

PAFP Research Day 2020: Poster Abstracts

Poster #1

Presenter: Angelo Real Williams, DO
Hackensack Meridian Health - Palisades Medical Center
Submission Category: Case Presentation

A 42-year old male with shortness of breath (SOB)

Authors: Stephen Lamprou, DO; Terry Vuong, DO, MS; Jane Park, MD; Tayyab Malik, MD; Iyad Baker, MD

Abstract Body: This case illustrates a serious cardiac complications of influenza and pneumococcal-related pericardial effusion and cardiac tamponade. A 42-year old male who followed regularly with his primary care physician (PCP) and had no significant PMH was sent to the ED from his PCP's office with 5 days of SOB and productive cough. A call to the ED from his PCP revealed that he failed to improve after receiving 2 days of Augmentin and Tamiflu and during his follow-up visit, he was dyspneic and ECG revealed SVT. After arriving to the ED, he was found to be tachycardic with otherwise normal vitals. WBC 17, Lactate 2.5, Procalcitonin 0.23, and CXR showed patchy infiltrates in the right lower lung field. He was started on Azithromycin, Ceftriaxone, Tamiflu and bolused IVFs. Of concern, CXR additionally showed enlargement of the cardiac silhouette when compared to a previously normal CXR. BNP 280. A follow-up CT chest revealed large pericardial effusions and bilateral pleural effusions. ECHO showed a large circumferential pericardial effusion with greater than a 25% variability of mitral and tricuspid inflow velocities suggestive of pericardial tamponade.

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## **Poster #2**

**Presenters: Stephen Lamprou, DO, MS and Manuela Noriega, DO, MPH**  
**Hackensack Meridian Health Care at Palisades Medical Center**  
**Submission Category: Case Presentation**

### **A case of PCP Pneumonia in an HIV HAART Non-compliant Patient**

Abstract Authors: Stephen Lamprou, DO, MS; Manuela Noriega, DO, MPH

Abstract Body: 42-year-old male with a 5-year history of HIV and poor compliance with HAART therapy presented with a 2-week history of worsening dyspnea. Patient also complains of an associated dry cough, unintentional weight loss >15lbs, and night sweats for the past two months. He was assessed at a community health care clinic 2 months earlier and told that his dyspnea and cough were most likely due to a combination of a 30-pack-year smoking history, occupational hazard of being a car mechanic and daily vaping. Additionally, he has had prior lapses in antiretroviral therapy treatment that he attributed to lack of access. Patient's chest x-ray demonstrated bilateral patchy infiltrates with volume loss. At that time, patient was diagnosed with community acquired pneumonia, treated with DuoNeb, Azithromycin, and Rocephin by the emergency department before being admitted. Patient was further evaluated with a chest CT that demonstrated ground glass attenuation and mosaic pattern in both lungs. Patient was admitted to the Progressive Care Unit and initially treated with Levaquin and Bactrim on HD#1. Both Pulmonology and Infectious Disease services were consulted for management of respiratory deterioration and HIV infection. Initial supportive treatment consisted in part with prednisone and DuoNeb. Patient's CD4 count

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on admission was 28. Infectious Disease recommended against immediate initiation of antiretroviral therapy and focused on pneumonia treatment. In addition, on HD#5 patient was restarted on Azithromycin once a week for MAC prophylaxis. Patient remained on Levaquin and Bactrim. On HD#6, patient was evaluated with bronchoscopy and lavage demonstrating GMS+ microorganisms consistent with Pneumocystis pneumonia. Patient remained hemodynamically stable throughout hospital course; however, dyspnea on exertion persisted until the last several days of admission. Patient was discharged home on HD#16 with Bactrim DS and Azithromycin and instructions to follow up at the HIV clinic for initiation of HAART therapy.

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Poster #3

Presenter: Maninder Sethi, MD

St. Luke's University Hospital

Submission Category: Case Presentation

A Pediatric Case of Hearing Loss associated with Type 1 Diabetes, an Overlooked Complication

Authors: Maninder Sethi MD, Abby Rhoads DO

Abstract: A 15 year old male with a past medical history of type 1 diabetes presented with a three day history of left ear pain. He reported associated decreased hearing on the left and tinnitus. Physical exam with otoscope revealed left tympanic membrane intact and normal in appearance; no retraction or serous effusion observed. No cerumen impaction of auditory canal or drainage. An office audioscope test was performed to screen at 20 and 25 dB HL at 500-4000Hz. The results demonstrated normal hearing in right ear and no response over all frequencies at 20 and 25 dBHL in the left ear. The patient was referred to ENT within 48 hours, in which, a comprehensive audiogram showed severe unilateral sensorineural hearing loss at all frequencies. He received three intratympanic injections with some but not all hearing recovery. Sudden sensorineural hearing loss is considered an otologic emergency; classically thought of as a disease of people over the age of 50, however, can happen at any age. Prompt referral to ENT with initiating of systemic steroids should be considered as treatment initiation must occur within two weeks of onset for hearing recovery. Type 1 diabetes mellitus is a risk factor for sensorineural hearing loss by two mechanisms. First, type 1 diabetes is a risk factor for autoimmune-inner ear disease closely related to antibodies capable of immunostaining human inner ear tissues or other systemic autoimmune disease such as Systemic Lupus Erythematosus, Hashimoto's Disease and Rheumatoid Arthritis. The second mechanism, uncontrolled blood sugar, can cause peripheral neuropathy and changes in cochlear microcirculation. In conclusion, adolescents and adults, especially with uncontrolled type 1 or 2 diabetes, A1C >7%, and duration of disease greater than 5 years should be considered for routine yearly screening for hearing loss in the ambulatory family medicine practice.

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# PAFP Research Day 2020: Poster Abstracts

## **Poster #4**

**Presenter: Ryan Stolakis, MD**

**Wellspring York Hospital Family Medicine**

**Submission Category: Case Presentation**

### **A Tired Tumor**

Author: Ryan Stolakis, MD

Abstract Body: Fatigue is a non-specific complaint that primary care physicians often face in the office. Although often attributable to more common causes, one must not treat each case the same, and always consider the more debilitating etiologies. One such debilitating case of fatigue started with a 50-year-old female who presented to the office with worsening fatigue for the past 6 months. The patient had a history of a Roux-en-Y gastric bypass that was previously complicated by malabsorption. They had no other significant medical or surgical history. The physical exam was unremarkable with stable vitals. Labs were sent that included a CBC, CMP, TSH, Ferritin, Vitamin B1/B12, Folate, and Vitamin D. All lab work returned within normal limits. Patient continued to exhibit severe fatigue and was now sleeping upwards of 18 hours per day. As a result, a morning cortisol and ACTH were sent. Results were significant for both a low morning cortisol and ACTH. Due to concern for potential secondary adrenal insufficiency, a cosyntropin stimulation test was ordered. The results confirmed findings that were significant for secondary adrenal insufficiency. Patient was started on hydrocortisone and sent for MRI imaging of the pituitary. Imaging of her pituitary gland was significant and revealed a macroadenoma. The macroadenoma was non-functional but displaced the optic chiasm and extended into both cavernous sinuses. As a result, patient was sent for an emergent visual field exam that was normal and was later seen by Neurosurgery. Patient underwent a transsphenoidal resection of the macroadenoma with hopeful resolution of her fatigue. Fatigue can be easily overlooked in the primary care office. This case proves that it can actually be a manifestation of something quite serious. The importance of maintaining a broad differential is paramount for physicians who continue to serve as the gateway to further medical care.

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Poster #5

Presenter: Hadra Habib MD, Majeed Dayoub MD, Nandhini Veeraraghavan MD

St Luke's University Hospital, Sacred Heart Campus

Submission Category: Case Presentation

An eye lesion with diffuse skin rash

Authors: Hadra Habib, Nandhini Veeraraghavan, Majeed Dayoub

Abstract: Behcet's syndrome is highly prevalent in Middle Eastern and Eastern Asian countries. With immigration population from these countries to United States, it is necessary for primary care physicians to recognize this disease. Behcet's syndrome is a complex rheumatological syndrome that is characterized by periods of remission and exacerbation. It involves multiple organs and ranges from mild to severe symptoms and presentation. The most common presentation involves the eyes and the skin. The diagnosis is based on symptom presentation as there is no single diagnostic test. Treatment targeted toward the affected organ and includes mainly immunosuppressants and topical steroids. depends on the affected organ. With use of newer biologic better remission rate can be

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achieved. It is important for primary care physicians to recognize the syndrome as it can cause significant decline in their quality of life given the unpredictable nature of the disease process. It may be associated with anxiety, depression, suicidal ideations and decline in their physical function. Patients with neurologic, ocular or large vessel manifestations have the greatest morbidity risk.

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### ***Poster #6***

**Presenter: Vikas Yellapu, Ambreen Alam, Post-Doctoral Fellows**

**St.Luke's University Health Network-Miner's Campus**

**Submission Category: Case Presentation**

### **Drug induced lupus secondary to Olmesartan**

Authors: Vikas Yellapu MD, Ambreen Alam MD, Julia Franzosa, Gregory Dobash MD.

