American Medical Women’s Association
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Poster Abstract Booklet
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1. A content analysis of Women Veterans’ Health Issues on VA websites in the United States
   Aggarwal NT, Mayer KH, Friese T, Bachman G

Background: According to the latest US Census, there are approximately 1.6 million female veterans living in the United States. These women are eligible to access the Veterans Health Administration (VHA) health care system. However, in 2009, less than 1/3 (32%) of women veterans were enrolled in the VHA system and 60% actually used the VHA that year.

Methods: We identified 25 large cities evaluated by the Military Times as Best for Vets: Places to Live 2015. From these 25 cities, 23 VHA health care systems were represented and their websites were examined methodically for content relating to women’s health.

Results: Of the 23 VHA systems websites, 1 site featured two stories related to women’s health (i.e. sexual wellness, women veterans), 5 sites featured one story related to women’s health (i.e. breast cancer, domestic violence, women veterans, ladies night), and 17 featured 0 stories related to women’s health. Of the tabs on each VHA homepage, 6 out of the 23 sites included the tab “Healthcare for Women Veterans”. Under the “Resources” menu, 4 out of the 23 VHA sites included a link related to women’s health. While all sites provided a “Women Veterans” page accessible from the “Health Care Services” pull down menu, 13% did not supplement a predetermined script with additional information relating to that specific VHA system, 48% did not specifically mention a women’s clinic, and 9% did not list contact information for the women veterans program manager.

Conclusion: While effort has been made to ensure that each VHA system website includes a link to a women veterans webpage with information regarding basic services provided, there is a range in the quality of the content relayed by these
pages as well as scant information related to specific issues that are related to women veterans' issues on VHA system homepages.

2. **Long-Acting Reversible Contraceptive Methods to Reduce Infant Morbidity and Mortality**
Cashman C

With approximately half of US pregnancies unintended, we are presented with a great opportunity for reduction in infant mortality. Increasing the number of pregnancies which are intended can improve pregnancy outcomes and neonatal morbidity and mortality. Healthy People 2020 has set a goal of increasing the proportion of pregnancies that are intended from 51% to 56%. The CDC recommends preconceptional counseling prior to pregnancy, which would most likely not be sought by someone not looking to become pregnant. Choosing effective methods of contraception is a known method to significantly reduce unintended pregnancy rates. When cost barriers are removed, nearly ¾ of patients may choose long-acting reversible contraceptives. Long-acting reversible contraceptives are highly-effective, low-maintenance methods which are appropriate for and acceptable to many women, including teens, breastfeeding women, and women with a history of ectopic pregnancy or PID. The American Academy of Pediatrics recommends LARC as a first-line method of contraception for adolescent patients. Removing unnecessary barriers to LARC provision (including requiring negative STI testing prior to scheduling, scheduling only at the end of menses) and offering it to all appropriate patients can reduce infant mortality by reducing unintended pregnancy.

3. **Patient Preference for Physician Gender in the Emergency Department**

There are an increasing number of female physicians. However, few studies have investigated the physician gender preference of emergency department patients.

Objective: The objective was to determine if there is an association between patient demographics and physician gender preference.
Methods: We surveyed patients presenting to an urban academic emergency department. We determined the association between patient demographics and patient physician gender preference for five medical situations: 1) routine visit, 2) emergency visit, 3) sensitive issue visit (genital problem, OB/GYN problem, or sexual problem), 4) surgical visit (i.e., draining an abscess or stitches), and 5) ‘bad news’ (i.e., diagnosis of a life-threatening illness or notification about the unexpected death of a family member) visit. We performed Fisher’s Exact test for associations among categorical participant characteristics and ANOVA for associations among continuous participant characteristics. We used SAS version 9.3 for all statistical analyses. We considered p-values ≤ 0.05 as statistically significant.

Results: A total of 200 emergency department patients were surveyed. The majority (89.5%) had no physician gender preference for routine medical visits. Patients that preferred male physicians for routine visits were more likely male (87.5%), and patients preferring female physicians were more likely female (69%) [p value = 0.03]. The majority (89%) of patients had no physician gender preference for emergent medical visits. For sensitive issue visits, the majority of patients had no physician gender preference (59%). Similar to the routine visit, patients that preferred male physicians for sensitive issues were male, and patients that preferred females were females [p value <0.001]. The majority (89%) of patients also had no physician gender preference for minor surgical medical visits. Similarly, the majority (89%) of patients had no physician gender preference when receiving bad news.

Conclusion: The majority of emergency department patients reported no physician gender preference in all presented medical visit scenarios.

4. Negotiating the Divide: Gender and Salary
Rohr-Kirchgraber T, Kirchgraber P, Reid T, Duell T

With the passing of the “Equal Pay Act” of 1963, women understood that there would no longer be two different pay scales for the same job, but alas pay differences along gender lines still exists. According to the Status of Women report card, Indiana received a “D” in employment and earnings. In medicine, the median income of young female physicians is about $18,000/year less than their male counterparts. In one academic study, a woman physician was found to earn over $360,000 less in her 30-year career than a man working the same hours, with the same qualifications. To overcome this obstacle and to increase understanding of the problem with potential solutions, the IU National Center of Excellence in Women’s Health
(IUNCOE) along with the American Medical Women’s Association (AMWA) has teamed up to create a program called Negotiating the Divide: Gender and Salary (NTD). NTD has become a signature program with the IUNCOE and through partnership with AMWA is held across multiple Indiana locations and beyond state lines including California. NTD brings residents, scientists, fellows, physicians, lawyers, and other professionals together to discuss pay discrepancies, negotiation skills to empower female leadership in medicine and science. At no cost to the hosting institutions or groups, NTD has educated over 300 students, residents and physicians. Survey data demonstrated that 90% of participants were extremely or very satisfied with the program; 92% improved in knowledge; and 82% documented that the information presented was useful to their career. The purpose of NTD is understanding the scope of the problem, recognizing the gap and why it exists; and empowering women to appreciate their worth and engage in negotiation techniques that result in better salary and job satisfaction.

Residents:

Oral Presentations:

1. **Females at Higher Risk for Burnout: Results from a Resident Wellness Survey**
   Babbott SF, Brimacombe M, Behravesh B, Norvell JG, Grow KL, Unruh GK

   **Introduction:** Recent research indicates that burnout among medical residents is reaching alarming levels. In an effort to better understand resident wellness at the University of Kansas Medical Center (KUMC), and where to focus its improvement efforts, the KUMC Graduate Medical Education Committee surveyed its residents in the Spring of 2015.

   **Methods:** A 77-item electronic wellness questionnaire was administered to all 532 residents and fellows at KUMC. The survey instrument was originally developed at Hennepin County Medical Center. Approval from the Institutional Review Board was obtained and appropriate measures were taken to ensure anonymity.

   **Results:** 391 (73.5%) residents and fellows completed the questionnaire, including 151 females (39.0%) and 236 (61.0%) males, mirroring the gender demographic of the KUMC residents and fellows as a whole. Descriptive statistics, contingency table analysis and differences in rates are reported. Using a combined score for
self-reported burnout, 15.7% of respondents reported some level of burnout, and 63.9% some level of stress. 19.2% of females and 13.0% of males reported some level of burnout. Although not quite statistically significant, self-reported burnout was higher among females (p=0.123, chi-square test) and higher among PGY 2 residents, especially females (p=0.076, chi-square test). Additionally, females (93.0%) were more likely than males (59.4%) to have spouses that work full-time outside of the home, and living apart from dependent children was a risk factor for both males and females.

Conclusions: The results suggest that PGY 2 residents, particularly females, could potentially benefit from targeted wellness initiatives. The results also suggest that a review and possible augmentation of child care resources available to residents may be beneficial. KUMC is currently in the process of repeating the survey. Additional research could include a follow-up survey of PGY 2 residents to better understand the unique stresses they face.

2. HIV Screening: What you can do for your patients.
Seidel K, Fadel H

A 64-year-old female presented to an outside hospital with a severe Crohn’s exacerbation. After a weeklong hospitalization, she was discharged on oral steroids, antibiotics, and fluconazole for oral candidiasis. Two days later, she returned with worsening gastrointestinal symptoms. Chest CT scan revealed severe pneumomediastinum. Bronchoalveolar lavage revealed Pneumocystis jiroveci pneumonia. She was treated with meropenem, vancomycin, pentamidine, and fluconazole. Her opportunistic infections were thought to be due to an immunocompromised state from chronic steroid therapy. After initial improvement, she worsened after 2 weeks and was therefore transferred to our medical ICU. She required vasopressors, fluid resuscitation and mechanical ventilation for septic shock with respiratory failure. Shortly after transfer, an HIV test was performed and was positive. Her viral load was 415,000 with a CD4 count of 0. Her hospital course was complicated by acalculous cholecystitis and CMV viremia with CNS and GI involvement. She never regained consciousness and ultimately succumbed to her multiple morbidities.

Social history could not be directly obtained from the patient. Her husband was unaware of her HIV status and reported that they had a monogamous relationship for several decades with no sexual activity for several months. He did not know of any IV drug use and denied additional risk factors. She had a history of one blood
transfusion approximately 20 years prior. His subsequent HIV screening was negative.

The U.S. Preventive Services Task Force HIV screening guidelines recommend screening for HIV in all individuals aged 15 to 65 years and all patients at increased risk. Screening intervals include one-time screening between the age of 15 and 65 years and annual screening for those with active risk factors. This case demonstrates the importance of HIV screening at any age and independent of known risk factors especially in patients presenting with opportunistic infections.

3. Female Adolescents and Young Adults Diagnosed with Melanoma: Incidence, Fertility Risk with Existing Therapies and Fertility Preservations Options

Walter J, Xu S, Paller A, Choi J, Woodruff T

Introduction: Oncofertility is an interdisciplinary field addressing the reproductive needs of cancer patients. Melanoma disproportionately affects the young and represents the most common cancer diagnosed in patients ages 25-29 years,4 the age group with the highest birth rates in the U.S.

Hypothesis: There is limited available evidence to assess fertility risk of current FDA-approved systemic therapies for melanoma.

Methods: We used the Surveillance, Epidemiology and End Results (SEER) database to determine the yearly incidence of melanoma in females ages 15-39. Fertility risk of each treatment was based on an assessment of the FDA package insert, European public assessment reports, the product monograph required by the Health Products and Food Branch of Health Canada, and previously published reports identified through a literature search.

Results: Based on the SEER database, we estimate 4,400 new cases of melanoma diagnosed in young females ages 15-39. Of these cases, 11% of patients will have local or widespread disease. For females, 7 of 11 melanoma drugs have potential or high fertility risk. These drugs include cobimetinib, trametinib, dabrafenib, ipilimumab, interferon-2b, and dacarbazine. Among the 7 new therapies approved after 2009, preclinical animal studies remain the main source of data on fertility risk. We also review fertility preservation strategies including ovarian cryopreservation, egg banking, and embryo banking.
Conclusions: As cancer survivorship increases, comprehensive care to address future quality of life concerns, including fertility preservation, potential parenthood, and long-term endocrine health (e.g. early osteoporosis), has become paramount. Dermatologists and oncologists have the opportunity to discuss and initiate care for young female patients with melanoma concerned with future fertility. We advocate for greater use of existing registries to track reproductive outcomes for this population. Finally, more referrals should be made to reproductive endocrinologists prior to treatment.

Poster Presentations:
Original Research:

**E1. A Qualitative Review of Social Media for Healthcare Professionals**
Xi A

Hypothesis: Nearly two-thirds of American adults use social media sites (including, but not limited to Facebook, Twitter, blogs, LinkedIn, Doximity, etc) and healthcare professionals are among users. The increasing use of online social networking sites raises concerns over professionalism when used by healthcare trainees and practicing medical professionals. The aim of this study is to review the positive and negative aspects of social media use by healthcare professionals and provide a summary of current literature.

Methods: A literature search was conducted in PubMed (restricted to English, published between 2002 and 2015) for papers related to use of social media by medical professionals and policies governing users. The study author reviewed the papers for inclusion and exclusion.

Results: All collected references were reviewed and synthesized into 8 key conclusions.

Conclusions: Online presence by medical professionals is increasing and being used for numerous positive functions such as research collaboration, physician-patient communication, community education and medical education. Despite the positive applications of social media use by healthcare professionals, there are concerns surrounding confidentiality, the patient-physician relationship, online behavior and impact on trainee career advancement. Education in the appropriate use and
potential pitfalls of social networking site usage can inform medical trainees and practicing professionals toward maximizing the benefits of online social media.

5. Management of Pain in the PACU/Recovery in a Medically Complex Patient
Masear C, Raasch J, Rayapati D, Cao S, Tran T

Case: The patient is a 56-year-old female presenting for shoulder surgery for osteoarthritis. Medical history includes obesity, OSA requiring CPAP, COPD, diabetes, hypertension, and chronic pain requiring methadone. Upon presentation, her oxygen saturation is 93% on 2L NC with a respiratory rate of 24, distant breath sounds, and her baseline chronic cough. Her pulmonologist stated that she is at baseline and does not require further optimization.

The anesthesia team considered a regional technique, such as an interscalene block, for pain control. However, given her compromised respiratory status, they did not want to cause diaphragmatic paralysis or risk pneumothorax. They proceeded with general anesthesia using an endotracheal tube, planning intravenous narcotics for pain management.

Postoperatively, she was extubated and transported to the PACU, screaming from significant pain at the surgical site. Additional narcotics were administered. She then nodded appropriately to questions and appeared to fall asleep.

Several minutes later, her oxygen saturation declined and she was difficult to arouse. She was disoriented with word finding difficulties. Given the change in her mental status, the stroke team was called. Differential diagnosis also included hypoglycemia, and hypercarbia with narcotization. Blood glucose was within normal limits. Narcan was administered with improvement of mentation but worsening of her pain. Word finding difficulties continued.

Conclusion: A normal head CT and laboratory values ruled out stroke or metabolic etiology. CXR revealed possible aspiration pneumonia. Given her baseline compromise, the combination of hypoxia, hypercarbia, and possible systemic sepsis from pneumonia likely contributed to her mental status change.

Clinical significance: Postoperative pain control can be achieved with a regional or multimodal IV technique. Regional techniques, while avoiding the complications associated with systemic narcotics, are not without potential risks. The quality of pain control must be evaluated in the setting of the patient’s co-morbidities.
6. Who gets the best seats at the table: Are women receiving endowed Chairs at the same rate as men in academic medicine?
Capshew B, Combs L, Dionisio C, Walvoord E

Women are entering medicine at the same or higher rates than men, and fill nearly half of all new faculty positions in academic medicine. However, women still lag behind in achieving full professor rank and leadership roles. We hypothesized women are bestowed honorary titles at disproportionately lower rates than men of the same rank and that this has the potential to limit their professional opportunities and career trajectory.

