colon in response to one or more food proteins through a mechanism that does not involve immunoglobulin E. This condition is often overlooked in the outpatient setting in differential diagnosis leading to extended suffering of the infant and family which can subsequently lead to unnecessary, expensive and invasive testing. AP can affect both breastfed and formula fed infants. As in the patient presented here, more commonly AP is in exclusively breastfed patients due to a reaction to maternal dietary proteins which are transferred via lactation. The rate of breastfeeding has been rising over the years due to the benefits and will continue to rise. This will likely cause an increase in the number of cases of AP. Misdiagnosis, misinformation, and lack of support will delay the treatment of AP and can continue to prolong this easily-treatable condition. It is essential that physicians, nurses, dieticians, lactation consultants and all others involved in the care of breastfed infants are educated in recognizing this condition as well as educating parents that breastfeeding can be continued and be safe and beneficial for the baby with restriction of maternal diet to the offending agent.

Alpha Gal Syndrome Case Report: A Mammalian Product Triggered Allergy

POSTER: 23
CATEGORY: Clinical Vignette, Resident
AUTHOR(S: Jillian Weinfeld MD; Joshua Wheatley, MD Mihir Patel, MD Christopher Bader, DO Kelly Ussery-Kronhaus, MD Kenneth Kronhaus, MD
INSTITUTION: Ocean University Medical Center

Alpha gal syndrome is a cause of anaphylaxis in patients with a history of tick and/or chigger bites. The saliva triggers an IgE immune response leading to hypotension and a non-specific urticarial rash. Management involves treating the allergic reaction with anti-histamines, intravenous steroids, and avoidance of red meat/dairy products.

Introduction: Alpha gal (galactose-Î±-1,3-galactose) syndrome is caused by a delayed immunological response to mammalian derived products. This diagnosis is caused by the saliva found in certain types of arachnids including amblyomma americanum, the Lone Star Tick, and chigger bites. These sources have the ability to transmit the alpha gal antigen through glycoproteins found in their saliva which act as an antigen in the human host. The antigen subsequently elicits an IgE mediated immune response to mammalian derived products that contain alpha-galactose protein, including beef, pork, lamb, veal and dairy. Case Description: A 63 year old male presented to an outpatient family medicine clinic with hypotension (blood pressure=94/50) and a diffuse urticarial rash in the context of no known history of allergies or anaphylaxis. A full dietary recall was performed at the initial evaluation and the patient reported consumption of beef jerky in the previous 24 hours. The patient also recalled a history of spending time in the woods leading to chigger bites on his limbs bilaterally. The patient was immediately referred to the emergency department where he underwent a septic work-up including a complete blood count, comprehensive metabolic panel, urinalysis, urine culture, and a respiratory pathogen panel. Results revealed an elevated white blood cell count (14.6 10^3/uL), c-reactive protein (1.27 mg/dL), and lactic acid (4.1 mmoL/L). He was also found to have an acute kidney injury (creatinine =1.47 mg/dL; patient's baseline=0.73 mg/dL), a urinalysis positive for white blood cells, red blood cells, and bacteria, in addition to a urine culture that grew streptococcus pyogenes. Further tests were ordered including IgE, alpha gal IgE, and serum beef/pork allergens. The patient's IgE and alpha gal IgE were elevated along with a positive serum beef and pork allergen testing, subsequently suggesting a diagnosis of alpha gal syndrome. The patient was treated with intravenous diphenhydramine and methylprednisolone. He was also administered intravenous fluids for his acute kidney injury which improved over the course of his admission. His urticarial rash resolved and the patient remained hemodynamically stable. He was discharged home on a ten day prednisone taper and prescribed an epinephrine auto-injector. He was advised to avoid eating red meat products and referred to an allergist. Discussion: The treatment of alpha gal syndrome is to avoid triggers of mammalian derived meat and dairy products. Although alpha gal is an unusual cause of an anaphylaxis type presentation, this case illustrates it should be considered in those with a history of tick and/or chiggers followed by ingestion of red meat. This case study further emphasizes the importance of taking a thorough history in

patients who present with a non-specific rash in order to broaden differential diagnoses, determine the appropriate treatment regimen, and ultimately prevent potentially life threatening allergic reactions.