Abstract: Introduction: Drug-induced lupus is commonly associated with hydralazine, isoniazid, and quinidine. Over 80 drugs have been associated with lupus as the number of novel medications have been increasing in oncology and cardiology. In the recent years there has been multiple drug recalls for Losartan, Valsartan, and Irbesartan. As we start using different ARBs or new generation ARBs we need to be vigilant in accessing for various systemic side effects. Our case describes a patient diagnosed with Lupus after being switched to Olmesartan from Valsartan. Case: A 76-year-old gentleman with history of type 2 diabetes and hypertension initially treated Losartan, was then switched with Valsartan and finally was switched to Olmesartan due to recalls. He was on Olmesartan for one month prior to presentation. He has no other medical history. His family history is negative for autoimmune diseases. He presented with complaints of dysuria, myalgia, arthralgia, fatigue, and a pruritic rash on his testicles. On physical examination he had no other significant findings. We did some lab work for drug-induced lupus. His Anti-nuclear Antibodies (ANA) came back positive at 1:320 with a homogenous pattern. His anti-histone antibodies (AHA) came back weakly positive. After discontinuation of Olmesartan, the patient was followed up after 6 weeks; his rash and other symptoms had resolved. Another round of tests showed that both ANA and AHA came back negative. Discussion: Drug induced lupus secondary to Olmesartan is not a common occurrence. There have been 8 official reports to the FDA worldwide with a lupus reaction from Olmesartan. Drug-induced lupus most likely has a different pathophysiology than systemic lupus erythematosus (SLE). It is possible that DIL is likely caused by increased production of antibodies against metabolic components of certain drugs.

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Poster #7

Presenter: Reginald Mbolda, MD

Geisinger Family Medicine Residency

Submission Category: Case Presentation

Gastroduodenal pseudoaneurysm complication secondary to acute on chronic pancreatitis

Authors: Dr. Kartik Rai (PGY-2 Geisinger), Dr. Reginald Mbolda (PGY-2 Geisinger), Dr. Jason Woloski Geisinger Family Medicine Residency Program

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Abstract: Gastroduodenal artery aneurysms are rare but life-threatening conditions. One of the most common risk factors associated with these aneurysms is chronic pancreatitis. Prompt imaging and treatment lowers the risk of adverse outcomes. We present a case of a bleeding gastroduodenal artery aneurysm complication associated with recurrent acute pancreatitis. Patient was a 39 year-old African American male with history of hypertension, alcohol abuse, and recurrent episodes of acute pancreatitis. Patient was initially hospitalized one week prior for acute uncomplicated pancreatitis and standard treatment. CT abdomen was obtained showing inflamed edematous pancreas with non loculated fluid collection along the right paracolic gutter, believed to be a nonspecific finding, although could be representative of early abscess formation. Patient was started on empiric oral antibiotics and discharged in stable condition. Two days after discharge patient returned to the hospital with similar complaints of epigastric pain and inability to tolerate PO intake after attempting to eat a large fatty meal. Following re-admission for recurrent acute pancreatitis he was treated with expectant management, fluids, pain control, slow diet progression. Two days into the readmission, patient had two large bloody bowel movements and one episode of coffee ground emesis with subsequent decrease in hemoglobin of over 7 grams during a trend over 24 hours. Given the decline in hemoglobin an urgent EGD identified clotted blood in the distal aspect of the duodenum but without bleeding source. A CT angiography showed concern for pseudoaneurysm of gastroduodenal artery. This required IR embolization and transfer to ICU for hemodynamic monitoring. Patient symptoms improved prior to patient leaving against medical advice. This case depicts the rare complication of an aneurysm involving the gastroduodenal artery in the setting of chronic pancreatitis and the challenges faced with timely identification and treatment.

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### **Poster #8**

**Presenter: Molly Nemunaitis, MD, Renata Carneiro, PhD**

**St. Luke's Health University Network Family Residency Sacred Heart Campus**

**Submission Category: Case Presentation**

### **Golden Opportunities**

Abstract Authors: Molly Nemunaitis, MD & Renata Carneiro, PhD

Abstract Body: During medical training, physicians learn to prescribe specific treatments for their patients. Often, residents become discouraged when patients do not comply with treatment plan(s) prescribed. The Stages of Change model indicates that noncompliant patients are considered to be in the "pre-contemplation stage" of change. This means that patients are not ready to take action to change their behaviors and comply with the treatment prescribed. Thus, such patients could benefit greatly from Motivational Interviewing (MI) techniques to increase compliance by helping them transition from pre-contemplation to action on prescribed treatment. Nevertheless, few residents practice MI during their residencies. This case study illustrates how a patient, Ms. A, who suffers from bipolar disorder and several chronic conditions benefited from motivational interviewing during hospitalization for an acute episode of asthma exacerbation. On the second day of hospitalization, Ms. A requested to leave against medical advice, stating that she was not satisfied with her care. In an attempt to help convince Ms. A to continue treatment, her physicians employed motivational interviewing techniques to form a collaborative relationship with Ms. A. The physicians initially explored Ms. A's aversion to remain in the hospital. With a few adjustments, Ms. A and the physicians agreed on a plan. The plan was to administer Ms. A's medications at scheduled times, mutually agreed upon with Ms. A, in order to disrupt her daily routine as little as possible.

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Consequently, this strategy increased Ms. A's level of comfort, and she agreed to stay until she was medically cleared for discharged. Subsequently, this case study demonstrates how physicians can establish therapeutic alliances with patients, through the use of MI techniques, in order to improve treatment compliance rates. This case also highlights the importance for physicians to be trained in behavioral interventions in order to optimize patient care.

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Poster #9

Presenters: Shane Lukose, MD, Daniel Sawares MD, Molly Nemunaitis MD, Nandhini Veerarahavan, MD
St Luke's University Health Network
Submission Category: Case Presentation

Huntington Disease

Authors: Shane Lukose MD, Daniel Sawares MD, Molly Nemunaitis MD, Nandhini Veerarahavan MD

Abstract Body: Huntington disease (HD) is an autosomal dominant inherited progressive neurodegenerative disorder characterized by choreiform movements, psychiatric & behavioral problems, and dementia. HD is caused by expansion of the cytosine-adenine-guanine (CAG) trinucleotide repeats in the huntingtin (HTT) gene (also known as the HD or IT15 gene) located on chromosome 4p16.3 that encodes the protein huntingtin. The function of this protein is unknown. (1-3) The main determinant for age of onset is the number of CAG repeats in the HTT gene. The normal number of repeats is 28 or less. When repeats are equal or greater than 40, the disease is fully penetrant, and symptoms of the disease will manifest. We present here a 45-year-old male with a past medical history of obesity, hyperlipidemia, schizophrenia and borderline intellectual disability for an annual wellness visit with self-reported falls, abnormal gait, involuntary movements, constantly tracking to the right, walking into objects and difficulty with stairs over the past couple months, however later disclosed to be over 3 years. He reports being stopped by law enforcement for suspicion of intoxication which was negative. Additionally, he thinks his mother had a movement disorder and needed genetic testing. His medications included: Bzotropine, Celexa, Haldol and Invega all for 3+ years. On physical exam, it was noted that he had cerebellar dysfunction on finger to nose exercise, ataxic gait when attempting a straight-line walk, in addition to fast/brief involuntary movements. Further work up showed: MRI: Volume loss of caudate heads and enlargement of frontal horns of the lateral ventricles evident by increased ratio of the caudate heads in relation to the frontal horns of the lateral ventricles and inner table width, most consistent with HD. Huntington's genetic panel: Pathogenic high penetrance alleles. Greater than 38 CAG repeats were detected, with 45 repeats in one allele.

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### **Poster #10**

**Presenter: Kamaldeep Sethi, MD, Andrew Goodbred, MD**  
**St. Luke's Family Medicine Residency - Anderson**  
**Submission Category: Case Presentation**

### **Knobby Knuckles - An Atypical Presentation of Tophaceous Gout**

Authors: Kamaldeep Sethi, MD and Andrew Goodbred, MD

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Abstract: Gout is a condition commonly encountered in primary care, but many physicians experience an entire career in medicine without encountering a case of significantly tophaceous gout. Most often, this occurs in patients with chronic, poorly-controlled gouty arthritis. This fascinating case presents a patient who appeared in his primary care physician's office with advanced tophaceous gout, without a history of joint pain or gouty flares. We aim through the presentation of this case to prepare physicians and trainees for timely recognition and management of patients with tophaceous gout, particularly those with an atypical history. Additionally, we outline potential contributors to the development of gout in this young, otherwise healthy patient.

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Poster #11

Presenter: Anne Ivie, MD, ATC, Mandy Maneval MD, PhD

Geisinger Medical Center

Submission Category: Case Presentation

Management of Patient with Pyruvate Kinase Deficiency During Pregnancy.