To be eligible for Named or Distinguished Professorships, individuals must be full, tenured, professors. Three types of named professorships exist at IUSM. Distinguished Professorships are awarded by a university-wide peer-reviewed selection process, and are considered the most prestigious honor. Chancellor Professorships are campus-based awards selected by the Chancellor’s committee and Named professorships are bestowed by the Dean or department chair. In 2015, of the 1,987 full time IUSM faculty, women held 27% of the total tenure line positions; women account for 35% of Assistant Professors, 29% of Associate Professors and 19% of Full Professors.

Eighteen men and zero women at IUSM hold Distinguished Professor titles. Of the Chancellor’s professors, 11 are men and 5 (31%) women. 147 faculty currently hold Named Professorships; 125 are men and 22 (15%) are women. In total, 27 (15%) of the 181 named professorship titles are held by women while 19% of full professors are women.

Gender disparity in the prestigious named professorships ranks has the potential to further disadvantage women in their career advancement because these professorships include many benefits: increases in base salary, money to support research expansion and social capitol.

Further research is needed to analyze the credentials of the individuals receiving these awards to determine if gender bias occurs and to investigate if this disparity exists at other institutions. An important first step in remedying this disparity is the recognition that it exists.

7. Too thick or too thin: Walking the fragile line of anticoagulation
Case: Patient was a 26 year old woman with a history of Ehlers Danlos Type 4 with a complex history of multiple blood clots requiring chronic anticoagulation and friable connective tissue resulting in complications following several bowel surgeries. She was scheduled for parastomal hernia repair.

In preparation for surgery, her anticoagulation was altered from Coumadin to Lovenox bridge therapy. Also of concern was her significant torticollis, which was a challenge for prior intubations. Due to her friable connective tissue, previous intubation attempts resulted in oropharyngeal trauma and bleeding, and may have led to cervical arterial dissection. Her intubation was performed with minimal manipulation using a video laryngoscope. She was successfully extubated on post-operative day one in the ICU. Anticoagulation was held until post-operative day two due to risk of bleeding. During the evening on post-operative day two, she became tachypneic with increasing work of breathing and worsening hypoxia. She eventually required intubation for somnolence due to hypoxemia and hypercarbia. Given her known history of difficult airway, a multidisciplinary difficult airway team was present. Teamwork by this team consisting of anesthesiologists, otolaryngologists, and trauma surgeons yielded a surgical airway after several attempts. However, resuscitation was unsuccessful. Bedside transthoracic echocardiogram revealed cardiac standstill and a subsequent autopsy showed multiple pulmonary emboli and massive left ventricular thrombus.

Conclusion: In caring for patients with complex medical issues, it is not only vital to prepare for and anticipate possible complications prior to surgery, but also to communicate with all team members regarding the patient’s care during the entire hospital stay.

Clinical Significance: Patients on anticoagulation present a dynamic challenge for primary care physicians and surgeons. Considerations include minimizing the risk for thrombus and clot formation while also weighing the risk of surgical blood loss. Collaboration between providers is required to optimize the patient’s condition in the peri-operative setting.

8. Ocular Complications In A Newly Diagnosed Pediatric Crohn's Disease Patient
Leisy HB, Ahmad M, Smith RT

Case: A 16 year old male presented to the hospital with nausea, vomiting, bloody stools and while hospitalized developed acute vision loss bilaterally. After being followed on a pediatric inpatient service and obtaining several diagnostic lab studies, the patient was diagnosed with Crohn’s disease. Ophthalmologic consultation discovered central retinal vein occlusions in both eyes along with a central retinal artery occlusion with choroidal infarction in his left eye. Several studies and imagining techniques such as color fundus photography, visual fields, and intravenous fluorescein angiograms were obtained. Treatment and disease progression will be discussed.

Conclusion: Inflammatory bowel disease, such as Crohn’s disease, has many possible systemic manifestations. A rare ocular manifestation that can occur is retinal vasculitis. Retinal vessel occlusion is a unique presentation for Crohn’s disease.

Clinical Significance: Early recognition and treatment of Crohn’s disease can help prevent significant complications such as vision loss.

9. ANCA-Associated Vasculitis in Limited Scleroderma Sine Vasculitis?
Qu J, Koster M, Matteson E

Case: An 83-year-old female former smoker with a 30-year history of limited scleroderma presented with dyspnea and fatigue for six weeks. Two years ago, a diagnosis of microscopic polyangiitis (MPA) was made locally based on positive p-ANCA and high-titer MPO (>8.0; reference <0.4 U) antibodies in the presence of constitutional symptoms and arthralgias. Of note, glomerulonephritis, mononeuritis multiplex, petechial rash and hemoptysis were not observed. Scattered pulmonary nodules were present on CT but biopsies were not performed. Treatment included prednisone 15mg/day, methotrexate 15mg/week and two cycles of Rituximab (375mg/m2 weekly for four weeks). Prednisone dose was doubled for concern of vasculitis flare causing dyspnea. On presentation the patient was afebrile and normotensive but was hypoxic on room air with oxygen saturations of 87%. Laboratory findings demonstrated leukocytosis of 18.9x109/L, ESR 15mm/hr (nl<29), CRP 34.6mg/L (nl<8.0) and creatinine 1.3mg/dL. Urinalysis showed no hematuria. Chest X-ray demonstrated stable diffuse emphysematous changes. CTA of the chest was negative for pulmonary embolism but showed new patchy ground-glass opacities. These findings were not considered
characteristic for MPA flare. This diagnosis was questioned and Rheumatology recommended cessation of immunosuppression and rapid taper of glucocorticoids. Of concern, the patient had not received Pneumocystis jiroveci prophylaxis despite prolonged immunosuppression. Bronchoscopy was performed with microbial studies positive for Pneumocystis jiroveci. High dose trimethoprim/sulfamethoxazole was initiated and both hypoxia and leukocytosis resolved within 72 hours.

Conclusions/Clinical Significance: Limited scleroderma with concurrent ANCA vasculitis is extremely rare. However, positive p-ANCA and MPO antibodies can be seen in 2.4-4.5% of patients with limited scleroderma. The etiology of these antibodies are of uncertain significance but should not be used as means of diagnosing vasculitis without characteristic findings or biopsy confirmation. Infectious etiologies, particularly pneumocystis pneumonia, must be considered in patients on prolonged immunosuppression, even if flares of their reported conditions can present similarly.

10. A Sweet Progression of Essential Thrombocythemia
Raturi R, O'Leary C, Gaudi S

Case description: A 62 year-old male presented with new onset erythematous lower extremity lesions discovered after he performed car work laying on gravel. Past medical history was significant for thromboembolic disease for which he was on systemic anticoagulation with warfarin and JAK2 negative essential thrombocythemia for which hydroxyurea was recently held due to new onset thrombocytopenia and anemia. On admission, patient was afebrile with stable vital signs. Exam revealed a nonpruritic, tender, raised 2cm by 1cm papule located and on his mid lateral thigh (figure 1). CBC revealed a mild leukocytosis of 11,000 with known anemia and thrombocytopenia. He was initially treated for cellulitis with marked improvement on antibiotics and discharged. He returned 36 hours later with fevers and multiple, new nodular lesions on now all four extremities (figure 2). On re-admission, his maximum temperature increased to 102.3 degree F and his leukocytosis increased to 20,000 with peripheral blasts. Hematology, infectious disease, and dermatology were consulted. A skin biopsy performed revealed diffuse dermal neutrophil-rich infiltrate with marked red blood cell extravasation, consistent with acute febrile neutrophilic dermatosis (Sweets Syndrome, figure 3). A subsequent bone marrow biopsy confirmed essential thrombocythemia transforming to acute myeloid leukemia (AML). Oral steroids were started with resolution of skin lesions.
Conclusion: Rashes and skin lesions are often treated with antibiotics. An atypical presentation should raise suspicion for a systemic disease process. Clinical significance: This case emphasizes the necessity for a broad differential when evaluating atypical skin lesions. A work up including skin biopsies may be necessary when considering underlying pathology indicative of systemic disease. Hydroxyurea was initially believed to be the culprit for pancytopenia until skin biopsies revealed neutrophilic infiltrates consistent with sweets syndrome suggested advancing hematologic disease.

11. Diagnosis of Acid-fast Bacillus Spinal Epidural Abscess Confounded by Recent Epidural Labor Analgesia
Ringo, O

Introduction: Tuberculosis (TB) is a worldwide problem that affects over 9 million people annually. Spinal involvement, called Pott Disease, occurs in less than 1% of patients. In the United States, undiagnosed immigrants from countries where TB is endemic comprise the majority of cases. Delayed diagnosis due to the vague nature of symptoms and the rarity of the disease may result in irreversible neurologic damage. Therefore, cases of Pott disease are important to report and study.

Case: A 34 yo G3P3 native of Algeria status post normal spontaneous vaginal delivery (NSVD) with epidural labor analgesia 6 months prior presented to our Emergency Department with severe mid back pain affecting her ability to ambulate. She denied bowel and bladder dysfunction, and neurological examination and vital signs were within normal limits. MRI revealed an anterior T10-11 abscess with osteomyelitis and cord displacement. The patient was placed on broad-spectrum antibiotics and underwent emergent instrumentation and fusion of spinal segments T8-L2, with T9-T11 decompressive laminectomy and evacuation of epidural abscess. Intraoperative cultures were negative for organisms or WBCs after nine days, and the patient was discharged with a peripherally inserted central catheter on intravenous cefepime and vancomycin, and oral Levofloxacin for presumed gram-positive flora, possibly related to the epidural. Preoperative chest X-ray demonstrated a nodule and CT confirmed the presence of a 3mm nodule in the left upper lobe, for which she was advised outpatient follow-up. Twenty days following discharge, intraoperative cultures returned positive for acid-fast bacillus. A more detailed history revealed that the patient had been exposed to TB previously, without treatment or follow up. The health department was notified and quadruple therapy oral anti-TB treatment was initiated.
Discussion: The patient’s history of recent epidural labor analgesia contributed to a delay in diagnosis of this spinal-epidural abscess, which was ultimately attributed to TB.

12. After the shakes, why so slow to wake?
Scher L, Lee M, Klinker L, Sood R, Tran T

Case: Patient is a 30 year old female presenting on the labor and delivery unit for induction of labor due to pre-eclampsia. Her past medical history is significant for epilepsy for which she has had breakthrough seizures during her pregnancy and insulin dependent diabetes. Her pregnancy was complicated by significant nausea and vomiting for which she required hospitalizations for dehydration. She had a successful induction course and requested an epidural for pain control. She delivered vaginally the following day. A few hours after delivery, a family member called the nurse into the room for witnessed seizure activity. The seizure was self limiting, lasting less than a minute. Per the family, it was similar to her prior seizures. No intervention was required. However, the patient had an extended postictal period where she was difficult to arouse with verbal and tactile stimuli. Her family member noted that prior to her seizure, she gave herself a dose of subcutaneous insulin because her blood sugar was running high. Upon inspection of her insulin syringe, she had given herself an incorrect dose of insulin. Her glucose check revealed a blood sugar of 30 mg/dL. After administration of dextrose, her mental status improved and returned to baseline.

Conclusion: The differential diagnosis for the patient’s seizure activity included breakthrough seizures, development of eclampsia, altered glycemic state, and local analgesia toxicity. It is important to keep the patient safe, provide supportive care, and determine the etiology of the seizure activity to prevent reoccurrence.

Clinical Significance: Monitoring of the postictal patient following seizure activity is important. The assumption should not be made that the patient’s slow return to baseline mentation is a result of seizure activity. A thorough evaluation is essential to discover any abnormalities with potential contribution to seizure development or to the prolonged recovery.
13. A Case of Pemphigus Erythematosus (Senear-Usher Syndrome) Occurring in a Unilateral Right-Sided Malar Distribution
Teat Pflederer R

Pemphigus Erythematosus, also known as Senear-Usher Syndrome, is a rare skin condition which represents a clinical overlap between Pemphigus Foliaceous and Lupus Erythematosus. Patients present with red, scaly, crusted lesions or flaccid blisters in a distribution over the head and neck in a malar pattern as seen in Lupus. Direct Immunofluorescence demonstrate IgG and C3 depositions similar to PF and LE. There are only a few case reports in the literature.

We present a patient with a unique yet relevant clinical presentation of Pemphigus Erythematosus. The patient’s skin lesions were found almost exclusively on the right side of his forehead and malar cheeks, with a sharp demarcation at the midline. The patient’s recent social situation requires him to ride as a passenger in a car for many hours of the day. In our case report, we hypothesize that the photosensitive nature of the syndrome resulted in these interesting physical exam findings, and discuss their clinical relevance in relation to this minimally described disease process.

14. She’s Got Cold Feet: Critical Limb Ischemia in a Woman with Sjögren’s Disease
Tse CS, Krause ML, Mohabbat AB, Shreyasee A

A 59-year old female non-smoker with primary Sjögren’s syndrome for approximately ten years had abrupt onset of bilateral feet swelling and pain. “Small black specks” erupted on the dorsum of her feet and grew until they ulcerated and looked "like a burn". On exam, after one month of symptoms, her feet appeared dusky, had decreased pedal pulses, and were scattered with bullae, ulcers, and black eschars. Laboratory testing revealed strongly positive Anti-Ro (SSA) and Anti-La (SSB) antibodies both >8.0 U (normal <1.0). ANA was positive at 9.3 U (normal <1.0), titer 1:320. Inflammatory markers were markedly elevated with ESR 148 mm/1h (normal 0-29) and CRP 263.6 mg/L (normal <=8.0). Cryoglobulins and antiphospholipid antibodies were negative. Lower arterial Doppler studies revealed severe infrapopliteal peripheral arterial disease with ankle-brachial index 0.40 and 0.47 on the left and right, respectively (<0.90 indicates peripheral arterial disease; <0.40, severe). Conventional angiogram of the lower extremities revealed severe distal left arterial occlusive disease with signs of medium vessel vasculitis. Skin biopsies
demonstrated full thickness epidermal and dermal necrosis and vascular occlusion most consistent with small vessel occlusive vasculopathy.

Conclusions: She was initiated on high dose steroids and cyclophosphamide for management of medium vessel vasculitis. Clopidogrel was used for its antiplatelet effect in the setting of skin biopsies that demonstrated vasculopathy. She demonstrated initial improvement, but unfortunately had evolution of gangrenous necrosis of the feet over three months.