How do the screening rates for Abdominal Aortic Aneurysm at Mountainside Family Practice Group compare to the national average?

POSTER: 24
CATEGORY: QI, Resident
AUTHOR(S: Sanyo Wen MD; Daniel Cruz, PhD; Preethi George, MD
INSTITUTION: HMH Mountainside

This QI, project is intended to investigate the abdominal aortic aneurysm screening rates of Mountainside Family Practice compared to the national average. Furthermore, we look to improve our rates of screening by delving into limitations and obstacles.

Background: Abdominal aortic aneurysm is defined as an abdominal aorta diameter of at least 3 cm or 1.5 times the normal. Abdominal aortic aneurysm (AAA) screening is essential in preventing a potentially life-threatening rupture. Screening was implemented in 2007 as part of the AAA Very Efficiently ACT. The U.S. Preventive Services Task Force (USPSTF) recommends a one-time screening for men aged 65 to 75 who have ever smoked. We hypothesized that Mountainside Family Practice Group AAA screening rate is above the national average of 1.4% based on Center of Medicare and Medicaid Services data. Methods: Using retrospective chart review, we identified 73 male patients who were 65 to 75 with a history of smoking. The authors also considered demographics such as age, smoking status, obesity, DM, and COPD. Results: Out of 73 male patients eligible for screening, eight individuals (10.9%) completed the one-time ultrasound screening for abdominal aortic aneurysm compared to the 1.4% national average, resulting in a statistically significant difference of 9.50%, $p < .0001$ (95% CI, 4.21%-18.69%). Conclusion: Screening for abdominal aortic aneurysms in men who have a history of smoking is crucial to reducing mortality caused by AAA rupture. Ultrasonography is a cost-effective, valid, and reliable tool. Mountainside Family Practice Group had a 10.9% screening average, which is significantly better than the national average of 1.4%. Although Mountainside Family Practice Group screening exceeded the national average, it remains underutilized among the family medicine resident physicians. Education and reminder to the providers and patients are essential in increasing the AAA screening percentage in our family practice, and nationwide.

Barriers and Future Practice for Diagnosing Sleep Disorders in Primary Care Practices in Adolescents Age 13-18

POSTER: 25
CATEGORY: QI, Student
AUTHOR(S: Stuti Parikh
INSTITUTION: RowanSOM/Jefferson Health/Virtua-Stratford

Only 3.7% of sleep disorders from ICD-9 diagnosis are being documented, compared to the prevalence rate of 18 to 40% found in previous studies among adolescents. Barriers can be identified and analyzed, and future practices can be implemented to increase the diagnosis rate of sleeping disorders in adolescents.

Purpose/Objectives: Only 3.7% of sleep disorders from International Classification of Diseases-9 (ICD-9) diagnosis are being documented, compared to the prevalence rate of 18 to 40% found in previous epidemiological studies among adolescents. Screening for and diagnosing sleep disorders is important, especially among pediatric patients because undiagnosed sleep issues can affect academic performance and behavior and lead to neurocognitive and metabolic impairments in the future. However, barriers remain in primary care offices which results in many patients going undiagnosed for years. Few studies have looked at barriers, but it is important so that detrimental health and mental effects can be avoided at such an early age. As a result, barriers to diagnosing sleep disorders will be analyzed among adolescents 13-18 years old and how primary care practices can change to provide better care. Design/Methods: A literature review search was conducted using PubMed, SCOPUS, and Google Scholar. Inclusion criteria included "sleep disorders in adolescence," "barriers to sleep disorder diagnoses," and "sleep disorder diagnoses in primary care offices." Participants were adolescents 13-18 years old and from all around the world, including the United States, Italy, France, Hong Kong, Finland, Japan, Canada, and Australia. Results: Sleeping disorders among adolescents often go unnoticed because of a lack of diagnosis in primary care offices. One study concluded that while 24% of children self-reported a sleep problem, only 4% of the parents reported the problem because they felt it was not important. Additionally, only 10.1% physicians asked about any sleep issues during a physician meeting. Another study concluded that medical schools spent an average of 2 hours on sleep education and about 4 hours during residency and as a result physicians did not feel confident in their ability to screen, evaluate, and treat for sleep issues. 346 pediatricians self-reported that while they believed it was their job to inform parents and patients about proper sleep, only 18% believed they had adequate training to do so. Lastly, only 24.4% of pediatric patients were screened for snoring during normal check up visits. Of the 34.1% who documented snoring, 61.6% were not further evaluated. Conclusion/Discussion: Proper screening and diagnosis is important because of the numerous short term and long term consequences of poor sleep quality and quantity. These barriers severely hinder diagnosis of sleep disorders. As a result, future practices can be changed in primary care offices to promote the practice of diagnosing sleep disturbances. These practices