Authors: Anne Ivie MD, ATC; Mandy Maneval MD, PhD; William Crowder MD

Abstract: Pyruvate Kinase deficiency (PKD) is an autosomal recessive disease that can cause chronic hemolytic anemia. Two genes, PKLR and PKM, encode the PK enzyme which, when lacking in red blood cells, results in increased destruction and sequestration by the spleen. While mild anemia occurs frequently in pregnancy secondary to physiological dilution, pregnancy in PKD patients results in more severe anemia and requires different treatment. We discuss a case of a pregnant Amish female complicated by PKD with PKLR mutation, and chronic anemia. There are no published studies regarding optimal Hgb levels in PKD patients; however, case reports and anecdotal evidence support frequent blood transfusions to prevent placental insufficiency and associated problems. This patient's baseline Hgb prior to pregnancy was 9-12K/uL. The goal during her pregnancy was to keep her Hgb over 10 and her reticulocyte count suppressed. Frequent transfusions were performed, averaging every 3 weeks. We will discuss how and why these specific values were chosen. Further complicating her care were the cultural and socioeconomic factors to consider including the lack of insurance, high cost of prenatal care, and reluctance to undergo the common testing utilized in high risk pregnancies such as ultrasounds and fetal Non-Stress Tests. Ultimately our patient delivered a healthy female child who was not a carrier of PKD. This was a good outcome for mother and baby that is not often seen in pregnancies with maternal PKD. It was a great show of what was accomplished through a multidisciplinary approach and consultation with a team of medical professionals and scientists who have experience in caring for the Amish population, genetic disorders, and pregnancy.

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## Poster #12

**Presenter: Christa F. Patrick, DO**

**WellSpan Good Samaritan Hospital Family Medicine Residency Program, Lebanon, PA**

**Submission Category: Case Presentation**

### **Patient On Dual Antiplatelet Therapy Who Was Successfully Managed To Undergo Major Gynecological Surgery Within Seven Months Of Receiving A Drug-eluting Coronary Stent.**

Abstract Authors: Christa F. Patrick, DO; Abdul Waheed, MD. FAAFP; Erum Azhar, MD.FACOG

Abstract Introduction: No standard of care exists for perioperative care of patients with drug eluting stents (DES). There is risk of thrombosis after stopping antiplatelet therapy, and risk of intraoperative bleeding if antiplatelet therapy is continued. Most authors suggest postponing elective surgery <12 months of DES or bridge therapy in urgent cases. Case: An 84-year-old women presented to the ER with postmenopausal bleeding. Pelvic ultrasound revealed bilateral complex adnexal masses (right - 10cm X 8.4cm X 6cm; left - 8.2cm X 8.2cm X 7.2cm) and thickened endometrium. CA125 was 2289. Endometrial biopsy showed benign polyp. She was counselled for exploratory laparotomy and staging for suspected ovarian malignancy. Patient had a history of coronary artery disease, dyslipidemia, hypertension and a non-ST elevated Myocardial infarction seven months prior that was treated with angioplasty and DES in the left anterior descending coronary artery (everolimus). Her medications included metoprolol, simvastatin, amlodipine, lisinopril, aspirin and clopidogrel (plavix). Ovarian carcinoma is known to be associated with thromboembolic events. With this consideration, in addition to the patient having DES less than 9 months prior, the multidisciplinary team consisting of her family physician, cardiologist and gynecology oncologist determined that it was necessary to continue aspirin and plavix therapy perioperatively. The patient received two units each of platelets and fresh frozen plasma 12 hours prior to undergoing exploratory laparotomy, hysterectomy, bilateral salpingo-oophorectomy, omentectomy

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Poster #13

Presenter: Sonam T. Sherpa, DO

WellSpan Good Samaritan Hospital

Submission Category: Case Presentation

Pelvic girdle pain in a 66-year old female: An uncommon presentation of chondrocalcinosis

Authors: Sonam Sherpa, DO; Muhammad Khan, MD; Abdul Waheed, MD, FAAFP

Abstract INTRODUCTION: Calcium pyrophosphate crystal deposition (CPPD), also known as pseudogout, or chondrocalcinosis, is a disease often found in older men with an age-related increase in prevalence. This case is of a 66-year-old woman with a history of bariatric surgery who presented to the outpatient family medicine clinic with bilateral leg and pelvic girdle pain over the span of 2-3 weeks. METHOD: Initial history and physical exam revealed debilitating pain and weakness of the patient's bilateral legs with associated calf warmth and tenderness to palpation. A preliminary diagnosis of unspecified myositis was made, and the patient was instructed to hold her home statin therapy and begin taking oral prednisone. To rule out other diagnoses such as

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polymyalgia rheumatica, osteoarthritis, and Lyme myositis, several laboratory studies were ordered. These studies showed a normal Vitamin B12, Vitamin D 25 hydroxy, CK, ESR, CRP, ANA, and Lyme antibody. To further evaluate the patient's pain, radiographs of her bilateral hips, knees, and pelvis were performed. Radiography ultimately showed findings consistent with chondrocalcinosis. RESULTS: Following empiric treatment with oral prednisone the patient had partial resolution of her symptoms. These symptoms began to return within two weeks of completing her course of prednisone. Upon further imaging the patient was found to have results consistent with chondrocalcinosis in her bilateral lateral and medial menisci as well as her left hip. A referral to rheumatology was made and several more laboratory studies including PTH, alkaline phosphatase, and a urine calcium to creatinine ratio were ordered. Patient transitioned to colchicine successfully before her rheumatology appointment. CONCLUSION: This case is an example of an atypical presentation of chondrocalcinosis in a 66-year-old woman presenting with bilateral leg and pelvic girdle pain who was treated empirically with oral prednisone and was later found to have findings consistent with chondrocalcinosis on radiography.

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### **Poster #14**

**Presenter: Salma Mohammadi, DO**

**Wellspan Good Samaritan Hospital Family Medicine Residency**

**Submission Category: Case Presentation**

### **Ruptured Right Broad Ligament Ectopic Pregnancy in a Patient with Prior Right Salpingo-oophorectomy: A Case Report**

Authors: Salma Mohammadi, DO, Landen Green, DO, Abdul Waheed, MD, FAAFP, Erum Azhar, MD, FACOG

Abstract: Ectopic pregnancy can be a life-threatening cause of acute abdomen. This is a report of a 27-year-old G2P0010 female who presented with amenorrhea and acute right lower quadrant and pelvic pain. By LMP, she was 7 weeks and 2 days gestation. Her surgical history was significant for a right salpingo-oophorectomy for a right ovarian torsion of a large endometrioma and paratubal fallopian cyst. Physical examination showed severe right lower quadrant tenderness with guarding. Pelvic examination revealed tenderness in right pelvic area with no palpable adnexal masses. Urine pregnancy test was positive with serum beta-hCG of 28011. Transvaginal ultrasonography demonstrated an empty uterus and a gestational sac containing a fetal pole in right adnexal area. Crown rump length was 7.2 mm consistent with 6 weeks and 4 days with a positive fetal heart rate and moderate free fluid in the pelvis. Patient was taken for immediate diagnostic laparoscopy which revealed normal left fallopian tube and ovary and absent right fallopian tube and ovary with hemoperitoneum in the cul-de sac. There was an active bleeding site noted on the right broad ligament and pelvic wall close to the pelvic vessels. Hence, decision was made to convert to open laparotomy. Right uterolysis was done and hemostasis of the bleeding broad ligament and right pelvic side wall was established. An adherent tissue was dissected from the right broad ligament and sent to pathology. Patient received 2 units of PRBC intraoperatively with EBL of 2000 ml. Patient did well postoperatively. The final pathology showed ectopic pregnancy with immature chorionic villi in broad ligament and no fallopian tissue. Ectopic pregnancy in the broad ligament is a rare, life threatening form of abdominal pregnancy. We emphasize that this differential diagnosis be considered in reproductive-aged women who present with atypical presentations of ectopic pregnancy.

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## Poster #15

**Presenter: Hin Christine Lee, MD**

**St. Luke's Warren Family Medicine Residency**

**Submission Category: Case Presentation**

### **Toxic Shock Syndrome in Setting of Simultaneous Tampon and Copper IUD Use**

Authors: Deborah Stahlnecker DO, Amulia Chari DO, Hin Christine Lee MD

Abstract: Toxic Shock Syndrome is a rare disease and potentially life threatening condition mediated by superantigens that are most commonly produced by Staphylococci and Streptococci genera. Toxic Shock Syndrome has been associated with super-absorbent tampon use, infrequent replacement, and as of more recent, contraceptive sponge and diaphragm use. However, the case we present uniquely observes TSS in the setting of simultaneous Tampon and copper IUD use. A 25 year old menstruating female presented to ED in septic shock complaining of one day onset fever, blurry vision, dizziness, malaise, labored breathing, and left sided CVA tenderness. She received IV fluids and 1 g IV ceftriaxone for presumed pyelonephritis but, CT abdomen was eventually negative for pyelonephritis, revealing mild ileitis. Due to persistent hypotension despite fluid administration, vasopressors were initiated and patient was admitted to ICU. Tampon was removed shortly thereafter. Patient had persistent hypotension with SBP decreasing to 70 mmHg. Etiology of her rapid deterioration was unknown and empiric broad spectrum antibiotics were initiated. Day 2 of hospitalization, patient began to have cramping abdominal pain and several episodes of nonbloody watery diarrhea. Repeated lactic acid trended up to peak of 5.8. TSS was suspected from tampon use and IUD. IVIG Gammagard was administered. IUD was removed and lactic acidosis resolved. Early identification and prompt treatment are paramount in minimizing morbidity and mortality of TSS. We pose a unique case examining the simultaneous use of copper IUD and tampon leading to TSS.