Clinical Significance: Sjögren's syndrome afflicts a preponderance of women with a prevalence of 9:1 female to male ratio. Symptoms range from dry eyes and dry mouth (sicca symptoms) to systemic extraglandular involvement, including vasculitis. This woman with longstanding Sjögren's syndrome developed pain, dusky skin lesions and subsequent tissue necrosis involving both feet from vasculitis with thrombosis. Critical limb ischemia requires prompt treatment with immunosuppression (when vasculitis identified) and/or antithrombotics (for occlusive vasculopathy from microvascular thrombosis).

15. Carcinoid syndrome in a patient without liver metastasis
Zhang X, Halfdanarson T

Case: A 43-year-old woman, with primary appendiceal carcinoid tumor, presents with frequent episodes of diarrhea and flushing. She had successfully undergone appendectomy and right hemicolectomy for the primary tumor. While undergoing left oophorectomy for an ovarian cyst, she was also incidentally found to have carcinoid tumor metastasis in the round ligament. Since then, surveillance with multiple imaging modalities, including gallium-68 DOTATOC PET/CT, revealed no evidence of active disease. Despite the negative imaging studies, she continued to experience symptoms consistent with carcinoid syndrome.

Conclusion: Extra intestinal disease should be suspected in patients who present with persistent carcinoid syndrome without liver involvement. Hormone producing carcinoid tumors in gynecologic organs, whether primary or metastatic, can release substances directly into the systemic circulation since the venous drainage bypasses the portal circulation. Due to this patient’s persistent symptoms, total abdominal hysterectomy, right oophorectomy, and salpingectomy were recommended.
Clinical Significance: Carcinoid tumors are rare neuroendocrine tumors that arise in structures derived from the embryonic gut. A minority of patients with hormone producing carcinoid tumors will develop carcinoid syndrome from overproduction of biologically active substances, most importantly serotonin. It is thought that patients with gastrointestinal carcinoid tumors should not experience this syndrome without hepatic metastases, since a disease-free liver should be able to inactivate the pathologically produced serotonin delivered via portal circulation. It is important to remember that extra-intestinal metastasis can lead to carcinoid syndrome by bypassing the portal circulation. Both the primary and metastatic carcinoid tumors should be resected whenever possible since this can effectively control symptoms. In patients with unresectable or widely metastatic disease, the symptoms of carcinoid syndrome can be managed with somatostatin analogs. This case demonstrates the limitations of current post-resection surveillance techniques for carcinoid tumors and the importance of anatomic blood flow considerations.

98. Prolonged Chemical Peritonitis Following Intraperitoneal Rupture of a Dermoid Cyst
Eisman LE, Stull C, Barmat LI

Case: A 35 year-old G0 presenting for infertility evaluation was found to have a 6.6cm right dermoid cyst. She underwent laparoscopy where the dermoid was only partially resected due to adhesions. A 2cm calcified region was left in situ. The peritoneal cavity was irrigated with 6L of saline before closure. The patient presented to the office on post-operative day #3 complaining of nausea/vomiting, fevers, and abdominal discomfort. After conservative management with antiemetics and NSAIDS failed, she presented to the emergency room. CT scan showed peritonitis with ascites, right basilar pneumonia, and right ovarian cyst with rim calcification (4.2x2.7x2.5cm). The patient was treated with intravenous antibiotics and discharged on oral antibiotics. Over the next two months, her symptoms recurred. She required two additional hospitalizations and underwent thoracentesis and paracentesis for pleural effusions and perihepatic fluid collections, cultures of which were negative. Reaccumulation of fluid required CT-guided percutaneous drainage of the perihepatic collection. The catheter left in place was repositioned due to continued accumulation. The patient received two courses of antibiotics during this time. Sixty-four days after surgery, the patient was re-explored laparoscopically to remove the calcified remnant. Right cystectomy, partial right oophorectomy, and pelvic lavage were performed. However, the patient’s fluid reaccumulation and symptoms
persisted for two additional months until she underwent exploratory laparotomy with incision, drainage, and debridement. She required drainage of fluid one last time after discharge, but since then her symptoms resolved and she has resumed normal activities.

Conclusions: Chemical peritonitis following intraoperative rupture of a dermoid is a rare but potentially serious and intractable condition.

Clinical Significance: Care should be taken to avoid intraoperative rupture of a dermoid. If rupture occurs, thorough washout of the peritoneal cavity should be performed. Should chemical peritonitis complicate the post-operative course, early reoperation may be advantageous, especially if remnants are suspected.

Medical and Premedical Students:

Original Research:

E2. Contraceptive Concerns: Patient and Provider Interviews
Hosein S, Kumaraswami T

Objectives: Nearly half of all pregnancies in this country (49%) are unintentional. Of those unplanned pregnancies, 40% of women reported using contraception inconsistently or incorrectly prior to conception. Women have reported that attitudes rather than knowledge have the greatest influence on birth control choice. This study aims to understand women’s attitudes and concerns regarding various contraceptive options to allow for better patient counseling.

Methods: Patients and OBGYN care providers were interviewed over a 1 week span at two clinics at UMass Memorial Medical Center, a tertiary care center in Worcester, MA. Patients were asked 3 questions regarding awareness of, use of and concerns about various hormonal contraceptive options. Providers were asked similar questions about their experiences with patients. Interviews were then reviewed for common themes by the PI and co-investigator.

Results: 31 patients and 6 providers were interviewed. Patients were ages 18-50, of diverse racial/ethnic backgrounds and represented all levels of education. Excluding the oral contraceptive pill, 6-27% of respondents had never heard of the method in
question. The method with the most concerns were the IUDs and with the least concerns was the Ortho Evra patch. A number of common concerns were seen across interviews.

Conclusions: Patients were not well informed about the various options. Patients had common concerns about both expected side effects and common myths. Providers accurately predicted most of patient’s concerns, but concerns were not always congruent.

E3. “I’m so sorry to hear that”: A unique approach for teaching the unteachable skill of empathy
Penn R, Broome M, Brosco J

Hypothesis: Medical students advancing through their clinical years experience a decline in empathy towards their patients. Third year students enter the hospital with abundant knowledge but limited skills on how best to connect with patients. Furthermore, there are few published students about approaches to improve empathy. To address this problem, we developed a small group approach involving the analysis and discussion of video vignettes that follow a 21-year-old patient’s journey through her cancer diagnosis, daily highs and lows, and treatment.

Methods: The authors tested the effectiveness of this protocol in a pilot study with second year medical students at UMMSM as part of a larger curricular module that includes a lecture and readings on empathy in medicine. The 1-hour empathy small groups sessions were led by upperclassmen facilitators, and consisted of 5 video clips followed by group discussions. The session concluded with a competition to produce the best way to express empathy without using the phrase “I’m so sorry to hear that.” Pre- and post-surveys were distributed to second year medical students to assess the small groups.

Results: The students found the empathy training sessions to be useful and improved self-perceived ability to express empathy. Upperclassmen facilitators 1) limited demands on faculty time and 2) allowed students to feel comfortable speaking freely in the sessions.

Conclusions: This innovative approach is readily adaptable by other programs seeking to implement an empathy curriculum. We aim to expand our empathy curriculum and obtain longitudinal data on its impact.
E4. Parents’ Behaviors, Motivations, and Barriers to American Academy of Dermatology Sun Protection Recommendations for Hispanic and Black Children Ages 4-12
Shah V, Mlacker S, Aldahan A, Nouri K

Background: Excessive exposure to ultraviolet radiation during childhood and adolescence increases the chance of developing skin cancer in adulthood. Sun safe behaviors early in life may decrease the risk of future skin cancers. Although incidence rates for skin cancers are lower in Hispanics and Blacks compared to white non-Hispanics, skin cancers in these minority populations have a poor prognosis because of delayed diagnosis and advanced stage presentations. At this time, there are few studies investigating the sun safety behaviors of Hispanic and Black children. The primary objective of this study is to identify the current behaviors, motivations, and barriers to American Academy of Dermatology (AAD) sun protection recommendations in Hispanic and Black parents for children ages 4-12. The results of this study will inform the development of an evidenced-based, intervention to promote healthy behaviors early in childhood.

Methods: Starting July 2015, parents with children between the ages 4-12 were recruited from a University of Miami affiliated-general pediatric outpatient clinic in Miami, Florida. Parents who brought their child for any medical condition were approached to complete a 52-question survey. A total of 200 surveys responses were collected and analyzed using SPSS software.

Results: A total of 95 responses were collected during the first three weeks of survey administration (93% response rate). The median age of the children was 7.97 years (SD=2.8), most of whom were White Hispanic 29.5% (n=28) and Black 37.9% (n=36). Preliminary results demonstrate a significant difference between parents with a college degree and those with no high school diploma in knowledge of sun protection and skin cancer (p=0.009). There was no difference between education level and overall use of sun protective behaviors (p=0.161). White Hispanic parents were found to use sunscreen on their children more often than Black parents (p=0.001). Final results from the analysis of the questionnaires will be presented and analytic issues will be discussed.

Conclusion: Dermatologists and pediatricians will benefit from this study with the clarification of the behaviors, motivations, and barriers that affect Black and Hispanic parents’ adherence to current sun protection suggestions for children ages 4-12. To
our knowledge, there are no large-scale studies investigating these issues in the Hispanic and Black pediatric demographic population.

16. Emergency Department Urosepsis-Impact of Positive or Equivocal UA on Emergent Surgical Consultation
Abuelroos D, Siddiqui M, Jackson R, Berger D

Our objective is to retrospectively evaluate uroseptic emergency department (ED) patients who undergo abdominal imaging, and to evaluate if positive versus equivocal urinalysis yields any difference in the rate of emergent surgical consultations. We identified adult (>17 years) ED patients presenting between January 2009 and December 2012 with an ICD-9 code for urinary obstruction or sepsis and infection or calculus. Patients were included only if they had undergone abdominal cat scan or ultrasound ordered by ED provider, had 2 or more Systemic Inflammatory Response Syndrome (SIRS) criteria, and negative blood cultures. UAs were reviewed for positive or equivocal signs of infection. Two individuals (DA, MS) performed data abstraction, trained to distinguish among negative, equivocal, and positive UA. The Senior Author (DB) reconciled differences. We defined a positive UA as the presence of nitrite and/or bacteria without squamous epithelial cell contamination (SECC). We defined an equivocal UA as the presence of one or more of the following with SECC: positive nitrite, positive leukocyte esterase, pyuria, and bacteria. We report proportions with Odds Ratios and 95% confidence intervals. Of the 1142 patients identified, we excluded: 80 for negative UA; 167 for fewer than two SIRS criteria; 320 for positive blood culture; and 37 for incomplete data. Of the 538, 245 (46%) had positive UA of which 105 (43%) required emergent surgical consultation. Of the 293 (54%) equivocal UA patients, 138 (47%) required emergent surgical consultation. The Odds Ratio of a positive UA requiring emergent surgical consultation is 0.84 (95% CI 0.6 to 1.19). This retrospective study reveals no statistically significant difference between positive and equivocal UA results in the subset of uroseptic ED patients requiring emergent surgical consultation. This finding highlights the clinical relevance of an equivocal UA. Limitations of this study include that it is a convenience sample from a single institution, and that UA interpretation is subjective.

18. The Association Between Gender and Priority of Admission in Florida Stroke Patients
Altajar S, Geldbart R, Wilkinson K, Zevallos RJ, Zevallos JC
Introduction/Objective: Stroke is the fifth leading cause of death in the US and results in significant mortality annually. Its critical nature makes it essential to properly triage patients with symptoms of stroke so that time-sensitive interventions may be delivered. Studies have delineated gender differences in risk, diagnosis and treatment of stroke; however, limited information exists on the association between gender and Emergency Department (ED) triage priority. Our objective is to determine if gender differences exist in the assignation of an emergency priority of admission code among Florida stroke patients.

Methods: An observational cross-sectional study was performed through secondary analysis of hospital discharge data collected by the Florida Agency for Healthcare Administration (AHCA) in 2012. A descriptive analysis profiled the study population. We tested associations with a bivariate analysis using chi-square tests, then performed a multivariate analysis using logistic regression to control for confounders. Odds ratios were used to measure associations.

Results: Women were 24% more likely to receive an emergency priority of admission code than men. Following adjustment, it was determined that women remained more likely to receive a priority code of admission than males. This occurred at a higher rate in primary stroke centers (35% more) than in non-certified hospitals (11% more). Independently, other factors included in the adjusted analysis (age, race, payer, source of admission, day of the week, and stroke center designation) also held statistically significant associations with emergency priority triage.

Conclusions: Gender disparity does exist among Florida stroke patient triage and more research should be conducted concerning the factors influencing the assignation of an emergency priority code. ED care providers may need more gender specific protocols on stroke triage and additional training in recognizing gender specific symptoms. Additional studies should be conducted to identify if gender disparities exist in other links of the stroke chain of survival.

19. Developing a Culture of Mentorship, a Medical Student to High School Student Mentoring Program
An Y, Carlozzi L, Rowshanbakhfardian T, Gauthier A
Hypothesis/Background: Mentoring relationships among physicians and medical students have been previously implemented to facilitate academic achievement, career development, and student retention. Our schools AMWA chapter looked to develop a program, "Girls Go Med Mentoring", that can extend this culture of mentorship, and instill invaluable mentoring skills in our female medical students body. Our mentoring program focuses on establishing mentor pairs between second and third year medical students with high achieving 10th and 11th graders for one academic year to foster supportive relationships between mentors and mentees.

Methods: Medical students will be selected on a voluntary basis, and High school students will be selected based on guidance counselor and/or science teacher nominations. Two high schools from which students will be selected have historically low matriculation to the medical school's BS/MD program, despite geographic proximity. The study looks to evaluate: characteristics of those wanting to mentor, self evaluation of the level of confidence in each mentor's mentoring abilities, and the success of the program for high school students. Baseline data will be collected prior to the first mentor pair meeting, and final data will be collected at the conclusion of the program (Spring 2016).

Results: 15 medical students and 30 high school students were selected for the program. 11 (73.3%) of the medical student mentors stated a lack of mentorship in their personal career development as a reason for wanting to provide guidance to younger student. 5 mentor (33.3%) of the mentors had no family or friends who were physicians. Mentor's self reported level of confidence before the initiation of the program was a 2.47/5 (n=15, SD=0.83). Results from the conclusion of the program will be provided when available.

Conclusion: For the last two consecutive years, our chapter has successfully orchestrated "Girls Go Med Day", an intensive, day-long educational event for over 90 high school students. We developed "Girls Go Med Mentoring" in hopes to further develop our mentoring skills, and provide more students with individualized mentorship. Continued evaluation of our program will help identify possible changes, and improve our future program outcomes. Although we are at the beginning of our year long project, we are hopeful in it's success.