are to increase awareness about the importance of sleep to parents and adolescents through community education, to increase core training among physicians and medical students by hiring more qualified sleep experts to teach and increasing non didactic education opportunities, and to screen for snoring based on the guidelines by AAP.

Exploring perceptions about contraceptive counseling within a diverse New Jersey population

POSTER: 26
CATEGORY: Research, Student
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Counseling around contraception is widely varied and dependent on provider. Variability in contraceptive counseling techniques and provider opinion can lead to differing patient experiences with contraception. We studied the experiences of our local New Brunswick population with contraceptive counseling to better understand how we could serve their family planning needs.

1. Background and purpose: The United States has a history of contraceptive coercion by the health care system, especially in communities of color. Few studies have explored contraceptive counseling experiences and preferences among diverse urban populations. This study aims to explore similarities and differences in experiences and preferences within an ethnically diverse population in New Brunswick, New Jersey. 2. Study design: Qualitative individual interviews. Setting: Two New Brunswick health centers. Subjects: 24 pregnancy-capable people of reproductive age who attended a contraceptive counseling appointment between April 1, 2020, and March 30, 2021, stratified into three self-identified groups: white (n=8), U.S.-born people of color (n=8), and foreign-born people of color (n=8). 3. Methods: We conducted semi-structured interviews containing 27 questions about demographics, experiences with contraception, and contraceptive counseling. We are using inductive and deductive techniques to qualitatively analyze interviews for pertinent themes. 4. Preliminary Results: Participants discussed a variety of preferences for contraceptive counseling. Participants often discussed a preference for health care providers who were female, provided visuals or handouts, and discussed all contraceptive options. While some participants expressed having full autonomy in contraception selection, others reported pressure to choose a certain method. Participants expressed a preference against providers withholding information about contraception options and making assumptions about patient's lack of ability to comply with a daily regimen. 5. Preliminary Conclusions/Discussion: Participants indicated diverse preferences and experiences with contraceptive counseling with pertinent overlapping themes. Future directions include translating this project among foreign-born and U.S.-born Asian populations.

Interprofessional learning between medical and social work students at a student-run clinic

POSTER: 27
CATEGORY: Research, Student
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INSTITUTION: Rutgers RWJ Medical School

This qualitative study investigated the interprofessional attitudes of medical and social work students at a student run free clinic. Through semi-structured individual interviews and thematic analysis we determined students operationalize interprofessionalism differently. Both groups reported positive experiences working with one another to provide care in specific patient encounters.