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Poster #16

Presenter: Bu Jung Kim, MD

Geisinger Health Family Medicine Residency

Submission Category: Case Presentation

Varicella-Zoster Encephalitis In A Shingles Vaccine-Naive Patient

Authors: Bu Jung Kim, MD; Jason Woloski, MD

Abstract: Encephalitis is a serious pathology of the brain which carries increased risk of mortality and neurologic complications. However, only a handful of encephalitis cases are reported with known etiologies. Up to half of the known cases are due to neurotropic viruses, most commonly herpes simplex virus, varicella-zoster virus (VZV), enteroviruses, and arboviruses. This is a case study of 87-year-old woman with a past medical history of hypertension, chronic kidney disease, dyslipidemia, hypothyroidism, osteoporosis, and type 2 diabetes mellitus who was admitted due to sudden onset of altered mental status and fever. During hospitalization, patient complained severe pain on her back, which later revealed clustered vesicular lesions localized to sacral spine with one open vesicle. After obtaining lumbar puncture and wound culture, CSF analysis revealed pleocytosis and positive PCR for VZV, while sacral wound culture showed positive PCR for VZV as well. Upon reviewing her

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chart, it was noted that the patient had no record of VZV vaccination. After cultures returned positive for VZV, patient was promptly treated with acyclovir then valacyclovir. On hospital day 15, patient was discharged from the hospital after her vitals and mentation improved to her baseline. More than 1.2 million individuals are diagnosed with herpes zoster annually in the US. And it is widely known that older population has higher risk of developing herpes zoster due to declining cell-mediated immunity with age. Because of the increased risk and significantly high effectiveness (>90%) of Recombinant Zoster Vaccine (RZV) for prevention of herpes zoster, RZV administration for immunocompetent adults 50 years and older has been recommended by the CDC's Advisory Committee on Immunization Practices. This case report highlights varicella-zoster encephalitis, a possible serious complication of herpes zoster, in a VZV vaccine naive elderly patient.

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### **Poster #17**

**Presenters: Bagambhrini Gerace, MD, Jessica Parascando, MPH; Julie Radico, PsyD, ABPP**

**Penn State Hershey Medical Center Family Medicine Residency**

**Submission Category: Community/Public Health**

### **Are Penn State Residents Food Insecure?**

Authors: Bagambhrini Gerace, MD; Jessica Parascando, MPH; Arthur Berg, PhD; Tamara K. Oser, MD; Julie Radico, PsyD, ABPP

Abstract: Purpose: The demands of a medical residency can supersede normal health maintenance behaviors and increase the risk of health problems associated with neglect. The health and well-being of residents contributes to the health and well-being of their patients. The GME requires "access to food" for all residents while on duty. The Office of Graduate Medical Education (GME) at Penn State Hershey Medical Center (PSHMC) allots funds for hospital food in addition to a snack fridge that is available to residents when the cafeteria is closed. Methods: This longitudinal cohort survey assessed rates of food insecurity in PSHMC residents and factors predicting food insecurity using the Modified U.S. Household Food Security Survey: Six Item Short Form collected over three quarters via emailed survey. Results: The expected rate of food insecurity in a population matching income and education is 3-10%, however 24-25% of PSHMC residents were found to be food insecure. Food insecure residents reported more hunger and signs of low blood sugar while working ( $p=0.02$ ), ate fewer meals per shift ( $p=0.006$ ), were more likely to use the after-hours GME fridge ( $p=0.02$ ); reported less money on their food card than those who were food secure ( $p=0.007$  and  $p=0.005$ ) There was no difference in food insecurity at different points in the year or between post-graduate years. Conclusions: PSHMC residents have significantly higher food insecurity than what would be expected based on national data. Objective evaluation of food security rates and factors effecting food security in residents provides valuable insight into opportunities to further support resident wellness and education.

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Poster #18

Presenters: John P. Gaspich III, BS, Lindsay Buzzelli, BS

Pennsylvania State University College of Medicine

Submission Category: Community/Public Health

Case-Based Educational Model to Spur Interest in Health Professions

Authors: John P. Gaspich, III BS, MS2; Lindsay Buzzelli BS, MS2; Michael Flanagan MD; Mark B. Stephens MD, MS; Maryanne Neal RN, BSN, MEd

Abstract: Medical schools are creating programs to introduce careers in healthcare to students at earlier stages in their education. At the Penn State College of Medicine University Park Regional Campus, we have created and implemented a novel improvisational, case-based, small-group learning curriculum for high school students to introduce integrative thinking in basic, clinical, and health systems sciences as well as medical humanities to cultivate interest in health professions careers. A multidisciplinary team of educators with both secondary and post-secondary pedagogical expertise worked together to develop a longitudinal, case-based curriculum suitable for high school students. This curriculum was administered to a group of 40 students in grades 9-12. At the start of each session, students were challenged to explore biases, reflect upon ethical dilemmas, and step outside their comfort zones with "centering exercises." Through these activities, we challenged the learners' preconceptions about their colleagues, medicine, and their role within it. Students were then presented with a case as a large group. At critical junctures in the cases, students worked in small groups of 8-10 with 1-2 medical student facilitators to discuss questions and solve clinical, ethical, and humanistic dilemmas. Participants were engaged and increasingly interactive during these exercises. Selected cases highlighted the multidisciplinary nature of healthcare including careers within both greater- and lesser-known fields such as: physician, nurse, PT/OT, technician, medical office assistant, and healthcare administrator. The authors believe that by presenting students with real-world scenarios, an interest in the health professions is fostered in those who otherwise might not consider a career in healthcare. Additionally, we postulate that mentorship by near-peers provides students with practical information to increase success in both secondary and post-secondary education as well as in navigating this transition. Early feedback from students and faculty advisers about this proof of concept model has been decidedly positive.

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## Poster #19

**Presenter: Anne Sprogell, MD**

**Abington Family Medicine**

**Submission Category: Community/Public Health**

### **Designing an Effective Intervention to Decrease Loneliness in a Community Family Medicine Office**

**Authors: Susan Fidler, MD; Angela Kalinowski, MD; Aarisha Shrestha, DO; Carolyn Sciblo, MD; Anne Sprogell, MD; Kimberly Washington**

Abstract: A survey of 291 patients in our office at Abington Family Medicine revealed loneliness is a top concern among our patient population. The long term goal of our study is to reduce loneliness; however the short term goal of this pilot program was to host five group activities that would interest our isolated patients and reduce their loneliness. Loneliness was evaluated pre- and post-session with the validated 6-item De Jong Gierveld Loneliness Scale. Participants offered subjective

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feedback via written surveys about the activity itself. Group activities included a walk, 2 game nights, a yoga session, and a session on healthy eating around the holidays. 4 participants attended over 5 sessions. One participant showed a decrease in their De Jong Gierveld Loneliness Scale score. Our numbers are not high enough for statistical significance; however, this pilot program provided us with information about what activities would be good in future cycles and how to more effectively advertise and recruit. Attendance at our sessions improved after we started placing reminder phone calls. Our yoga and healthy eating sessions were the best attended. As we plan the second cycle this spring, we are focusing on methods to increase attendance, including trying new activities (eg., getting patients involved in volunteering with our community partners); advertising sooner; making advertising in the waiting room more obvious; training residents, medical assistants, front office staff, and nursing in recruiting patients; and evaluating barriers that prevented patients who signed up for events from attending. Our ultimate goal is to gather enough data to show a statistically significant trend in patients' Loneliness Scale scores. As our project extends over years and the number of attendants increases, we hope to analyze the association between loneliness score and health outcomes.