20. Cellular Response to Deep Brain Stimulation in a Rat Model
Ardila S, Baradaran-Shoraka M, Mafdali A, Kim EM, Schwarz J, Reynolds B, Okun M, Vedam-Mai V
Hypothesis: Deep brain stimulation is now becoming an increasingly common treatment for addressing medication refractory symptoms in movement and neuropsychiatric disorders. The mechanism(s) of action of DBS however remains largely unclear. Further, the cellular responses to acute and chronic electrical stimulation, as well as to the electrode implantation itself are also not clearly understood, specifically in the context of the neural stem cell compartment. Our objective is to investigate the cellular response to deep brain stimulation (DBS) in a rat model.

Methods: Naïve Sprague-Dawley rats were stereotactically implanted with bipolar electrodes and, after recovery, were subject to high frequency electrical stimulation (HFS). At the end of the experimental paradigm, animals were sacrificed and brains evaluated by immunohistochemistry using markers for neural progenitor cells (NPCs).

Results: DBS in our rat model showed an increase in NPCs as evidenced by positive immunoreactivity (IR) around the site of stimulation. This correlates with our human post-mortem studies of PD DBS patients where we observed an up-regulation of NPCs in the stimulation field, lateral ventricles, and around the third ventricle. Further, we observed a reciprocal relationship between activated microglia and NPCs as evidenced by microglial morphology (Iba1-IR cells).

Conclusions: A potentially beneficial consequence of DBS is the stimulation of cell genesis in the region immediately surrounding the implantation site. Inducing endogenous cell genesis (NPCs) is of interest to replace impaired cells in basal ganglia and to provide new dopaminergic neurons, which would be beneficial in neurodegenerative diseases such as Parkinson’s disease (PD). Our findings have the potential to be clinical relevant and can likely be harnessed to attenuate neuronal death and enhance functional recovery in a variety of neurological disorders and may help us to better understand the mechanisms underpinning the positive effects of DBS.

**21. Furthering patient care by implementing a venipuncture protocol in a student-run free clinic in Norfolk, VA**

Beauvais K, Berlin SKN, Churchill JL, Howard MD, James HR
Hypothesis/Background: The Eastern Virginia Medical School H.O.P.E.S. (Health Outreach Partnership of EVMS Students) Clinic is a student-run free clinic that provides healthcare bi-weekly to uninsured patients in Norfolk, Virginia. This patient population has a high prevalence of diabetes, hypertension, and hyperlipidemia, and these diseases, along with their associated medications, necessitate regular laboratory testing. Unfortunately, these tests often have costs that are prohibitive for many uninsured patients. The H.O.P.E.S. Clinic Lab Team attempted to address this issue by instituting a new venipuncture protocol that allowed H.O.P.E.S. to offer comprehensive metabolic panel and lipid profile testing to our patients.

Methods: A retrospective review of laboratory logs from the Lab Team was performed. The 6 month study period was defined as June 10 to December 9, 2015. The laboratory tests requiring venipuncture that were offered were comprehensive metabolic panel and lipid profile tests.

Results: Over the 6 month study period, 49 venipunctures were performed by Lab Team members. These venipunctures were performed by 10 students, of which 7 represent the medical degree classes of 2017, 2018, and 2019, 2 represent the physician’s assistant program of 2017, and 1 represents the medical masters program of 2016. The lab was able to provide lipid profile testing to 7 patients and comprehensive metabolic panel testing to 42 patients.

Conclusions: The venipuncture protocol allows the H.O.P.E.S. Lab Team to greatly expand the clinic’s repertoire of tests available to our uninsured patient population. Through this offering, the H.O.P.E.S. Clinic can save patients approximately $30 per test, a cost that prohibited many patients from obtaining needed labs in the past. The results demonstrate that attending physicians and student-clinician teams are utilizing the lab regularly to assess the renal function, liver function, and lipid profiles of our patient population, which allows close monitoring of diseases like diabetes, hypertension, and hyperlipidemia.

22. Rise in Narcotic-Related Deaths in South-West Michigan
Chen HI, deJong J

Special Credits for the Biostatistics Department at Western Michigan University
Homer Stryker MD School of Medicine
Hypothesis: In South-West Michigan, there has been a surge in overdose-related deaths in the last few years, from 2 in 2008 to 151 in 2014. We think the majority of these deaths are due to narcotics and that the proportion of narcotic-related deaths has risen significantly in the past 7 years.

Methods: Toxicology data from 468 autopsy reports representing all deaths ruled a drug overdose in the region from 2008-2014 was compiled in a database. We then assessed trends in drug overdoses involving fentanyl, heroin, hydrocodone, methadone, morphine, and oxycodone during this time. Cocaine related deaths were assessed as a potential indicator of overall illicit drug use increasing. Individuals with multiple drugs in their system were included in the counts for each drug. Our analysis compared deaths that involved each drug to the total number of accidental deaths of that year. Statistical Process Control (SPC) charts were utilized and RStudio 3.1 was used for analyses.

Results: The number of accidental overdose deaths compared to total accidental deaths rose from 4% in 2008 to 42% in 2015. We found that over the time period of 2008 to 2014, the proportion of overdose deaths related to fentanyl rose by 7.7%; oxycodone by 6.7%; hydrocodone 10.4%; and heroin by 11.4%. The changes seen in the death rates related to cocaine, methadone, or morphine were not significant.

Conclusions: Overall, we have concluded that there is statistically significant evidence that narcotic drug overdoses are increasing significantly in southwest Michigan. Since this trend has also been seen in other parts of the United States, we think that preventing narcotic-related deaths should garner more attention as a public health issue.

23. Osteopathic Medical Student Administered Smoking Cessation Counseling is an Effective Tool in Tobacco Use Reduction
Chez A, Carpenter T, Hubert L, Hewan-Lowe L, Ozcan A, Sahni S, Capozzi B

Hypothesis: Physician counseling on the risks of tobacco smoking and the benefits of cessation has been shown to be an effective method of increasing the rate of smoking cessation in patient populations. Using the “7A’s of Smoking Cessation” guideline from the New York City Department of Health and Mental Hygiene (NYCDoH) is thought to be effective to convey the importance of smoking cessation. We studied the efficacy of the “7A’s of Smoking Cessation” guideline counseling conducted by osteopathic medical students.
Methods: Osteopathic medical students were trained to counsel smokers for 3-10 minutes on smoking cessation based on (NYCDoH) “7A’s of Smoking Cessation.” guidelines. Students then counseled health fair participants who were cigarette smokers for 3-10 minutes. After the counseling session, participants were administered an anonymous 4 question survey to evaluate the effect that the counseling had on their desire to quit smoking. Survey data was collected and tabulated. Data was then analyzed for statistical significance. IRB approval was obtained for this study.

Results: 13 anonymous health fair participants who were also smokers were administered both counseling sessions and surveys. 11/13 (84.6%) participants stated that the session motivated them to quit smoking. 9/13 (69.2%) participants responded that they were now motivated to discuss smoking cessation with their doctor after being counseled. Of these participants 12/13 (92.3%) had previously attempted to quit smoking without success.

Conclusion: Participants reported an increased willingness to stop smoking after being counseled by osteopathic medical students on the benefits of smoking cessation. Participants also reported an increased motivation to discuss smoking cessation with their physician. These findings indicate that smoking cessation counseling administered by osteopathic medical students was an effective way to encourage smokers to consider reduction or cessation of tobacco use. Due to a small sample size further larger studies are needed to confirm this study.

24. Racial Differences in Breast Cancer Screening by Family History
Chiu L

Introduction: Despite decreasing incidence and mortality rates in breast cancer in the U.S, reductions in breast cancer mortality and diagnoses have been smaller and less consistent among minority women. Mammography screening is vital in reducing breast cancer mortality, underscoring the importance for equal participation in screening among all ethnicities to reduce racial disparities in breast cancer diagnosis and survival. This study analyzed the effect of a positive family history of breast cancer on routine mammography screening behavior of U.S. women. Furthermore, we examined for racial variation in the association between family history of breast cancer and routine mammography screening. METHODS: Data utilized came from the 2005 and 2010 National Health Interview Surveys (NHIS). Our eligible population
consisted of asymptomatic women >age of 40 (n=19,909). Bivariate analysis was conducted using chi-squared tests to examine socio-economic characteristics of participants based on their recent mammography screening status. Multivariate logistic regression models adjusted for potential confounders were run to assess the association between routine mammography screening and breast cancer family history, and further stratified by race/ethnicity.

Results: Adherent and non-adherent women significantly differed in age, education, family income, insurance coverage status and family history of breast cancer. Women with a breast cancer family history were more likely to report routine mammography screening (within the past 12 months) than women with no breast cancer family history (OR=1.407; 95% CI: 1.258, 1.574). This relationship held among whites (OR=1.406; 95% CI: 1.239, 1.595) and blacks (OR=1.512; 95% CI: 1.0762, 2.123), but was not statistically significant among Hispanics and Asians.

Conclusions: Race/ethnicity differences exist in the relationship between routine mammography screening and family history of breast cancer. Stronger efforts in healthcare must therefore be made to continue identifying and addressing challenges preventing at-risk minority women from adhering to regular mammography screening.

25. Coming into focus: observations from the establishment of a free ophthalmology clinic in an underserved community
Churchill J, James H

Introduction: Poor ophthalmic health severely impacts school and work performance, quality of life, and life expectancy while costing billions of dollars in medical expenditures each year. While eye and vision problems are often associated with age, low income and racial and ethnic minorities also have an elevated risk for eye problems. Student-run free health clinics such as the Health Outreach Partnership of EVMS Students (H.O.P.E.S.) Ophthalmology Clinic in Norfolk, Virginia are ideally situated to ameliorate these barriers.

Methods: A retrospective review of EVMS H.O.P.E.S. patient screening data from November 1, 2014 and June 20, 2015 and Ophthalmology Clinic patient counts from January 1 through June 30, 2015 was conducted.
Results: 135 unique patients were seen over the data collection period, and 87 patients were included in analysis. 63% (55 individuals) were in need of an ophthalmic appointment. 28 total patients and 36% (20 individuals) of overdue patients were seen by the EVMS HOPES Ophthalmology Clinic during the study period. 22 pairs of glasses were provided to patients. 6 referrals were provided for patients in need of extensive glaucoma evaluation or surgery.

Discussion: Over the first 6 months of operation, the H.O.P.E.S. Ophthalmology Clinic significantly decreased the number of high risk patients in need of ophthalmic care. By providing ophthalmic services free of charge to patients in need, the H.O.P.E.S. Ophthalmology Clinic successfully reduced the access to healthcare gap experienced by the residents of Norfolk, Virginia.

26. Emergency Department vs. Ambulatory Settings: HIV Testing and Outcomes in Guatemala City
Cohen R, Anderson M, Samayoa B, Narda Medina L

Hypothesis: The CDC has called for routine HIV testing in all healthcare settings including emergency departments. The efficacy of such screening in identifying new HIV cases and transitioning new diagnoses to long-term care has not been studied in Central America. We examined whether rapid HIV testing in the ED of a major Guatemala hospital could identify new HIV+ patients and link to long-term outpatient care.

Methods: We compared all rapid HIV tests performed in the ED of a major Guatemala hospital to all tests done at the hospital’s HIV testing service between August 1, 2013 and May 29, 2015. We used t-tests and chi-squared to evaluate the statistical significance of differences between the two populations.

Results: 97 of 8730 tests performed in the ED were positive (1.11%) while 577 of the 6665 outpatient tests were positive (8.66%). However, substantially more new HIV diagnoses were made in the ED compared to the clinic (63.9% vs. 20.5%, p<0.001). ED patients were older (37.7 vs. 33.2, p = 0.02); there were no significant differences in gender, mean income, ethnicity, level of education, or working status. ED patients were less likely to have been sexually active within five years (79.5% vs. 95.7%, p = 0.001), to identify as homosexual or bisexual (8.2% vs 29.9%, p=0.008), and had fewer partners on average. No patients in the ED reported a partner infected with


HIV compared with 34 (28.8%) in the ambulatory setting (p <0.001). There was no significant difference in linkage to care.

Conclusions: The rate of HIV positivity was low in both settings and patients were demographically similar. ED testing identified more new diagnoses and patients were lower risk. Linkage to care was comparable for the two populations. This evidence supports increased ED HIV testing in this and similar hospitals.

27. Medical Students’ Attitudes Toward Non-Adherent Patients Before and After a Role-Playing Activity and Small-Group Discussion: Revisited
DelPrete AM, Giordano C, Hernandez C, Castiglioni A

Hypothesis: We hypothesize that the documented decline in medical student empathy can be prevented or retarded using patient-simulation exercises and small-group discussions about patient perception.

Methods: In this study, first-year students (M1 class) at the University of Central Florida College of Medicine (UCFCOM) participated in a patient scenario simulating the life of a patient with type 2 diabetes mellitus. Interventions included taking daily “medication,” participating in moderate exercise, and maintaining a low carbohydrate diet. At the end of the simulation, students took part in a small group discussion about their experiences. Students completed the Jefferson Scale of Physician Empathy- Student Version (JSPE-SV) before and after the intervention. Additionally, fourth-year students (M4 class) at UCFCOM completed the JSPE-SV to serve as the control.

Results: A total of 86 responses (71%) were received. Of these, 62 surveys were complete and were therefore used for statistical analysis. A Dependent Sample T-test revealed no statistical significance on pre-treatment (M=111.15, SD=8.57) and post-treatment (M=111.39, SD=9.12) empathy scores for the M1 class. A positive correlation was revealed to exist between pre- and post-treatment empathy scores (r= 0.72, p<0.001).

Conclusions: Although previous authors have shown that interventions such as those performed by this study should maintain and/or increase empathy in medical students, our findings suggest that on a short-term scale, empathy levels were not affected by the intervention. However, we hypothesize that longitudinal data
collection will reveal a smaller decrease in empathy from M1 to M4 year in students who took part in the intervention.

28. Prospective Analysis of Clinical Skills, Attitudes, and Knowledge of LGBTQIA Communities at UC San Diego School of Medicine
Ferrel VK, Tantoco NK, Berquist SW, McDonald DN

Hypothesis: LGBTQIA people are hugely affected by a pervasive social stigma that perpetuates poor health outcomes. Among entering medical students at the University of California, San Diego, it is hypothesized that clinical and practical knowledge, attitudes, and skills regarding LGBTQIA people is more thorough and progressive compared to the general population.

Methods: A 10 minute questionnaire (24 “attitudes”, 16 "knowledge”, and 9 demographics questions) was administered to first year medical students; they are encouraged to participate in the questionnaire four times during the academic year. Participants rate their familiarity with various terminology and aspects of their life experiences with LGBTQIA individuals using a 5-point Likert scale. Knowledge is elicited using a series of true/false questions, multiple choice questions, and five free-response questions. Demographic information is collected via free-response tools for each participant.