Background: Student Run Free Clinics (SRFC's) are common within medical schools and serve a particular role in providing patient care for vulnerable populations. SRFC's often connect patients with needed social services. These clinics are often hailed by medical educators for their potential to provide interprofessional experiences, as involved students often span the health professions spectrums, and studies suggest participation in SRFC's encourage health professions students to develop social-work oriented case management and social needs assessment skills. Interdisciplinary care models have been shown to have positive outcomes for both the care team and the patients. Interdisciplinary care is associated with increased job satisfaction among team members, reduction in healthcare costs, positive health education strategies, and community collaboration. Positive outcomes at the consumer level address medical and social needs of patients, resulting in a reduction in health disparities among these vulnerable groups. Despite the demonstrated needs and potential opportunities, interprofessional learning outcomes are often mixed. Self-reported interprofessional attitudes between medical, pharmacy, nursing, and social work students have shown no significant differences between professions; however, both nursing and medical students report significantly less positive attitudes towards interprofessional teams than pharmacy and social work students. However, investigations into whether students in these practice settings have shared mental models of interprofessional practice are limited. Methods: Individual interviews with student doctor team members and former social work students at one particular SRFC, the HIPHOP Promise Clinic, were conducted by researchers using standardized, open-ended interviews. Interview guides asked questions regarding individual definitions of interprofessional & collaborative care, interprofessional attitudes, and direct clinical experiences/patient encounters. The focus groups were conducted in person and facilitated by the two investigators. Thematic analysis was used to identify, analyse, and report overall patterns within these data. Results: Responses showed that despite similar definitions of interdisciplinary care, medical students and social work students operationalized the term differently. There were differences among how each discipline prioritized the needs of their patients (health needs vs. social needs) and how they viewed their role in relation to the other discipline (view as truly collaborative vs. accessory). However, both groups of students reported positive experiences working with

one another to provide care in specific patient encounters. Both groups could name a specific encounter in which the other professional student was important in providing holistic, interprofessional care for a PC patient.

A case report of suspected choledocholithiasis 20 years after cholecystectomy

POSTER: 28
CATEGORY: Clinical Vignette, Resident
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INSTITUTION: St. Joseph-Paterson

Choledocholithiasis commonly occurs within the first three years of cholecystectomy and post cholecystectomy bile duct stones occurring more than 10 years following surgery are rare with very few cases reported. We report a unique case of choledocholithiasis 20 years following a cholecystectomy.

Cholelithiasis is extremely prevalent in the western society. The mainstay treatment for symptomatic cholelithiasis is laparoscopic cholecystectomy. Choledocholithiasis refers to one or more gallstones in the common bile duct. It may be suspected in a patient who has previously had a cholecystectomy as the gallstone is retained in the common bile duct or if there is de novo stone formation within the common bile duct. Choledocholithiasis commonly occurs within the first three years of cholecystectomy. Post cholecystectomy bile duct stones occurring more than 10 years following surgery is rare and very few cases have been reported. Most of these reports describe the presence of stones within the gallbladder/cystic duct remnant or secondary to migrating surgical clips. We report a unique case of choledocholithiasis 20 years following a cholecystectomy.

Atypical presentation of Ankylosing Spondylitis

POSTER: 29
CATEGORY: Clinical Vignette, Resident
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An early diagnosis of ankylosing spondylitis is rare and usually takes more than 5 years. We report a unique presentation of a patient with rapid weight loss of 40 pounds and polyarticular joint pain with diagnosis of ankylosing spondylitis made within 6 months onset of symptoms.

Chronic back pain is one of the most common presenting symptoms of ankylosing spondylitis, but there is a 5-7 year delay between the onset of symptoms and establishment of diagnosis (Golder). To the author's knowledge, after a comprehensive review of the English literature, there have been few cases with an early diagnosis of ankylosing spondylitis as well as significant weight loss as an initial presentation of the disease process. The objective of this case report is to present an atypical presentation of ankylosing spondylitis, detailing the disease course from onset of symptoms to diagnosis and treatment path. The case details ankylosing spondylitis in a patient with recently diagnosed asthma and no other past medical history, accompanied by a 40 pound rapid weight loss and polyarticular joint pain. Due to the unusual presentation, the patient was initially worked up for GI malignancy and rheumatologic conditions, which was unrevealing. However, given the clinical presentation with patient's complaints of various joint pains, elevated ESR and CRP, and bilateral sacroiliitis on CT scan, there was a high suspicion for a rheumatologic disease, especially ankylosing spondylitis. In this case, an early diagnosis of ankylosing spondylitis was made within 6 months of onset of symptoms, therefore it is important to maintain a high degree of suspicion in patients presenting with various joint pain and significant weight loss to make an early diagnosis.