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Poster #20

Presenters: Don Davis, MD, Farah Vayani, MD; Rajan Joshi, MD; Mandeep Singh, MD; Rajbir Grewal, MD

The Wright Center for Community Health

Submission Category: Community/Public Health

Prevalence of Hypertension Amongst Obese Patients in NEPA

Authors: Don Davis, Farah Vayani, Rajan Joshi, Mandeep Singh, Rajbir Grewal, Sonam Patel

Abstract Statement of Purpose: Obesity is a global epidemic that is linked with many chronic illnesses and associated with an increased morbidity and mortality. It is the number one cause of preventable disease and disability in the United States (US). Obesity is a known risk factor for hypertension, hypercholesterolemia, and diabetes mellitus. The primary objective of the study is to determine the prevalence of hypertension (those with an active diagnosis of hypertension) amongst obese patients (BMI = 30.0 kg/m²) between the ages of 18 and 70 in the local population served by the family medicine residency program at the Wright Center for Community Health. **Methods:** This is a descriptive cross-sectional study using an electronic medical review of 12, 452 randomly selected limited data set obese patients. The study location will include three outpatient clinics (Kingston Practice, Children Services Center, and Old River Road) in Luzerne County of North Eastern Pennsylvania (NEPA) served by the family medicine residents of The Wright Center for Community Health. These patients will be randomly selected for inclusion in the study based on certain criteria. Assigned investigators in the study will then review these charts and determine those who have an active diagnosis of hypertension by looking at the problem list and/or reviewing their medications. The main study outcome measure or dependent variable will be an active diagnosis of hypertension and the independent variable will be obesity. **Results:** Male obese subjects were found to have a higher prevalence of hypertension compared to female obese subjects. The prevalence of hypertension was also found to increase as the BMI range increased. Furthermore, the measured effect through odds ratio showed that male obese subjects had a 2-fold increased risk of

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hypertension compared to female obese subjects. Conclusions and implications for future research: The prevalence of obesity is known to be on the rise. Our current local population is amongst one of

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### **Poster #21**

**Presenter: Michael Shu, Henning Ander, MA**  
**Lewis Katz School of Medicine at Temple University**  
**Submission Category: Community/Public Health**

#### **Providing Nutritional Education Through a Medical Student-Run Bridge Clinic to Address Food Desert Consequences in North Philadelphia**

Authors: Henning Ander, MA; Leah A. Goldberg, MA; Sophia Mercadante; Michael Shu; David O’Gurek, MD; Margot Savoy, MD

Abstract Statement of Purpose: In the United States, food deserts and food swamps are systemic public health issues that contribute to adverse health outcomes. North Philadelphia residents have limited access to fresh and nutritious foods, and instead an abundance of fast food chains and corner stores, designating the area as both food desert and swamp. The THRIVE Bridge Clinic is a medical student-run clinic that operates at a shelter in North Philadelphia for men experiencing homelessness and recovering from substance use disorders. Clinic leaders learned that shelter residents perceived the food options as a barrier to their health. Methods: Aware of decreased access to nutritious foods, members of the THRIVE Bridge Clinic sought to improve nutritional awareness as a means to mitigate the negative effects of living in a food desert. Clinic leaders, physician advisors, and members of the Temple Culinary Medicine Initiative student organization collaborated to organize a nutrition session. The session consisted of a presentation and a volunteer-cooked meal for the residents. The lesson plan was prepared by students and led by a physician advisor with expertise in nutrition. Results: The nutrition session received positive anecdotal feedback from shelter residents and promoted follow-up opportunities where clinic staff were able to connect patients with access to nutrient-rich foods. For example, clinic leaders assisted the shelter in applying to Food Connect, which is a non-profit that helps restaurants donate their extra food to local community shelters. Conclusions and Implications for Future Research: Food deserts disproportionately impact the health of populations living in low-income areas. Nutritional education allows medical student-run bridge clinics to play a role in mitigating the impact of food deserts on individual health. Approaches must be sensitive, collaborative, and offer longer-term ways for people to access nutritious foods. Ultimately, structural improvement regarding issues of food insecurity and access requires large-scale changes in both policy and access.

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Poster #22

Presenters: Renata Carneiro, PhD, Rehb Tabchi, DO
Sacred Heart at St. Luke's University health Network
Submission Category: Community/Public Health

Trick or Treat: the spider web of psychological trauma and chronic medical conditions

Authors: Renata Carneiro, PhD and Rehab Tabchi, DO

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Abstract: Psychological trauma can be tricky to treat in the primary care setting and especially residency. Residents have limited time between appointments and scarce knowledge of psychological trauma. However, during the community medicine block, residents are exposed to a variety of community issues, such as school shootings, domestic violence and other adverse events that affect patients' lives. Psychological trauma exposure is like a spider web invisibly affecting many areas of a patient's life contributing to exacerbation of physical symptoms such as hypertension, diabetes and hepatitis. Our family residency program, St. Luke's at Sacred Heart, is located in Allentown, Pennsylvania providing services for an urban population with high indices of trauma exposure. The majority of our patients are immigrants, who suffer from multiple chronic conditions and mental health. During the community medicine block, our residents are required to choose a topic on community medicine to present after their rotation. Data from the past four years indicated that our residents addressed chronic medical conditions such as diabetes, hepatitis and hypertension. However, none of them have addressed trauma informed care (TIC). Using an applied research methodology we combined the expertise of two faculty members to include Trauma Informed Care as part of the requirement for community medicine to help residents make the connection of psychological trauma to chronic medical conditions. During the presentation we will offer practical solutions to include Trauma Informed Care in the community medicine curriculum.

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### **Poster #23**

**Presenter: Henning Ander, MA**

**Lewis Katz School of Medicine**

**Submission Category: QI**

### **A Peer to Peer Learning Model to Vertically Integrate Clinical Education in Medical School**

Authors: Leah A. Goldberg, MHS; Henning Ander, MA; V. Laavanya Divakaruni, BS; David E. Link, MD; Jani L. Swiatek, BS; David O'Gurek, MD; Margot Savoy MD;

Abstract Statement of Purpose: Medical school curricula have historically been divided between pre-clinical and clinical years. However, many students seek clinical exposure at the beginning their medical education, and there are few opportunities for pre-clinical students to work directly with clinical students. The THRIVE Bridge Clinic's model capitalizes on peer to peer education and allows for vertical integration of clinical education across all years of medical school. Methods: A medical team was based on a former student-run clinic at the university and designed using input from students in every class (MS1-MS4) and physician advisors. Pre-clinical students collect the patient's medical history and perform a physical exam, while clinical students write notes in an EMR and assist with formulating a differential diagnosis and treatment plan. This team-based approach allows pre-clinical students to see the clinical application of their coursework, encourages clinical students to hone their teaching skills, and bridges the gap between the pre-clinical and clinical curriculum. Results: In the clinic's first year, students from all classes adjusted the medical team flow as needed. Because presenting cases and writing note were slowing clinic flow, "fourth year workshops" focused on those areas were offered, which 61 first- and second-year students attended. These created another opportunity for peer to peer clinical skills education, while also improving the clinic flow. Modeling after this current success, resident physicians have been included as volunteers. This collaboration prepares fourth year students for intern year and encourages resident physician involvement with medical education. Conclusions: From December 1st 2018 to December 1st 2019, 50 upper year and 135 lower year students volunteered at the THRIVE Bridge Clinic. Future

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directions include surveying third- and fourth-year students on ways to improve their own teaching and assessing student and faculty ideas for continued enhancement of medical education at the student-run clinic.

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Poster #24

Presenter: Neeti Kothare, DO

Forbes Family Medicine Residency, Allegheny Health Network

Submission Category: QI

Abdominal Aortic Aneurysm Screening for Preventative Care in Smokers

Authors: Neeti Kothare, DO, Amrit Riarh, MD

Abstract: Abdominal aortic aneurysm (AAA) rupture is the fifteenth leading cause of death in the United States and tenth leading cause of death in men older than 55 years. The U.S. Preventative Services Task Force (USPSTF) recommends a one-time screening for AAA with ultrasound (US) in men ages 65-75, who have ever smoked. Screening in elderly men has shown reduction in disease specific mortality and aneurysmal rupture, the benefit is greater in men who have ever smoked. Screening rates in our office at Forbes Family Medicine in Monroeville, PA have been low. This project seeks to improve AAA screening rates through education aimed towards residents, faculty and staff. Efforts to improve screening included a reminder to residents and health coaches of the recommendation and which US order to place in Epic EHR. US AAA Screening was added to the healthcare maintenance tab in Epic EHR to serve as a reminder to order the screening for eligible patients. Lastly, a presentation was provided at the residency practice management meeting to educate on the importance of screening and documenting smoking history. Screening rates for six months of intervention (05/15/2019-11/15/2019) were compared to the previous six months (11/15/2018-5/14/2019). The findings of this study show that there was a statistically significant increase in the number of Ultrasounds ordered for AAA screening ($P= 0.0006$; 95% CI 4.5984 % to 16.2345%) after the implemented interventions. This study has the potential to provide a guide to primary care offices on improving AAA screening rates. Future studies include researching how many AAAs were diagnosed post-intervention. Increase in AAA screening also allows for improved AAA monitoring and prevention of rupture. By identifying patients at risk for and with AAAs, providers can further focus on disease-modifying interventions such as blood pressure, lipid control and smoking cessation.

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### **Poster #25**

**Presenter: Cynthia Ciccotelli**

**Geisinger Commonwealth School of Medicine**

**Submission Category: QI**

### **Addressing the Code Status at Robert Packer Hospital**

Authors: Cynthia Ciccotelli, Gabrielle Prezkop, John Baranoski, Timothy Corcoran, Ravi Kumar MD, Donielle Park RN



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Abstract: The development and implementation of the Electronic Medical Record (EMR) has led to improvements in the way that patient care is managed. In particular, the EMR has demonstrated its usefulness by becoming a decision support application, helping physicians to detect critical lab work and results, and also become more aware of potential errors in patient care. If the EMR is effective at encouraging compliance with regular health maintenance screens and testing, would the same results be demonstrated when we consider an individual's code status? Would more frequent conversations about code status occur in both the hospital and primary care setting if, the first time a patient's chart was created in a health system, code status had to be addressed? Our QI project attempted to "hack" the EMR to ensure that important conversations regarding a patient's code status occurred. We first restored every patient in the Guthrie system from default "full code" to default "code unknown." We then created a "pop-up" window that acted as a hard stop for clinicians in the hospital when admitting a patient to their service. They were asked questions regarding the patient's code status, and each floor received daily emails about which patients needed their code status addressed. Furthermore, we eliminated the automatic reset back to full code 30 days from discharge. Results showed that there was an increase in code status discussions. Limitations include that it is unclear how many providers simply clicked through the questions instead of talking to their patients. There were also many patients with scanned advanced directives indicating DNR/DNI status that were "full code" while admitted to the hospital. Future research into effective ways to continue initiating DNR/DNI conversations is important to ensure patients are receiving adequate treatment.