Results: Of 125 entering students, 20 participated in the questionnaire during the first quarter (RR 16%). Subjective perceptions of attitudes trend positively, with 100% of respondents strongly agreeing with the statement “LGBT patients deserve the same level of quality care from medical providers as other patients”. Objective measurements of knowledge were dependent on topic. 95% of participants correctly identified the term transgender to be defined as “an umbrella term used to describe individuals whose gender identity is different from their natal sex”. In contrast, 20% of respondents correctly identified that the rates of “completed suicide among lesbian women and gay men” are similar to the population at large. 25% of participants were able to identify that the highest incidence of HIV infection is among Black men who have sex with men.

Conclusions: Among participants in this study, attitudes regarding LGBTQIA people trend positively and can be interpreted as progressive. However, the depth of clinical skills, and knowledge of LGBTQIA people varies among participants - a reflection in
the diversity in background and life experience among medical students. The cohort in this study will be reassessed quarterly to examine whether ongoing LGBTQIA-centered curricular changes influence responses and/or the difference between perceived attitudes and measured knowledge.

29. Course Director Selection of Faculty Lecturers in Undergraduate Medical Education
Fitzgerald A, Manka M, Orlando M, Wright S

Hypothesis: Course director selection of faculty to lecture during the first two years of medical school may be influenced by factors that lead to a lack of gender parity among the lecturers.

Methods: We surveyed academic years 2013 and 2014 preclinical course directors at the Johns Hopkins University School of Medicine. The questionnaire focused on factors related to faculty selection of lecturers including recruitment, turnover, salary support, motivators, dissuaders, appreciation, and diversity. The importance of various determinants were assessed using Likert scales. We used Fisher's exact test to compare differences by course directors’ gender, rank, course directing experience, and the percent of female lecturers.

Results: 90% of respondents felt the lecturers in their course were representative of the larger faculty in terms of gender diversity but only five (5/32, 15%) have a representative mix. The respondents perceived that commitment to education and enjoyment of teaching are the primary motivators behind the decision for faculty to accept offers to teach. Female course directors rated the importance of gender balance lower (P = .05) than male counterparts but included more female lecturers (P = .01).

Conclusions: Course director perceptions regarding gender composition among lecture faculty suggests a lack of awareness, and perhaps a lack of appreciation for diversity issues. Medical schools may wish to ensure that course directors are explicitly made aware of the composition of the faculty and urged to recreate similar teacher compositions within courses for the sake of both the students and educational quality.
30. Gender differences in treatment outcomes in patients with comorbid bipolar disorder and alcoholism

Garcia AN, Miao F, Salloum IM

Hypothesis: The presence of comorbid alcohol dependence and bipolar disorder leads to unfavorable outcomes, negatively impacting treatment response. We hypothesize that there are significant differences amongst genders with respect to clinical characteristics and treatment outcomes in patients with bipolar disorder and alcoholism.

Methods: We conducted a post-hoc analyses of a randomized, double blinded, placebo-controlled trial for patients with comorbid bipolar disorder and alcoholism on lithium carbonate who were assigned to receive either valproate or placebo for 24 weeks. We examined gender differences in baseline characteristics, alcohol, and mood treatment outcomes. Mixed model analyses tested the difference in repeated measure outcomes between the groups for each gender separately, adjusting for fixed effect of age, socioeconomic status, days in the study, completion status, and for random effect of week number.

Results: 52 participants (37 males and 15 females) completed at least one assessment after randomization. Approximately 40.5% of males and 33.3% of females completed the study, and 51.4% of males and 53.3% of females were assigned to valproate. Except for mania (p=0.0327), there were no significant gender differences in baseline characteristics including age, socioeconomic status, average days in the study, alcohol outcome variables, and depression. Mixed model analysis showed that valproate significantly decreased proportion of days with any drinking, proportion of days with heavy drinking, drinks per any drinking day and drinks per heavy drinking day in male patients only (p=0.08, 0.02, 0.09 and 0.05). There was no similar trend found in female patients. The two genders did not differ in mood outcomes.

Conclusion: The results of this study indicate a potential differential treatment response in alcohol outcome between the two genders. While this study was a randomized controlled trial, the female sample size was small, thus limiting its ability to detect difference. The results of this study highlight the need for further studies focusing on gender and treatment response to optimize gender-specific interventions.
31. Mining gene expression signatures to identify differentially expressed genes that couple development of brown adipocytes to resistance to obesity
Geib LN, Collins S, Liu D

Introduction: As obesity becomes an escalating concern worldwide, the need to better understand the molecular underpinnings of the disease becomes increasingly apparent and urgent. Genetic factors in particular demonstrate a substantial contribution to susceptibility to obesity when combined with the high-caloric diets and minimal physical activity of modern lifestyle; yet specific mechanisms and heredity are poorly understood in this area. This study focuses on brown adipose tissue (BAT) because of its capacity to expend energy and its negative correlation with obesity. Specifically, we are examining genetic regulators responsible for the development of BAT within white adipose tissue depots exposed to a β3 adrenergic agonist, CL316,243.

Methods: Tissue from mouse strains resistant to diet-induced obesity (A/J) were compared to tissue from strains prone to diet-induced obesity (C57BL/6J). Long-non coding RNA (lncRNA) and mRNA levels in CL316,243-treated or control-treated tissues were measured with (q)-RT-PCR and protein levels using Western blotting. We also attempted to determine the length of a select lncRNA via Northern blotting in order to determine its exact genomic location and sequence. In addition, this project sought to knock down a particular lncRNA to determine its effect on a small battery of genes whose expression is known to be necessary for a cell to function as a brown adipocyte.

Results: Our results validated a lncRNA on chromosome 13 (lncRNA 13), indicating that its expression is significantly inducible with a β3 adrenergic agonist, with A/J showing higher expression levels than B6. The validation of lncRNA 13 indicates that a true difference exists between the expression of this lncRNA in mice that have a strong capacity to develop BAT with β3AR agonist treatment and those that do not. This data implies that lncRNA 13 may influence development of BAT and play a role in susceptibility to developing obesity.

32. Efficacy of a Biologically-Oriented Lung Cancer Education Program on the Attitudes, Behavior and Knowledge of Adolescents
Hypothesis: Following the presentation of a biologically-oriented program on the effects of tobacco use in a public school classroom, the number of potential adolescent smokers will decrease.

Methods: Medical students delivered a 45-minute, standardized, science-based presentation designed to incorporate the etiology, pathophysiology, and prevention of lung cancer. School and parent permission forms and student assent were obtained. Participants completed a questionnaire prior to and immediately following the presentation in a quasi-experimental design. Study investigators created the questionnaire and presentation material to meet the aims of the study. To maintain anonymity, questionnaires remained unmatched. Statistical analyses were performed with SPSS software using the independent sample t-test.

Results: After 36 presentations, a total of 559 participants age 13-18 completed the questionnaires. 6.7% of students reported having smoked cigarettes and 34.7% of students had close contact with someone using tobacco products. Competency regarding tobacco- and cancer-related concepts showed a significant increase (p=.001) from 49.0% to 59.2% following the presentation. The number of self-reported potential smokers significantly decreased from 21.8% to 16% following the presentation (p=.013).

Conclusions: Education is a key component of any preventative medicine initiative. In 2012, more than one-fifth of high school students in the US were tobacco users, despite tobacco education programs in many school’s curricula. Medical students at New York Medical College identified an opportunity to develop and teach a biologically-oriented tobacco education program. Although the majority of adolescent students sampled were not regular tobacco users, a large percentage of students had used tobacco before and/or had close contact with a tobacco user. After participating adolescents were taught the biology behind the health risks associated with smoking, the number of self-reported potential smokers decreased significantly. The resourceful and sustainable design of the program allowed medical students to use their scientific knowledge to make a positive impact in the adolescent community while also enhancing their role as future medical educators.

33. Bridging the Gap: Increasing Awareness and Access to Reproductive Health through Medical Education
Gulati A, Winer L, Khaja A, Blankenship S, Tappy E, Fiorentino D, Mundy L, Curry CL
Hypothesis: Despite the American Congress of Obstetricians and Gynecologists recommendation that medical students should graduate with the knowledge and skills necessary to counsel patients on reproductive health options, many medical schools fail to provide such education. Our training program will bridge this knowledge gap by training 1st/2nd year medical student on how to counsel patients on pregnancy options, including terminations and long acting reversible contraceptives (LARC). Additionally, the reproductive health advocates (RHAs) will be paired with patients seeking a termination or LARC to provide them support and guidance.

Methods: After obtaining IRB approval, an application to become a RHA was emailed to all second year medical students. Thirteen students completed the training sessions, which included lectures on contraception, patient counseling, pregnancy options, 1st/2nd trimester abortions, and laws/finances regarding reproductive services. We administered pre and post training surveys to assess student knowledge and attitudes towards reproductive health.

Results: A total of 13/13 (100%) students, all female with an average age of 24.3, completed the pre/post training surveys. When asked which contraceptives were considered LARC, 77% answered incorrectly on the pre-test before training, but only 23% (p=0.0003) after training. Similarly, 84.62% misidentified an emergency contraceptive on the pretest, whereas only 8% (p=0.0003) afterwards. Our training sessions also shifted the advocates’ perceptions regarding reproductive healthcare and access disparities. Only 46% considered abortion as a safe procedure before training, 100% (p=0.0498) agreed afterwards. Similarly only 8.33% believed abortion access is problematic before training, yet 66.67% (p=0.0498) agreed afterwards.

Conclusion: Since launching the program in July 2015, we have trained 13 RHA’s and 43 women have been referred to the advocate services. In January 2016 we will invite first year medical students to become reproductive health advocates to expand access for an increased number of patients.

34. Women in Medicine: Lessons from our Predecessors
Background: Much has changed since the first woman physician in America graduated from medical school in 1849. The purpose of this study is to document personal stories of a previous generation of women physicians and learn from their living historical experience.

Methods: After institutional review board approval, the research team of medical educators and students conducted structured interviews with 19 women physicians who had graduated from medical school before 1975. The interviewers asked the respondents to describe their medical school admissions process; the number of women in their class; their relationships with female and male students and faculty; their relationships with women in more traditional roles in the community; and their professional relationships after graduation.

Results: Interviewee ages ranged from 65-90. All were Caucasian (94.7%) except for one Chinese American. Their specialties included pediatrics/pediatric subspecialties (N=8; 42.1%), psychiatry (N=3; 15.8%), surgery/surgical subspecialties (N=2; 10.5%) and one each (5.3%) in anesthesiology, epidemiology, oncology, Ob/Gyn, public health, and radiology. Common themes included: challenges of having only 4 or 5 female medical students in their class; the importance of personal support from classmates and professional support from mentors; the difficulty of finding successful women physicians to be mentors; challenges of raising a family while in training or starting a practice; challenges of being a woman professional when most American women still remained homemakers rather than entering the workforce; the remarkable changes in medicine over the past 50 years. However, without exception, all had no regrets about becoming a physician and emphasized that it has been an exciting and stimulating life path.

Conclusion: By capturing the voices of these predecessors, we can identify common trends and benefit from their struggles and their successes. In doing so, this project will assist in supporting women who are presently navigating the pathway to careers in medicine.

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35. Sex and Gender in Medical Education National Student Survey
Objective: Sex and gender based medicine (SGBM) is the practice of medicine based on the understanding that biology and social roles are important in prevention, screening, diagnosis, and treatment. The extent of previous integration initiatives and their impact on the student body’s knowledge has not been fully studied. By surveying the opinions of U.S. medical students on the degree to which their schools address these topics and their understanding of these topics, we examined the role of SGBM in medical school curriculum.

Methods: An email solicitation with link to an anonymous survey was sent to approximately 43,400 members of five U.S. medical student organizations. The survey consisted of yes/no, multiple choice, and attitude/awareness questions. Data was analyzed as a complete data set to evaluate national trends and via subset analysis using chi-square, paired t-test, and one-way anova.

Results: A total of 1,097 students met the inclusion criteria for final analysis. 96% of respondents strongly agreed that SGBM improves patient management and should be included in medical school curriculum ($p < 0.05$, $df=3$). Only 2.4% of participants agreed that SGBM is the same as “women’s health.” The majority of students also agreed that the medical knowledge base is primarily derived from the male model ($p < 0.05$, $df=3$). Students reported varying degrees of exposure to evidence-based health differences between men and women.

Conclusions: We found that students recognize the difference between SGBM and women’s health and understand the translational value of SGBM principles in the clinical setting. However, variable discordance exists between expressed knowledge and their perceived amount of exposure to these evidence based health differences between men and women. This, along with marked inconsistency in the reported inclusion of the topics within curricula, demonstrated that future efforts toward uniform integration of sex and gender evidence into medical education are needed.

36. The Relationship of Oxygen Saturation and Heart Rate During Rapid Ascent to High Altitude
Katari P
It is well known that the physiological response to hypoxic hypoxia is the upregulation of sino-atrial firing, increasing the heart rate in order to maintain oxygenation of the body. While the general nature of this relationship is understood, there have been few studies that demonstrate the relationship of oxygen saturation and autonomic compensatory response to high altitudes at ascent rates associated with aviation. 50 healthy subjects took part in a slight simulation in an environmental physiological unit (EPU) as part of a routine occupational physical exam. Utilizing a pulse oximeter, the oxygen saturation and heart rate of each subject was recorded in minutes and ascent and descent was simulated at a rate of 1500 feet per minute. Data was extracted from the charts of subjects in order to calculate the slopes of change in oxygen saturation and change in heart rate during time of ascent. Using the two slopes of oxygen desaturation and heart rate a slope index was created demonstrating that the relationship between oxygen saturation and sino-atrial firing at an ascent rate of 1500 ft per minute was -1.26 (beats/% oxygen). This value demonstrates that oxygen desaturation and heart rate have a direct inverse relationship at the ascent rate of 1500 ft/min. This value also shows that the autonomic compensatory response to hypoxia is intact at the ascent rate of 1500 ft/min in healthy adults. The data from this study could serve as a starting point for further studies on physiological changes in modern aviation as passengers travel to higher altitudes and at faster speeds; as well as to better determine parameters of treatment in flight medicine.

38. Gestational weight gain and preterm delivery according to maternal age

Hypothesis: Inadequate gestational weight gain (GWG) is associated with higher rates of preterm birth in non-obese women and the association is modified by maternal age.

Methods: We performed secondary analysis of data on women participating in PRAMS (2009-2011). We included women with a pre-pregnancy BMI <30 who delivered singletons. The independent variable was adequacy of GWG (adequate, excessive, and insufficient), as defined by the IOM. The dependent variable was preterm delivery (<37 weeks). We assessed effect modification by maternal age using multivariable logistic regression. Stata 14 was used for statistical analysis.
Results: A total of 28,043 women were included in our study. Overall 33.0% of mothers gained adequate weight, 21.8% gained insufficient weight and 45.2% gained excessive weight. In the unadjusted analysis, compared to mothers with adequate weight gain, insufficient weight gain was associated with higher odds of preterm birth (OR=1.8, 95% CI=1.5-2.1) and excessive weight gain was associated with lower odds of preterm birth (OR= 0.7, 95% CI=0.6-0.8). Our adjusted analysis accounted for potential confounders (age, race, education, marital status, smoking/drinking, and insurance/WIC use) and showed similar results for insufficient weight gain (OR=1.7, 95% CI=1.4-2.2) and excessive weight gain (OR=0.6, 95% CI=0.5-0.8).

Independent of GWG, a maternal age of 19 years or younger showed an increased risk of preterm labor compared to all other age groups (OR=1.9, 95% CI=1.5-2.4). However, when maternal age was analyzed as an effect modifier for GWG in the outcome of preterm labor, the association was found to be non-significant (OR=1.0, 95% CI=0.9-1.1, p value=0.63).

Conclusions: Our study found evidence that insufficient weight gain is associated with a higher risk of preterm delivery, while excessive weight gain was found to have a protective effect against the outcome. Furthermore, the association between GWG and preterm labor does not appear to be modified by maternal age.

39. Assessment of the Successes, Challenges, and Best-Practices for Coordination of Integrated Primary Care and Oral Health Care Services at the Widenmann School-Based Health Center in Vallejo, California
Lalic K, Aalborg A, Cummings G

Background: The Children’s Oral Healthcare Access Program (COHAP) was a 4-year comprehensive oral health services project funded by the Maternal and Child Health Bureau which aimed to demonstrate successful integration of comprehensive oral health services into the existing menu of primary care services at the Widenmann School-Based Health Center (SBHC) in North Vallejo, California. The aim of this study is to provide insights on the successes, challenges, and best-practices on the coordination of integrated primary care and oral health services at the Widenmann SBHC.

From March 2012 to September 2015, COHAP enrolled 969 patients between the ages 0 and 18. In total, staff delivered 907 dental x-rays and oral exams; 1,485 prophylaxis; 211 dental sealants; 1,527 fluoride varnish applications, and health
education. Mini education projects facilitated in pre-school and elementary school classrooms within the Vallejo City Unified School District provided other opportunities for health education, reaching 5,201 children over four years. Solano Coalition for Better Health spearheaded the project and provided coordination, promotion, reporting, and fiscal oversight. Partners included the Vallejo City Unified School District, Touro University California, First 5 Solano, and dentists.

Methods: The assessment uses qualitative and quantitative data collected by the SBHC staff, the Touro University evaluation team, and Solano Coalition for Better Health. Qualitative data includes key informant interviews and focus groups conducted in year 1, 3, and 4. Interviewees include project collaborators, oral health service providers (n=12), and parents of children receiving services (n=13). Quantitative data includes patient demographics and a detailed breakdown of services rendered.

Results: Successes include key personnel; interdisciplinary collaboration; and increased access to preventive services. Challenges include the use of integrated electronic health records and sustainability of services. Best practices include successful methods of community outreach and health education delivery; cultural competency among staff; and diversity within the SBHC’s advisory council.

40. Assessing Correlates and Inter-rater Reliability of the Surprise Question in Non-dialysis Dependent CKD
Mizera M, Ikizler TA, Abdel-Kader K

Older adults with severe chronic kidney disease (CKD) frequently receive care at the end-of-life that conflicts with their values and preferences. Prognostic uncertainty is a critical barrier that prevents providers from engaging patients in timely prognostic and advance care planning discussions. The surprise question (SQ), “Would you be surprised if this patient died within 12 months?” has been advocated as a practical tool to identify patients at high risk for short term mortality; however, it’s validity and reliability in non-dialysis dependent CKD has not been explored. We hypothesized the SQ would associate with cardiovascular disease (CVD), congestive heart failure, comorbidity burden, and low albumin levels and have a moderate to high inter-rater reliability between attendings and fellows. We conducted a cross-sectional analysis of a prospective cohort study at Vanderbilt’s outpatient nephrology clinic. We asked enrolled nephrology providers the SQ immediately following an eligible patient visit. Responses were recorded using a simple dichotomous ‘Yes’/’No’ and a 5-point Likert
Scale with lower scores indicating less surprise. Patient characteristics were abstracted from the electronic health record. SQ responses associated with multiple clinical markers in univariable analysis (n=76) including age (β=-0.46, standard error [SE]=0.18, p=0.01), CHF with decreased LVEF (β=-1.94, SE=0.54, p=0.001), hospitalization in the prior year (β=-0.81, SE=0.31, p=0.01), Charlson Comorbidity Index (β=-0.15, SE=0.06, p=0.01), hemoglobin (per 1g/dL increase) (β=0.43, SE=0.11, p<0.001), and albumin (per 1g/dL increase) (β=0.97, SE=0.44, p=0.03). The dichotomous SQ demonstrated moderate inter-rater reliability (kappa = 0.42, SE=0.17, p=0.008, n=29). These results suggest that the SQ response associates with known predictors of mortality in non-dialysis dependent CKD. In addition, the SQ appears to have moderate inter-rater reliability among nephrology providers at different stages in training/practice.

41. Assessing the effect of post-surgical scars on quality of life in patients with nonmelanoma skin cancer: a prospective study
Mlacker S, Shah V, Aldahan A, Nouri K

Background: Scars may negatively impact a person’s physical appearance, which can lead to psychological distress, behavioral problems, and decreased quality of life. This study aims to determine whether scar formation has a positive, negative, or neutral impact on quality of life in the setting of preexisting nonmelanoma skin cancer.

Methods: Before undergoing Mohs surgery, patients at the Sylvester Comprehensive Cancer Center/UMHC will be asked to complete the Dermatology Life Quality Index, along with a second page addendum including questions related to basic demographic information such as age, sex, race, as well as any medical comorbidities, type of skin cancer undergoing surgical removal, prior history of skin cancer, prior history of surgical removal of skin cancer, and any history of aesthetically displeasing scars. The following information will also be collected: location and number of skin cancer lesions present, pre-op cancer size and post-op scar size. The DLQI will be given again to patients 3 months following their surgical removal, either in the office or via telephone. At this time, patients will also be asked if they have ever been prescribed an antidepressant medication.

Results: 115 patients have completed the first survey, 32 of which are women. All responses thus far indicate that nonmelanoma skin cancer has minimal to no impact
on quality of life. 10 patients have been called to date, 2 of with all reporting a negligible impact on their quality of life after scar formation. Statistical analysis will be performed as the remaining 105 patients are called in the next 2 months.

Conclusion: Quality of life measures are becoming increasingly important to determine patient-reported outcomes in medicine, supplementing traditional measures of disease response to treatment. As medicine grows into a more patient-centered field, quality of life assessment will continue to serve as a more integral part of medical practice.

42. Assessment of Mitochondrial Membrane Potential in HEI-OC1 and LLC-PK1 Cells Treated with Gentamicin and Mitoquinone
Ng MRA, Antonelli PJ, Joseph J, Dirain C

Hypothesis: To determine the effects of concurrent treatment with gentamicin and the mitochondria-targeted antioxidant mitoquinone (MitoQ; which may prevent gentamicin ototoxicity) on change in the mitochondrial membrane potential (Δψm), a precursor of apoptosis.

Subjects and Methods: LLC-PK1 (Lilly Laboratories Culture–Pig Kidney Type 1) and HEI-OC1 (House Ear Institute Organ of Corti 1) cells—renal and auditory cell lines, respectively—were used in this study. Δψm was assessed by flow cytometry through the MitoProbe JC-1 Kit for Flow Cytometry in untreated LLC-PK1 and HEI-OC1 cells and cells exposed to low- (100µM) or high- (2000µM) dose gentamicin for 24 hours, with and without 0.5µM each of MitoQ or idebenone (IDB; an untargeted ubiquinone).

Results: Δψm was not different in untreated LLC-PK1 cells and cells coincubated with low-dose gentamicin and MitoQ or IDB (P > .05). In HEI-OC1 cells, coincubation with low-dose gentamicin and MitoQ decreased Δψm (P = .002). Coincubation of LLC-PK1 cells with high-dose gentamicin and DMSO, MitoQ, or IDB depolarized Δψm (P < .0001), with MitoQ depolarizing the Δψm to a greater extent than that of IDB (P = .03). In contrast, HEI-OC1 cells demonstrated a hyperpolarized Δψm when coincubated with high-dose gentamicin and DMSO, MitoQ, or IDB (P < .001).

Conclusion: The combination of gentamicin and MitoQ holds the potential to disrupt Δψm. This suggests a heightened need to monitor for toxicity in patients receiving both agents.
43. Mastering difficult intubations using the Glidescope videolaryngoscope
Paez Y, Hastings RH, Cheng CR, Delson NJ

Hypothesis: Practice on a difficult videolaryngoscopy partial task trainer will decrease intubation times on other easy and difficult task trainers.

Methods: Twenty-two anesthesia residents gave informed consent and participated. Pre-training tests of time to intubation with the Glidescope videolaryngoscope were performed on a TruCorp mannequin and on the UCSD Parametrically Adjustable Airway Mannequin (PAAM), representing easy and difficult videolaryngoscopy trainers. Participants then trained 45 minutes in 8 skills that facilitate successful videolaryngoscopy on the PAAM in a different difficult configuration than used in the initial test. This was followed by post-training tests of intubation times on both the easy TruCorp trainer and the PAAM in the original difficult configuration. Finally, residents repeated the timed intubations to test skill retention 1-2 months after the training.

Results: On the difficult trainer, 18/22 residents significantly reduced their time to intubation immediately after the training and 16/20 who performed the retention test retained a shorter time compared with pre-training times. Intubation on the difficult configuration took an average of 66 ± 13 seconds before training, 23 ± 2 seconds immediately post-training, and 33 ± 6 seconds in retention tests 1-2 months later (P < 0.01 by repeated measures ANOVA). Intubation times were less on the easy TruCorp trainer than on the difficult PAAM trainer at each point and also improved with training.

Conclusions: In 5-15% of patients, intubating the trachea with the Glidescope is difficult even though the cords are easily visualized. Therefore, a training program that allows participants to practice intubating on a mannequin that mimics these difficult conditions is imperative. The effectiveness of the PAAM training protocol was supported by improvement in trainee’s performances and retained skills many weeks after the training.

44. Women Leading Healthy Change: Improving a Student-Led Health Curriculum for Women Recovering from Prostitution or Substance Abuse
Prasad S, Garfield E, Kerlakian S, Reimer S
Women Leading Healthy Change (WLHC) is a student-led program in which medical students teach physical and mental health to women recovering from prostitution and drug addiction. Students, in turn, learn to approach this otherwise neglected population with compassion and empathy. This year, our goal was to expand the program, and study the efficacy of these classes as well as changes in health beliefs during the program.

Methods: Students conduct ten week courses on women’s and mental health. Women’s health classes discuss female anatomy, gynecological exams, sexually transmitted illnesses, and contraceptive methods, while mental health sessions focus on the biologic basis of mental illnesses, common mental illnesses (Depression, Bipolar Disorder, and PTSD), medications, and healthy living. Quizzes are administered before and after each lesson to assess improvement in knowledge. Additionally, numerically matched surveys are distributed to assess both the women’s and medical student’s change in health behaviors or sense of empowerment over the program’s entirety.

Results: Of first 7 weeks’ quizzes, 6 show significant (p<0.05) improvement in scores. Student and participant surveys thus far show a positive shift in comfort and confidence with information about their health and interacting with their doctors.

Conclusions: While we have not yet shown significance in the positive change in empowerment or comfort with health, the level of knowledge for women’s health and mental health topics has significantly increased. Classes will continue into the spring semester and quizzes and surveys from both students and our participants will be analyzed with this larger sample size for statistical significance. Increasing our pool of participants will strengthen these results, as well as give us the opportunity to compare student and participant empowerment surveys. Significant improvements in learning during this year’s expansion of our program give us hope for continuing to grow WLHC’s outreach within Cincinnati.

45. Systematic Review of Cognitive Behavioral Therapy to Improve Mental Health of Women Living with HIV
Pu H, Hernandez T, Sadeghi J, Cervia J

Hypothesis: CBT interventions and efficacy has rarely been examined in HIV/AIDS infected women despite the fact that women comprise more than one in four new cases of HIV in the US. This review examines the impact of Cognitive Behavioral
Therapy (CBT) on depression, stress, quality of life (QOL), and anxiety in women with HIV.

Methods: Literature searches were conducted to find studies which met the inclusion criteria. Effect sizes were calculated for individual studies.

Results: CBT appears to moderately enhance quality of life of women with HIV/AIDS, with little effect on stress, and no significant impact on anxiety. CBT had a large effect on subsets of women with severe depression, but not upon study groups which included women with lower risk of depression.

Conclusion: CBT has potential to improve QOL, depression, and stress in women with HIV/AIDS, especially in those with severe depression, but there is a need for more research on best clinical care practices for women with HIV/AIDS.

46. Hearing Loss in NICU Infants
Ranu J, Khalak R, Kaur R

Hypothesis: The National Institute of Health has recommended hearing screens to be administered on infants in the Neonatal Intensive Care Unit (NICU) prior to their discharge as they are ten times more likely to develop hearing loss compared to non-NICU infants. We propose that comparing infants with failed hearing screens at discharge, repeated failed screens and documented hearing loss will identify common risk factors that lead to confirmed hearing loss.

Methods: In this retrospective chart review, medical records were reviewed for demographic, clinical and laboratory data of infants admitted to the Albany Medical Center NICU from 1/1/12-5/31/13.

Results: During the study time period, 871 infants were screened by automated auditory brainstem response (AABR). The great majority of infants, 95.5% passed their AABR prior to NICU discharge. Comparisons were done of infants in the passed hearing screen (PH), failed hearing screen (FS) and hearing loss (HL) groups. No differences were noted in gestational age, birth weight, phototherapy or gentamicin use. Presence of a dysmorphic syndrome was strongly associated with both the FS and HL groups. A lower five minute Apgar score, use of inotropes and high frequency ventilation (HFV) were more common in the FS but not the HL group.
Conclusions: Our study shows that infants with a dysmorphic syndrome are more likely to have a failed AABR and confirmed hearing loss. Repeated failed AABR but subsequent passing after a time interval may be a form of transient hearing loss. This could be reassuring when treatments such as the use of inotropes and HFV are noted to be more common in the FS group but not the HL group of infants.