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Poster #26

Presenters: Vera Allotey MD, Geny Augustine, MD

St. Luke's University, Sacred Heart Campus

Submission Category: QI

Hypertension: Improving patient care in an urban environment

Authors: Vera Allotey MD, Geny Augustine MD and Nandhini Veeraraghavan MD, FAFP

Abstract: Hypertension is the most commonly diagnosed primary condition in the United States, affecting approximately 75 million American adults. It is a major risk factor for vascular disease, stroke, chronic kidney disease and myocardial infarction however it's thought that only 54% of people with hypertension have it under control. Our outpatient practice lies in the heart of an Urban city where this disease runs rampant. The national burden of this condition is estimated to be \$48.6 billion a year due to the cost of health care services, anti-hypertensive medications and missed days off work. The goal of our Quality Improvement project was to improve patient care through 3 different initiatives: 1) educating our patients regarding hypertension, 2) educating ourselves as physicians and 3) identifying risk factors for hypertension and implementing directed counseling for our patients. 175 individuals with an established diagnosis of hypertension in our practice were identified. Data was gathered on known risk factors for hypertension including smoking cessation, alcohol use, nutrition (specifically adherence to a low salt diet), physical activity, whether patients were at the target blood pressure based on JNC 8 guidelines (as endorsed by the AAFP) as well as recommended screening such as urine microalbumin/creatinine ratio and lipid panel. This was captured using specially designed macros built into our EMR system. Patients were given handouts on the basic principles of the DASH diet and exercise recommendations and physicians within the practice were educated and provided with personal pocket guides with JNC 8 hypertension

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treatment guidelines. This study took place over a period of 6 months and the results which are being collected will be available at the time of the poster presentation. The next phase of our project which is underdevelopment involves implementing mindfulness as a tool for managing hypertension.

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### **Poster #27**

**Presenters: Ansa Anderson, MD, Nikole Czapp, MD**  
**Drexel College of Medicine/Tower Health Family Medicine Residency**  
**Submission Category: QI**

#### **Implementation of Patient-Centered Team-Based Care in a Family Medicine Residency Program**

Authors: Ansa Anderson, MD; Nikole Czapp, MD; Annette Gadgbeku, MD

Abstract Statement of Purpose: To implement and establish a team-based care model which in turn should improve staff/physician satisfaction of workflow within the office and ultimately create a more supportive patient care environment. Methods: Three teams will be established, each consisting of residents, attendings and medical assistants. Each day, at least one provider from each team (resident or attending) will be present in the office. This will allow for cross coverage of tasks, paperwork and patient care within a single team. Additionally, we plan to develop a document clearly identifying roles within the practice and proper utilization of other team members with the goal of enhancing patient care. Anonymous questionnaires will be distributed to all participants to measure baseline satisfaction of current office workflow and communication between staff members as well as satisfaction with continuity of care. Participants will include residents, attendings, medical assistants, front desk and managers to assess the current satisfaction with delivery of care within the practice. Following collection of this data, we will begin to implement team based scheduling within the office. We plan to redistribute surveys and measure post-intervention satisfaction, again using anonymous questionnaires, after a 3 month period. Brief statement of results: This research is currently in progress and results presented will highlight the establishment of teams within the current scheduling system as well as pre-implementation survey data which we hypothesize will highlight the deficiencies in the current non-team based model. Conclusion: We hope to see a change and improvement in communication and overall workflow satisfaction within the practice at all staff levels. Implications for Future Research: The importance of continuing research in this area of medicine remains open due to the need for improved office work flow and team based care approach to improve continuity of care for better patient outcomes.

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Poster #28

Presenter: Lynn Weaver, MD
Penn State Hershey
Submission Category: QI

Improving Diabetic Eye Screenings: A Multipronged Approach

Authors: Karl Clebak, MD; Chloe Courchesne, MD; Kenyetta Givans, MD; Michael Partin, MD; Lynn Weaver, MD; Christopher Davis, MD; Kaylette Jenkins, MD

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Abstract: In 2015, epidemiologic studies estimated that 30.3 million people in the U.S. carried the diagnosis of diabetes representing 9.4% of the population.¹ Diabetic retinopathy, a commonly encountered complication of diabetes, is responsible for the most frequent cause of new cases of blindness in adults aged 20-74 years old.² Over 60% of patients with type 2 diabetes will have retinopathy within two decades of disease onset.² Early detection of retinopathy with yearly screenings can lead to timely initiation of treatment, which can slow disease progression and prevent vision loss. The Penn State Health Medical Group's goal is to ensure yearly diabetic retinopathy screenings to all patient with type 2 diabetes. However, preliminary data collection from one clinic location within the health system revealed that only 51% of patients with type 2 diabetes had a documented eye exam within the previous year. Therefore, our aim is to utilize quality improvement methodologies within this clinic to improve screening rates. Eye exam screening rates from type 2 diabetics were obtained monthly and analyzed. Several interventions were designed to target both physicians and patients. Physicians were re-educated regarding eye screening guidelines and protocols. Signs were placed in patient rooms to prompt staff as well as diabetic patients to have a yearly eye exam. Finally, patient handouts were implemented to streamline receipt of outside records. After four months of data collection, the percentage of patients with documentation of a yearly eye exam increased by 4%. Results may further be potentiated with longer term follow up. Future work includes additional integration of on-site eye screenings into clinical workflows.

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### **Poster #29**

**Presenter: Sarah Stovar, MD**

**Penn State Hershey Medical Center Department of Family and Community Medicine**

**Submission Category: QI**

### **Improving HPV Vaccination Rates Through Inter-Office Competition: A Quality Improvement Initiative**

Authors: Sarah Stovar MD, Timothy Riley MD, Kevin Wile MD

Abstract: Human papilloma virus (HPV) is a cause of preventable cancers. The CDC recommends HPV vaccination for all children ages 11 to 15. The Penn State Health Family Medicine residency sites at Hershey (suburban), State College (rural) and Reading (urban) had initial 12-month HPV vaccine exposure rates of 43.1%, 23.8%, and 41.9% respectively, all below the national average of 60%. Prior research demonstrated improvement in HPV vaccine exposure through multi-modality quality improvement (QI) efforts including enhancement of provider knowledge regarding the vaccine. We sought to increase HPV vaccine exposure among adolescents in multiple residencies through a QI project focused on enhancing provider knowledge regarding exposure rates in the clinics along with educating residents on various aspects of office-based quality improvement projects. Provider, nurse, and office staff knowledge was enhanced through monthly run charts with 12-month rolling averages of HPV vaccine exposure rates for 11 to 15 year-olds for each office. This was displayed in a non-patient care communal area in all practices on identical 3x4 foot posters with the run charts for each office ranked based on their degree of monthly improvement from baseline to foster friendly competition. Team members brought attention to the poster and competition at meetings and through emails. Additionally, a pizza party was promised for the office who improved the most from that site's respective baseline after 6 months. Preliminary results demonstrate a positive trend in two out of three offices. These data suggest that a single-mechanism QI intervention to foster

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friendly competition between diverse residency sites by increasing awareness of HPV vaccination may be effective at improving exposure rates in adolescents. Additionally, we have demonstrated an effective system of tracking HPV vaccination rates that will allow for future interventions to continue improving vaccination.

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Poster #30

Presenters: Isabella Brout MD, Cramer McCullen MD

University of Pennsylvania Family Medicine Residency

Submission Category: QI

Improving practice compliance with controlled medication agreements for patients on chronic opioids: a QI based approach

Authors: Cramer McCullen MD, Stephen Iannacone MD, Allison Myers MD, Joseph Teel MD

Abstract: Yearly patient-physician controlled medication agreements (CMA) are a quality improvement metric recommended by the 2016 CDC Guideline for Prescribing Opioids in Chronic Pain. As of January 2020, CMAs are also mandated under the Pennsylvania Act 112 for all patients on chronic opioid therapy. With the goal of mitigating risk, education and strengthening accountability between patients and providers, CMAs have been associated with a reduction in the misuse of prescribed opioids (Starrels et al.). Our objective was to use QI methodology to increase CMA compliance for patients on chronic opioids (defined as: patients prescribed >90 days of opioids over a period of 180 days) at a Family Medicine academic practice. We utilized an EMR-based dashboard to identify patients, chart reviews were completed to validate the dashboard and targeted clinical provider interviews were used to analyze barriers. An RCA revealed a lack of standardized CMA protocol to be the reason for poor compliance. Three distinct PDSA cycles were implemented: (1) altering medical records scanning protocol, (2) implementation of a new practice CMA, and (3) two distinct cycles of CMA reminder messages were sent to applicable providers. Our results showed an increase in CMAs compliance. At the start of our project, 22% of patients on chronic opioids had an active CMA (29 of 128). Five months after the intervention, 65% of patients on chronic opioids had an active CMA (76 of 116). We hope to sustain these efforts by engaging providers in self-monitoring via the dashboard, having pharmacy staff complete periodic reviews of the dashboard data and including yearly CMA as requirements on our EMR's health maintenance reminder system. Our ultimate intent is to explore whether increased CMA compliance will lead to a reduction of number of opioid tablets prescribed, total MME, and the number of patients on opioids.