47. An Evaluation of the Schenectady Asthma Support Collaborative (SASC): A Coordinated Community-Based Approach to Reducing the Burden of Asthma
Rau-Murthy R, Pratt D

Background: Management of asthma is a stubborn challenge at the local, state and national level. This is increasingly being addressed with a collaborative model of asthma care. The Schenectady Asthma Support Collaborative (SASC) was developed in 2014 to make improvements at the local level. SASC brought together three existing asthma management programs: care managers, respiratory therapists, and home visit nurses. Sixty-eight asthmatics consented to the protocol at time of emergency department (ED) visit.

Hypothesis: Continuity of care for asthmatics presenting to the ED may be compromised by low socioeconomic status, inadequate insurance, high co-morbidity burden, or recidivism to the ED.

Methods: In 2015, the program was evaluated by an attrition analysis, and qualitative interviews of key stakeholders.

Attrition Analysis: Non-parametric t-tests were run comparing those who participated in all aspects of the program to those who only received care management. Sub analyses were conducted on the adult and pediatric populations. Qualitative Interviews: Ten semi-structured half hour qualitative interviews were conducted with stakeholders in SASC, and coded based on the principles of partnership and Community Based Participatory Research.

Results: Over half of all participants did not engage with SASC past initial consent. A comorbidity increased likelihood of completing the program (p=0.004). Those diagnosed with asthma as a child were less likely to participate (p=2E-4). Individuals from neighborhoods with more asthma-related ED visits were less likely to participate (p=0.023). SASC staff highlighted the importance of open communication, a shared database, and check-ins to address feasibility of additional work.
Conclusions: SASC faced significant participant attrition; a separate focus may be needed for individuals who have developed a fatalistic approach to their disease. Understanding individuals disengaged from health programming may help others adjust their services. Effective communication; building capacity; and readiness at the hospital, team member, and community levels are crucial to programmatic success.

48. Effects of Cucurbitacin B, D, & I on Adult T-Cell Leukemia/Lymphoma Cell Lines
Reddy S, He C, Yasuhiro Y

Introduction: Adult T-cell leukemia/lymphoma (ATLL) is a mature malignancy of T lymphocytes. It occurs worldwide, with a strong geographic predilection for Asian populations, especially in Japan. T-cell leukemia has a very poor prognosis, even with intensive chemotherapy, indicating the need for development of new drugs to treat the disease. Previous research has published results on the anti-cancer effects of Cucurbitacin, a class of tetracyclic triterpenoids from plant families (i.e. Cucurbitaceae and Cruciferae). Currently there is no standard treatment for ATLL which drives our research to focus on determining the efficacy of Cucurbitacins B, D, and I on human ATLL cell lines.

Methods: Four ATLL cell lines, Hut-102, Jurkat, MT-1, and MT-4-using the Cell Titer-Glo Luminescent Cell Viability Assay System, were plated and incubated with various Cucurbitacin derivatives--CuB, CuD, Cul, Cul + NAC and measured for fluorescence as an indication of cell viability. N-acetyl-cysteine (NAC) is an acetylated cysteine residue that optimizes the protective ability of the cell to oxidative stress. Thus, oxidative Stress miRNA Reporter Vector Set was used to measure levels of oxidative stress via reactive oxygen species.

Results: In this study, cucurbitacin I (Cul) was found to inhibit proliferation of infected cells. One example of these results is in the MT-1 cell line; the original cell proliferation showed a cell count of 2,038,434 cells and once Cul was administered, the cell count dropped to 1,755,654 cells. Cul + NAC (ROS scavenger molecule) had higher cell viability than the Cul alone (1,954,670) which we believe occurred due to NAC’s ability to prevent apoptosis and promote cell survival by activating extracellular signal-regulated kinase pathways (optimizing the protective ability of the cell to oxidative stress as mentioned above). Therefore it blocked Cul’s mechanism
of inducing oxidative stress to kill the cancer cells. Cell proliferation was successfully inhibited by Cucurbitacin B, D, and I.

Conclusion: Due to the various cell assays and viability experiments, we conclude that Cucurbitacin B, D, and I are successful agents in killing malignant T lymphocytes in ATLL. By measuring the effects of Cucurbitacin I combined with NAC, we also determined that the most likely mechanism of action of these drugs is to kill the cells via reactive oxidation species and apoptosis. With this strong data supporting the efficacy of Cucurbitacin, further translational studies are required to research the effects of Cucurbitacin in mice populations and eventually in human populations suffering from ATLL.

49. Assessing Sex-Based Cardiovascular Guidelines: Knowledge and Attitudes
Ruderman R, Rademaker A, Woodruff T

Hypothesis: While sex differences in cardiovascular care have become more widely recognized in the last decade, limited knowledge exists on physician awareness, attitudes, and knowledge of these differences by specialty. This study hypothesized that awareness, attitudes, and knowledge of these guidelines varies between specialties (internists, obstetricians-gynecologists, and cardiologists) and that different types of physicians feel more confident in their ability to address cardiovascular risk in both women and men.

Methods: An online survey was sent to 460 internists, obstetricians-gynecologists, and cardiologists with privileges at Northwestern Memorial Hospital. The survey was adopted from the American Heart Association, and assesses awareness of, attitudes towards, and knowledge of guidelines and differences in preventive cardiovascular care in women versus men. Additional questions were added to assess more specifically differences between responses towards female and male patients by specialty.

Results: Preliminary results found that awareness of cardiovascular preventive care guidelines and self-reported effectiveness in providing preventive cardiovascular care for both male and female patients was highest among cardiologists (p ≤.05). Additionally, all physicians felt more confident in treating female versus male patients, and none believed that clinical judgment is more effective than guidelines in improving health outcomes.
Conclusions: This nested study was intended to generate hypotheses and future targets for interventions. The initial results suggest that the additional training undertaken by cardiologists may be critical to their ability to recognize guidelines and may instill confidence in their CVD preventive care practice. Additionally, the presence of multiple guidelines with differing recommendations for men and women may contribute to a sense of confusion that would be ameliorated with clearer sex-based guidelines or short term educational interventions on how to approach male and female patients with regard to preventive cardiovascular care.

50. Breastfeeding Knowledge, Attitudes and Practices in New Delhi, India
Shankar P

Hypothesis: According to the World Health Organization, optimal breastfeeding is so critical that it could save about 800,000 under 5 child lives every year. In India, 28% of infants suffer from low birthweight, and 42.5% of infants and children are underweight. In such a context, breastfeeding can have important implications. Even so, nationally, approximately only 56.1% of women exclusively breastfeed their child when he/she is under 6 months of age. (1) Given the importance of breastfeeding in the overall health of children, this study seeks to assess knowledge, attitudes, and practices related to breastfeeding amongst women in one slum dwelling community of Dabri, New Delhi. The researcher hypothesizes that women in this community will report significant cultural and work-related barriers and will have inaccurate or inadequate knowledge with relation to feeding.

Methods: This study utilized cross-sectional interviews to examine the knowledge, attitudes and breastfeeding practices amongst 170 mothers from Dabri, New Delhi who had children ages 0 to 6 years old.

Results: Among the respondents, 72.6% of women defined exclusive breastfeeding as feeding without supplementation for 6 months and 78% used breastmilk as the main source of nutrition for their child till 6 months of age. Even so, only 30% of women breastfed their child within the first hour of his/her life, and 47% of women breastfed their child for less than 2 years. 23% of women introduced supplemental food into their child’s diet prior to six months of age. Additionally, 47.6% of women began breastfeeding after two hours or more of their child's birth. 18% of women received their information from media sources, while 30% received information from health professionals.
Conclusions: In Dabri, New Delhi, significant progress has been made with regards to breastfeeding. The general uptake of breastfeeding and knowledge of the definition of exclusive breastfeeding was higher than anticipated in this locality. In contrast, discrepancies existed with regards to when women initiated their first feeds, how long they breastfed for, and whether or not they introduced supplemental food into their child's diet prior to six months of age. Media outlets serve as major sources of information for women. In order to standardize breastfeeding practices, more detailed and accurate information must be shared with women through media outlets and healthcare personnel.


51. Role of Kv1.5 Channels in Regulation of Tumor Vasculature and Metastasis
Sharma P, Amin V, Cappelli HC, Adapala RK, Ohanyan V, Yin L, Chilian WM, Thodeti CK

Hypothesis: Kv1.5 channels are important in regulating the properties of blood vessels, such as vascular tone, blood flow, and permeability. Previous studies have shown that Kv1.5 channels modulate a direct relationship between blood flow and metabolic need in the heart. To determine if this relationship is prevalent in the solid tumor, we hypothesize that tumors grown in the absence of Kv1.5 channels (Kv1.5 knockout mice) will result in decreased tumor volume due to decreased blood flow and nutrient supply.

Methods: Wild-type (WT) and Kv1.5 knockout (Kv1.5 KO) mice received subcutaneous injections of mouse Lewis Lung Carcinoma (LLC) cells (2 x 10^6) at the flank on both sides. Once tumors became palpable (Day 7), tumor volumes were measured every 3-4 days using a Vernier caliper, until Day 21. Immunohistochemistry was performed in the tumors to analyze blood vessels (CD31) and pericytes (NG2), and lung tissues were stained for Hemotoxylin and Eosin to visualize metastasis.

Results: We found no significant difference in the tumor volume or tumor weight between WT and Kv1.5 KO mice. However, when we analyzed the tumor vessels, we found a decrease in pericyte coverage among the Kv1.5 KO tumors, suggesting a lack of tumor vessel integrity and increased vascular leakage. Macroscopic
observations of the lungs provided evidence of metastatic growth on the lungs isolated from the Kv1.5 KO mice, which was not visibly present in the WT lungs. Importantly, H&E staining of the lung tissue confirmed the presence of metastatic tumor growth among the Kv1.5 KO mice.

Conclusions: Our results provide evidence that Kv1.5 channels are dispensable for tumor growth, but are required for the maintenance of tumor vascular integrity. Therefore, we believe that Kv1.5 channels may have a protective role in inhibiting tumor metastasis to the lung.

52. Variation in Type of Contraceptive Technology Received Among Women Enrolled in Medicaid Versus Private Insurance Policies

Singer M, Tanenbaum J, Gangestad A

Hypothesis: Does enrollment in Medicaid versus private insurance coverage significantly influence type of contraceptive technology received?

Methods: After obtaining IRB approval, we surveyed 75 English-speaking women aged 18 and older who were seen at University Hospitals MacDonald Women’s Hospital in Cleveland, Ohio for a women’s health-related appointment between May 2015 and July 2015. Patient insurance status was documented and insurance categories were grouped into private and Medicaid providers. Multinomial logistic regression was performed to assess the effect of primary payer on contraceptive type received in office.

Results: Of the 75 patients surveyed, 67 received some form of contraception, of which 43 (64.2%) of the patients were enrolled in Medicaid insurance and 24 (36.8%) reported private insurance coverage. Relative to privately insured patients, patients with Medicaid insurance had significantly greater odds of receiving the medroxyprogesterone acetate shot (OR: 14.7, 95% CI 2.4 – 88.2, p = 0.003) or the ethinyl estradiol/etonogestrel ring (OR: 11.0, 95% CI 1.6 – 75.5, p = 0.015) than of receiving an IUD. 27 women received the IUD in office, of which 18 (66.6%) had Medicaid insurance and 9 (33.3%) had private insurance coverage.

Conclusions: Despite the Affordable Care Act’s provision for universal contraception coverage without cost sharing, women enrolled in Medicaid were much more likely to receive the medroxyprogesterone acetate shot or the ethinyl estradiol/etonogestrel ring over an IUD. This suggests that when cost considerations are eliminated, other
factors create discrepancies in the type of contraception received between Medicaid and privately insured women. This is a pilot study meant to uncover trends in birth control received after traditionally cost-prohibitive contraceptive technologies become affordable to all insured women without cost sharing. This observed disparity between Medicaid and privately insured patients warrants further study.

53. Acute Leukemia Patient Tolerance of Restrictive Hemoglobin Transfusion Threshold
Williams K, Hand W, DeZern A

Hypothesis: Non-oncologic studies suggest restrictive red cell transfusions have the same or decreased mortality as liberal strategies. It is unknown if this is safe or feasible in oncology populations as these patients are on cytotoxic therapy. This study investigated safety and feasibility of a restrictive transfusion threshold for leukemia. We hypothesized that a restrictive strategy would be safe and feasible compared to the liberal standard.

Methods: This prospective randomized feasibility study enrolled 90 adult patients undergoing intensive induction therapy for acute leukemia at Johns Hopkins. Sixty patients were randomized to a hemoglobin threshold trigger of 7.0 g/dL (restrictive) while 30 patients received transfusions at 8.0 g/dL (liberal). The last 30 patients to enroll were administered Functional Assessment of Cancer Therapy Anemia (FACT-An) and State-Trait Anxiety Inventory (STAI-6) surveys. Outcomes evaluated included total transfusions, crossovers, FACT-An score, STAI-6 score, and fatigue scores. T-tests and Wilcox rank-sum tests were used for comparison.

Results: Overall, the proportion of patients completing the study was similar in both arms. Patient crossover was also similar at 12% (restrictive) and 7% (liberal), p=0.44. There was a significant difference in units transfused (8 in restrictive arm and 10 in liberal arm, p=0.01). There was no difference in mean total FACT-An score (restrictive 123.7 vs. liberal 121.3, p=0.85) or in mean total STAI-6 score (restrictive 11.4 vs. liberal 11.8, p=0.80). There was no significant difference in median fatigue scale score at 4.8 (restrictive) and 4.5 (liberal), p=0.32.

Conclusions: These results suggest that acute leukemia patients will tolerate the restrictive transfusion threshold by fatigue and anxiety metrics with acceptable crossover. The restrictive strategy also yielded reduced RBC transfusions than the
liberal standard. A larger multi-institutional trial to further investigate the efficacy of a restrictive transfusion threshold in this population should be considered.

55. Perceptions of Genomic Testing in Minority Patients Who Received Genetic Counseling
Zelivianskaia A, Vande Wydeven K, Hoskins K

The U.S. death rate from breast cancer has greatly declined over the past twenty years as a result of improvements in treatment and efforts at earlier detection. However, the mortality rate for African-American women has not improved. Numerous studies have investigated the causes of this disparity and one contributing factor could be differences in utilization of new technologies. Genetic testing (GT) is a powerful clinical tool that is currently underutilized by racial/ethnic minority individuals. There are several reasons for this, including lack of knowledge, differences in perceptions of risks and benefits, and socioeconomic factors. Limited studies have demonstrated that African Americans and Hispanics have more negative attitudes towards GT and have greater distrust of the medical system compared to non-Hispanic whites. The emerging technology of whole genome sequencing (WGS) also has the potential to substantially improve health outcomes, but there is concern that individuals from minority communities may under-utilize this technology when it becomes widely available, thereby exacerbating existing health disparities.