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## Poster #31

**Presenter: Derek Baughman, MD**

**WellSpan Good Samaritan Hospital Family Medicine Program**

**Submission Category: QI**

### **Mitigating Low Acuity Emergency Room Utilization With Walk-in Clinic Hours: A Cost Reduction Strategy For Primary Care Provider (PCP) Offices**

Authors: Derek Baughman, MD, PGY1; James Nicholson, MD; Julie Roth, SPM; Abdul Waheed, MD, FAAFP

Abstract Statement of Purpose: Unnecessary Emergency Department Utilization (EDU) contributes to high costs of healthcare in US. Current literature highlights gaps in healthcare literacy due to social determinants, but there is scarcity of economic analysis regarding implementing Walk-in Clinic Hours (WCH) in PCP offices as an intervention for decreasing low acuity (LA) EDU (and consequently, decreasing cost of care). Methods: In a retrospective, cross sectional study of ED visits from patients established at our PCP office, we analyzed EDU. LA was defined as an Emergency Severity Index (ESI) of 4 or 5. An ESI was assigned for each Emergency Department (ED) visit according to the Agency for Healthcare Research and Quality's algorithms. A LA visit rate was calculated monthly  $[LA/(ESI \text{ visits } 1-5)]$  for pre-implementation of WCH availability at our PCP office; rates were compared to LA EDU post-implementation of WCH. Gross walk-in visit numbers were also tracked. Results: We found a 5% gross annual EDU reduction in patients from our PCP office after WCH implementation (5926 in 2018, 5614 in 2019) with a concomitant increase of walk-in utilization in 2019 (quarterly data, Q1: 362, Q2: 534 Q3: 571 Q4: 633). As data is still in collection through January 2020, by the time of presentation, we expect our final analysis to reveal a decreased rate of LA EDU compared to pre-implementation of WCH. We also expect a cost reduction projection with rate analysis to compare the high frequency, LA ED visits to a corresponding outpatient management. Conclusions: WCH is a viable cost saving measure for mitigating cost of LA care. Implications for future research include expanding WCH implementation to additional in-network PCP offices to trend LA rates, more accurately approximate cost saving projections, and pose a stronger argument for endorsing WCH in PCP offices as a prudent approach for LA care.

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Poster #32

Presenter: Adrian Wang, MD

Lancaster General Hospital Family Medicine Residency

Submission Category: QI

Primary Care Interventions to Assess Emergency Department Utilization for Low Acuity Musculoskeletal Complaints

Authors: Adrian Wang, MD, Margaret Nepps, PsyD, Benjamin Stabler, MD, Giacomo Geloso, Kellie Bresz, Michael Horst, PhD, MPHS, MS

Abstract: Emergency departments (ED) in the United States experience approximately 130 million encounters every year (1). A significant portion who present with low acuity complaints make five or more ED visits a year (2). Musculoskeletal complaints, including back pain, comprise one of the top ten complaints (3). The purpose of this project was to measure and reduce low acuity ED visits for musculoskeletal complaints. A secondary purpose was to judge patients' perception of the

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availability and utilization of the primary care physician (PCP) office and urgent care. ED visit data for triage level four and five musculoskeletal complaints by continuity patients of our family medicine residency was collected pre and post intervention. Interventions included telephone calls, providing musculoskeletal exercises and treatment materials, and digital graphic displays. Telephone calls assessed perceptions of PCP and urgent care accessibility and services provided. Patients were also assisted in scheduling PCP follow up and given urgent care availability information. Patients presenting to our clinic for musculoskeletal complaints received exercise bands, body part specific exercises and stretches, reusable compresses, and information regarding local healthcare access and common medications. In the pre-intervention period, there were 1596 low acuity musculoskeletal presentations to the ED, in the post-intervention period, there were 1556 (p value 0.977). Back and leg pain were the most common complaints. The majority of patients did not attempt to contact their PCP office prior to presentation. Patients perceived they would get adequate and better care through their PCP or urgent care. After learning of hours and availability, a large portion stated they would utilize their PCP or urgent care instead of the ED. Presentations for lower acuity ED complaints, especially musculoskeletal, have potential to be reduced. Future interventions could focus on patient education and perceptions regarding services offered at PCP and urgent care offices.

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### **Poster #33**

**Presenter: Karen Lazarus, DO, MPH**

**Dimitry Belogorodsky, DO; Tina Chuong, DO; Alyssa Style, DO; Meera Shah, DO, MBA**

**Abington Jefferson Health Family Medicine Residency**

**Submission Category: QI**

### **Provider Comfort and Utilization of OMT in Practice**

Authors: Dimitry Belogorodsky, DO; Tina Chuong, DO; Karen Lazarus, DO, MPH; Alyssa Style, DO; Meera Shah, DO, MBA

Abstract: As osteopathic physicians move away from regular education and practice of OMT in medical school to residency, maintaining skills and learning new techniques can be challenging. We have designed a quality improvement (QI) project for our residency program with the goal of assessing resident physician comfort treating several common conditions with OMT before and after targeted education and demonstrations. These common conditions include: headache, asthma and CODP, shoulder pain, back pain and constipation. Physician comfort with treating these conditions pre-and post-education will be measured with surveys utilizing numerical rating scales. Pre-education surveys were administered in August 2019 and post-education surveys will be collected in Spring 2020. Education on various techniques for the aforementioned conditions will be provided by the resident physicians who have created PowerPoint presentations demonstrating OMT maneuvers specifically tailored to treat each problem. This is followed by live demonstration and practice of the techniques discussed. Presentations occur approximately once per month and are recorded for future use. Overall, the goal of this project and the educational presentations is to ensure resident physicians are confident and proficient in several “go to” techniques for common complaints frequently seen at the Abington Family Medicine OMT clinic. We also hope to raise awareness and comfort among the residents, faculty, and patients who are less familiar with OMT practices.

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Poster #34

Presenters: Peter Cognetti, MD, Aaron Palmquist, MD

Drexel Family Medicine Residency Program

Submission Category: QI

Screening for Housing Insecurity on Inpatient Service

Authors: Cognetti MD, Peter; Palmquist MD, Aaron

Abstract: The aim of our study is to improve and standardize the way our team screens for housing insecurity on the Drexel Family Medicine inpatient service. We aim to achieve that by adding a housing insecurity template to all of our admissions to our service at Chestnut Hill Hospital and to document diagnosis appropriately. We hypothesize that this will significantly increase the comfortability of the residents discussing housing insecurity with their patients and in turn, will increase the percentage of patients getting screened appropriately and provided adequate resources. All Drexel Family Residents will be given a pre survey to evaluate how comfortable they are with screening for housing insecurity. They then will be given a 20 minute lecture on housing insecurity concerning how to properly screen for housing insecurity and document accordingly. We will attempt to screen all the patients admitted to Drexel Family Medicine service and after 4 months of implementing the new screening protocol below, the residents will be resurveyed concerning their attitudes and comfortability of housing insecurity screening. We will be using a set template to screen for housing insecurity. The first 2 questions were taken from the AAFP Social Needs Screening Tool. The third question was developed by the investigators to help us further investigate the degree of housing insecurity. Out of the 19 residents that participated in the pre-survey, 35.71% of residents were uncomfortable with discussing housing insecurity with their patients. 21.43% were uncomfortable with providing information regarding housing insecurity and 21.43 were somewhat uncomfortable. 14.29% of residents do not ask about housing insecurity and document accordingly and 50% of residents reported rarely asking about. 50% of residents rarely ask about ability to pay rent and 42.86% never asked. 50% of residents never asked about ability to pay utilities and 42.86% of residents rarely asked about patients' ability to pay utilities.

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## Poster #35

**Presenters: Ken Zhang, MD, Courtney Humphrey, MD**

**St.Luke's University Health Network**

**Submission Category: QI**

### **Targeting the silent killer**

Authors: Ken Zhang MD, Courtney Humphrey MD

Abstract Statement of purpose: This is a quality improvement project aimed to identify and target shortcomings in management of hypertension at a family medicine residency clinic. Methods: This is a single-center study approved by the institutional review board. A retrospective chart review was performed in a family medicine residency clinic. Initial data was reviewed over a 3 month period and analyzed using the Hypertension Metric Module. Areas of deficiency were identified and targeted using a designed protocol including but not limited to a physical check-list (made available in English,

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Spanish and Vietnamese, the 3 most common languages in our patient population) and an EMR smart phrase during the 3 month implementation period. Post-intervention data was analyzed using the same method. Results and Conclusion: Areas targeted revolved around lifestyle modification counseling as well as screening for nephropathy. The rate of DASH diet counseling increased from 35% to 41.6%. The rate of low sodium intake counseling increased from 30% to 42%. The rate of exercise counseling increased from 23% to 43.5%. The rate of appropriate urine microalbumin screening increased from 35% to 47.6%. The improvements seen are encouraging. As we refine and facilitate a clinic wide approach we anticipate this positive trend to continue. Implication for future research: A systematic approach to management of a common condition improves and helps facilitate comprehensive care coordination. A clinic wide approach can create safety checks to reduce missed screening opportunities and delayed interventions. A patient centered approach focused on patient initiated intervention creates a strong patient-team partnership, encourage patient ownership of their medical condition and improve compliance. Similar intervention may be implemented for other commonly seen chronic conditions such as diabetes, obesity and other metabolic syndromes that require frequent assessment and counseling.

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Poster #36

Presenter: Omar Bukhari DO

UPMC Altoona Family Medicine Residency

Submission Category: QI

TDAP Vaccination Rates in Pregnancy at the Altoona Family Physicians Clinic

Authors: Dr. Omar Bukhari D.O. PGY2, Dr. Amy Swindell D.O., Dr. Amanda Cattoi M.D., Dr. Jacquelin Fabina D.O.

Abstract: Background: Vaccinations are very important in pregnancy. The Tetanus, Diphtheria, and acellular Pertussis (TDAP) vaccination is important during pregnancy to maintain health in the newborn and protect against these highly dangerous diseases of childhood. Hypothesis: The TDAP vaccination rate at the AFP clinic is above the national average. Methods: We calculated the current TDAP vaccination rate and found common reasons of refusal. Sample population were AFP clinic pregnant patients. Through EPIC chart review, data was collected until 2018. Results: We had 130 individuals at the AFP clinic who fell into our study. 22 individuals did not receive the TDAP. The TDAP vaccination rate during 2017 to 2018 was $(130-22)/130 = 83\%$. Main reasons for not receiving TDAP vaccine included being lost to follow up, declined vaccination with no reason documented, pregnancy complications such as ectopic, or refusal due to nonvaccination of children. Conclusion: We found that the AFP clinic vaccination rate was about 83% in 2018. The national average for TDAP vaccination according to the Centers for Disease Control is 54%. Therefore, the AFP clinic exceeds the national average for TDAP vaccination rate. Acknowledgements: Thank you to Marylou Conway for help with data collection.

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## Poster #37

**Presenter: Angelica Montes, MD**

**LGH Family Medicine Program**

**Submission Category: QI**

### **The Effect of Language on Ordering CT Head Scans for Dizziness in the ED**

Author: Angelica Montes, MD

Abstract: In the United States, Hispanic/Latinos accounted for 16.5% of ED visits in 2015. Approximately 38.5% of the population of Lancaster City is Hispanic/Latino. As a result, Spanish is a language commonly encountered in the population. There have been studies looking at health disparities among Hispanics with limited English proficiency (LEP). In 2014, a study looked at the effect of Hispanic ethnicity and LEP on the rates of appendiceal perforation in children and it showed Hispanics with LEP were more likely to have appendiceal perforation compared with English-speaking non-Hispanics. In addition, Hispanics with LEP have a significantly lower rate of advanced imaging compared with English-speaking non-Hispanics. Variations in vocabulary may also significantly impact communication. The word mareado can be used to mean dizzy, queasy, or seasick depending on regional variations of Spanish. For patients 65 years and older, vertigo/dizziness was among the ten leading principal reasons for the visit among females in the US. With the high frequency of dizziness as a chief complaint in the ED and the variation of the meaning of mareado, there is a potential area of misunderstanding among Hispanic patients with LEP. In a retrospective analysis, Spanish-speaking patients were compared to English and non-English/non-Spanish speaking patients that had a chief complaint of dizziness. There were 6,660 ED visits with a complaint of dizziness and of those 2,550 received a CT head scan. Study variables included: age, gender, census tract, social vulnerability index (SVI), time since last head CT, and time of arrival. The vulnerable population was defined as SVI >0.9 and totaled 1,042 patients. Within the vulnerable population, Spanish-speaking patients had higher rates of CT scans (odds ratio 1.47, p value 0.01) compared to the other populations. Further work is needed to develop an intervention among ED providers to help standardize ordering practices for CT scans.

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Poster #38

Presenters: Sara Majeed, MD, MBA, Renata Carneiro, PhD

St. Luke's Sacred Heart Family Medicine Residency Program

Submission Category: Research Design

Burnout: Sexism and Work Related Assumptions

Authors: Sara Majeed, MD, MBA, Renata Carneiro, PhD

Abstract: Despite many publications on burnout among residents, a few studies focus on the phenomenological experiences contributing to burnout. This pilot phenomenological qualitative study conducted at St. Luke's Sacred Heart Family Medicine Residency Program aims to understand the factors leading to burnout among male and female residents. Participants were recruited via emails and divided into two groups based on sex. We met with these participants in focus groups to explore causes that lead to their burnout. All participants were asked one open ended question, and given the opportunity to process their experiences with the group. All participants (n=) who attended the focus group were included in this study. Responses were coded in terms of themes.

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Two independent coders were used. We learned that there are some similarities in the experiences of both male and female residents such as long working hours. However female residents felt pressured to perform well in their duties at work and at home. Assumptions made by staff and patients about their roles as physicians, family and societal expectations, judgement towards female residents who chose to work after having children were common themes contributing to burnout. Male residents reported insurance paperwork such as prior authorizations take away from patient care. Working with toxic personalities, home responsibilities including wedding planning and job search were common themes contributing to their burnout. Both male and female residents cited support from faculty as a protective factor against burnout. This study highlights the importance of acknowledging sex differences and need for targeted gender sensitive training to combat burnout.

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### **Poster #39**

**Presenters: Natalia Lapko, MD, Renata Carneiro, PhD**

**St. Luke's Health System Network**

**Submission Category: Research Design**

### **Family Ties: Including program coordinators in wellness initiatives**

Authors: Renata Carneiro, PhD, Natalia Lapko, MD & Cindy Fritz

Abstract: From recruiting efforts to graduation, program coordinators are the pillars of residency programs. In residency, program coordinators are intimately involved in the professional development, personal lives and overall well-being of residents, including the implementation of wellness initiatives designed to improve residents' and physicians' well-being. Although program coordinators play a central role in the functioning of residency programs, there is a scarcity of information in the literature regarding program coordinators' own well-being. Often, program coordinators are not included in wellness initiatives, which are typically targeted exclusively for physicians or residents. This pilot study aimed to assess program coordinators' burnout in the St. Luke's University Health Network residency programs by using the same tool to address program coordinators' well-being that was formerly employed to evaluate physicians in residency programs. An anonymous survey, composed of demographic inquiries and the Abbreviated Maslach Inventory, was sent to all program coordinators, eighteen total, within the St. Luke's network. The Abbreviated Maslach Inventory, however, was modified to reflect the program coordinator occupation. Sixteen participants completed the survey. Results indicated that program coordinators, like residents and other physicians, experience burnout and high levels of emotional exhaustion. Participants also received an open-ended follow-up question which requested the program coordinators to list three major contributors of emotional exhaustion, along with possible solutions. Seven participants answered the open ended questions. Results were similar to the concepts set forth in the resident and physician literature, indicating that emotional exhaustion and burnout are principally systemic issues. Consequently, program coordinators, as key players in physician residency programs, can benefit greatly from targeted wellness interventions, which, in turn, may also benefit their related residency programs.

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Poster #40

Presenters: Stephanie Miller, MD, Samuel Sawyer, DO

Allegheny Health Network - Forbes Family Medicine

Submission Category: Research Design

What is the HPV Vaccination interest in patients aged 27-45 at Forbes Family Medicine?

Authors: Stephanie Miller, MD and Samuel Sawyer, DO

Abstract Statement of Purpose: The Human Papilloma virus is responsible for at least six HPV related cancers, the most notable being cervical cancer. Gardasil is a vaccine that provides protection from the major oncogenic strains of HPV. Until recently, this vaccine was only indicated for males and females ages 9 through 26 years old. In late 2018, the FDA approved the vaccine for people up to the age of 45. Many patients as well as physicians are not aware of this. We conducted a patient survey to assess interest in the HPV vaccination with particular attention to those in the newly approved age group. Methods: For a two-week period, all patients who presented to the Forbes Family Medicine clinic who were between the ages of 18-90 were provided with an anonymous survey. The survey included questions covering demographic data, vaccination status, general knowledge of HPV as well as interest or disinterest in receiving vaccination for HPV. After the two-week period, the questionnaires were collected and the responses tallied. Results: A total of 106 surveys were collected. Of those, only 49 met inclusion criteria. The data collected is currently being analyzed. Discussion: Family medicine physicians play a pivotal role in providing preventive care to all ages. Specifically for those aged 27-45 who are at risk for contracting HPV, primary care providers might be the only physicians to see these individuals during this pivotal time. The purpose of our study was to determine interest in HPV vaccination in the new FDA approved age group. We hope to identify possible barriers to vaccination and based on the responses, can develop tools that could help aide us in increasing our HPV vaccination rates.

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