We hypothesized that minority patients with exposure to currently available GT as a result of attending a genetic counseling session would have more positive attitudes towards WGS. We administered a brief description of WGS followed by a three-part survey to assess knowledge and attitudes towards GT and WGS, and perceived barriers to testing in minority women who previously attended a genetic counseling session for breast cancer risk. Participants had favorable attitudes toward WGS: 61% were willing to undergo WGS and 84% desired to know all genetic information discovered through WGS that a doctor considered relevant to their health. Furthermore, the level of genetic knowledge was high. These findings are in contrast to prior studies, and suggest that genetic education and counseling is an effective tool to reduce underutilization of emerging genomic technologies in minority communities.
Effects of endothelial colony forming cell (ECFC) spheroids on vascular formation and post-transplantation ECFC survival
Zhang PA, Kim H, Yoder MC

Introduction: Blood vessel repair is an important challenge to overcome when treating patients with vascular disease, including those associated with neonatal prematurity, like retinopathy of prematurity and necrotizing enterocolitis. Recently, ECFCs have been identified as a population of progenitor endothelial cells that demonstrate remarkable vascular regenerative potential. In single-cell suspension (SCS) 3D collagen matrix gels, ECFCs follow a distinct pattern of migration: first forming nodal clusters, then sprouting tubular structures. However, ECFCs grown in these conditions show low survival.

Hypothesis: We hypothesize that compared to the SCS standard, preformed ECFC spheroids would enhance ECFC survival in collagen gels, elevate vessel quantity, and form vessels earlier.

Methods: Primary ECFCs were isolated from human umbilical cord blood. Spheroids were formed by the hanging droplets method. Spheroids were transferred into 3D collagen gels and assessed for cell viability, proliferation, and in vitro vasculogenesis at Days 0, 1, 2, and 3. ECFC survival and proliferation were measured using flow cytometry. To study in vivo vessel formation, collagen gels containing ECFC spheroids were transplanted into NOD/SCID mice. After 20 days, Ulex europaeus agglutinin I was injected into the mouse tail vein to label perfused human vessels. Gels were extracted for vascular analysis by confocal imaging.

Results: Cell survival and proliferation were significantly decreased in the ECFC spheroid gels when compared with the SCS standard. However, the surviving ECFCs in spheroids formed earlier endothelial sprouts and lumenized structures (Day 0-1) than the SCS standard (Day 1-2). ECFC spheroid gels formed dense and organized networks of perfused human vessels in vivo after implantation into NOD/SCID mice. The overall pattern of blood vessel formation was more homogenous in gels containing ECFC spheroids compared to control gels.

Conclusions: Although in vitro survival of ECFC spheroids is lower than SCS standard, the spheroid method may improve in vivo vessel formation.
57. Ethical concerns regarding provider-initiated HIV testing and counseling for pregnant women in Mysore, India

Background: In an effort to increase the uptake of HIV testing, the WHO/UNAIDS recommended provider-initiated HIV testing and counseling in 2007. Under the provider-initiated approach, healthcare providers recommend HIV testing to patients and the test is performed unless a patient objects. Following this guideline, the Indian government enacted routine HIV testing for all pregnant women receiving antenatal care (ANC). However, the National AIDS Control Organization (NACO) of India maintained that patients have the right to informed consent and confidentiality.

Methods: A qualitative study was used to juxtapose the experiences of HIV negative women who had received HIV testing and counseling at ANC facilities to that of the healthcare providers providing the services, in Mysore, India. Six focus group discussions (FGD) were conducted (4 HIV negative women and 2 counselors), in addition to 4 in-depth interviews (IDI) with healthcare providers (2 nurses and 2 doctors).

Results: Healthcare providers described HIV testing as “mandatory” and did not inform patients of their right to opt-out. This experience was shared by the HIV negative women interviewed. While counselors stated that they provided post-test counseling to HIV negative women, few of the women interviewed had attended them. This was due either to miscommunications or the women’s lack of interest. The majority of counselors stated that they respected patient confidentiality. However, the HIV negative women reported that normal test results were revealed in front of everyone during group counseling, while abnormal test results were reported directly to the women’s husbands.

Conclusion: Some healthcare providers are not properly informing pregnant women receiving ANC of their right to opt-out of HIV testing. Although post-test counseling is provided to HIV negative women, few are taking advantage of the sessions. There is also an inconsistency in the manner in which healthcare providers are maintaining patient confidentiality.

Case Study:
E5. Retinal complications of genetic thrombophilia in a young patient
Ahmad M, Leisy H, Smith RT

Case: A 53-year old hispanic man presented with acutely decreased vision in his left eye. He reported a history of untreated mild hypertension and branch retinal vein occlusion (BRVO) of the right eye 20 years ago. Family history was significant for central retinal vein occlusion (CRVO) in his brother occurring in his early 50’s. Ophthalmic exam showed a best corrected visual acuity of 20/20+2 in the right eye and 20/400 in the left eye. Fundus exam of the right eye was consistent with an old BRVO; the left eye showed macular edema with peripheral hemorrhages and hard exudates. Cross-sectional imaging of the left eye showed severe macular edema with sub-retinal fluid. The patient was diagnosed with new CRVO of the left eye. He opted for treatment with topical ketorolac and prednisolone drops in favor of intravitreal anti-VEGF injection. Thrombophilia workup revealed a decreased thrombin time and a heterozygous mutation in the prothrombin 20210A gene. He was placed on aspirin 81mg and anti-hypertensives. Six months later, he developed acute worsening of vision in the left eye. Fluorescein angiography revealed retinal ischemia and neovascularization with active leakage on the optic disc. He was treated with retinal laser photocoagulation with the aim of decreasing VEGF production from the ischemic retina and reducing subsequent neovascularization.

Conclusions: CRVO is a multifactorial disease associated with systemic vascular dysfunction and genetic factors. Heterozygous prothrombin 20210 gene mutation, also called factor II mutation, affects approximately 2% of the general population and occurs with increased frequency in patients with a history of retinal vein occlusion.

Clinical Significance: Thrombophilia should be carefully assessed in patients with signs of retinal vein occlusion who are less than 65 years old or those with a family history of thrombosis.

E6. Preventing Intimate Partner Violence Among Middle Eastern Refugee Women: Breaking the Cycle
Alawa N, Pryor G, Maier A, Ivanov S, Kravietz A, Manasa M, Alvarez A

Introduction: The prevalence of intimate partner violence (IPV)- physical, sexual or psychological harm by a spouse, among women in refugee camps- is a growing concern for public health officials and human rights activists. This issue is particularly
prevalent among Middle Eastern refugee populations. A recent report released by UNHCR shows that the number of refugees displaced by current war and conflict is close to 60 million, surpassing the refugee crisis of World War II. Last year, the UNHCR spent $1.6 billion on an estimated 4.3 million Middle-Eastern refugees. IPV is deleterious to the health and well-being of women, particularly in their child-bearing years. Nonetheless, there are few interventions that prevent and treat victims of this global problem.

Methods: 166 publications were identified including the key terms “Intimate Partner Violence,” “Screening,” and “Intervention.” Sixteen publications documented successful intervention or screening designed to prevent IPV or the effect of IPV on women’s health. These included a broad-spectrum awareness campaign, validated IPV screening methods, creation of safe spaces, and linkage to specialized care programs.

Conclusions: By combining evidence-based interventions, a multi-component prevention program consisting of a broad-spectrum awareness campaign, validated IPV screening methods, creation of safe spaces, and linkage to specialized care programs will facilitate identification of survivors and improve health outcomes for women experiencing IPV. This strategy addresses risk factors of refugee women to IPV, integrating short-term care with a long-term change in ideology through which increased awareness is fostered. Instituting a composite intervention of evidence-based programs will facilitate better reporting of and improve health outcomes for women experiencing IPV.

E7. The importance of reducing the diagnostic error: lessons learned in a case of a rare disease
Gueorguieva I, Mehta PH

Case: A 29-year-old Caucasian female presented with a chief complaint of abdominal pain and bloody diarrhea for the previous 5 days. Vital signs were unremarkable with T 98.2F, Pulse 84 BPM, and BP 123/74. Physical exam was significant for voluntary guarding of the abdomen. She had significant leukocytosis with WBC of 30.3 K/uL. Abdominal CT showed colitis. Patient was admitted with diagnosis of acute gastroenteritis and patient responded well once antibiotics were administered. Discharge planning had been initiated when a vigilant medical resident ordered follow-up blood work. Labs revealed a precipitous drop in platelets from 166 to 24 K/uL and an elevation in creatinine to 1.91mg/dL. Now with suspicion of Hemolytic Uremic
Syndrome (HUS), she was transferred to the ICU and received plasmapheresis. She went on to improve and made a full recovery.

Conclusion: Atypical form of HUS is a rare disease. Incidence in the US is estimated at 1/500,000 people per year representing less than 5% of all cases of HUS. In the described case, a diagnostic error was overcome that may have otherwise led to significant morbidity and mortality. In 2015, the Institute of Medicine published a series of recommendations on “Improving Diagnosis in Health Care” focusing on diagnostic errors and many other elements on enhancing collaboration between physicians, researchers, patients and their families.

Clinical Significance: Diagnostic errors are costly, underappreciated, and hard to measure. Diagnostic errors by physicians occur for a variety of reasons, among which include biases such as anchoring heuristics. It is of vital importance to be aware of such errors and ways to improve. Some diagnostic errors may be prevented by systems to mitigate the effect of these biases and provide physicians with objective information to assist with decision-making.

E8. Simple Pharmacoeconomic Analyses in Onychomycosis Treatment
Saed S, Mostow E

Case: A 52 year old male presented to the clinic for a routine exam. He was otherwise healthy but had persistent onychomycosis of the right great toenail which has failed treatment of oral terbinafine after twelve weeks. A newer topical drug, efinaconazole 10%, was suggested. Insurance denied the medication and the cash price quoted was approximately $550 (4 mL bottle). The patient returned in search of cheaper, alternative treatments. One literature search yielded a case series using Vicks VapoRub and the treatment plan was suggested to the patient.

Conclusion: The patient was eager to try the alternative treatment. After 14 weeks of use, he reported improving appearance of the toenail and was pleased with the results, although his clearance may have been from the initial oral terbinafine.

Clinical significance: Onychomycosis is a fungal infection of the nail. Although sometimes considered a cosmetic problem, it can limit mobility and cause trauma. Understanding clearance, mycologic cure, costs, and risks of treatment are useful for all clinicians. We created a table to assist primary care and specialist physicians to help guide treatment. For example, ciclopirox lacquer is fairly ineffective, with clinical cure rates of 6-9%, and costing about $240 for 48 week treatment. Oral antifungal
treatment such as terbinafine, has a clinical cure rate of 60-70%, costing about $48 for one year's continuous treatment course. However, adverse effects with oral antifungal medication can be problematic. Efinconazole 10% is a topical antifungal solution that is well tolerated with no systemic adverse effects. After 48 weeks of treatment, the complete cure rate was 18.5% with a cash price of approximately $4,480. Vicks VapoRub may be a cost effective alternative treatment for onychomycosis. One year treatment course costs about $30, with 27.8% of patients having a negative nail culture in a 48 week study.

**E9. Blood Without a Source: A Case of Pulmonary Endometriosis Presenting as Recurrent Hemothoraces**
Schultz A, Lang T

We present the case of a 36-year-old nulliparous Haitian woman with suspected pulmonary endometriosis. Her past medical history is significant for uterine fibroids, dysmenorrhea, menorrhagia and infertility. She has had recurrent right pleural effusions, both non-catamenial and catamenial in nature. Her first two hospital admissions included three thoracocentesis, a VATS procedure and diagnostic laparoscopy with hysteroscopy and D&C. Analysis of all pleural fluid samples revealed mostly red blood cells, without evidence of malignancy, acid-fast bacilli, fungus or gram-staining organisms. Thoracentesis and VATS were unsuccessful in treating or identifying a cause for her hemothoraces. Because of her desire to become pregnant, diagnostic laparoscopy with hysteroscopy and D&C were performed and revealed retrograde blood flow and an immobile uterus secondary to a frozen pelvis, inhibiting access to her peritoneum for biopsy. Therefore, a definite diagnosis of endometriosis could not be established. After two discharges she presented again with a recurrent right pleural effusion. On her third admission, she underwent two more thoracentesis and pleuridesis, with no change in the analysis of the fluid or tissue. She was discharged home three days status-post pleuridesis in stable condition, without recurrence of a pleural effusion. Before discharge, she was started on monthly depot-Lupron injections in the hopes that this plus the pleuridesis will alleviate her hemothoraces. We hope that the addition of depot-Lupron will shed diagnostic light on the etiology of her recurrent pleural effusions and prove that a bilateral salpingo-oophorectomy would be of merit if she undergoes a hysterectomy in the future. This report represents a unique cause of probable thoracic endometriosis syndrome (TES), with catamenial hemothoraces observed in only 14% of cases of TES. Through this report we hope to increase the discussion on extra-pelvic endometriosis in order to better identify and treat women who are suffering from this poorly understood illness.
58. A Sore Throat Can Cause a Broken Heart: Acute Rheumatic Fever
Annan F, Hunter M, Krause K, Rohr-Kirchgraber T

Acute rheumatic fever (ARF) is a serious complication of tonsillopharyngitis resulting from infection by group A Streptococcus. The incidence of ARF remains high in developing countries, but is a rare complication in developed countries due to effective antibiotic treatment of group A Streptococcus infections. For this young patient, at the age of 9, she had to assist her parents in navigating the health care system while presenting with acute heart failure.

A 9-year-old Hispanic female presented to the ED with worsening cough, shortness of breath, and decreased exercise activity. She had had a sore throat and what seemed to have been an upper respiratory infection 3-4 months prior. She had not received any antibiotics at that time and seemed to have recovered. An echocardiogram revealed severe mitral regurgitation with pericardial effusion and the patient was diagnosed with acute rheumatic fever.

Streptococcal pharyngitis is the only streptococcal infection associated with ARF, which is one of the leading causes of cardiovascular death worldwide. Rare in a developed nation with access to resources such as antibiotic treatment and improved hygienic standards, ARF is nevertheless a serious, life-threatening condition. Although the patient was bilingual, both parents were Spanish-speaking and not completely familiar with the healthcare system. Ultimately, these barriers may have contributed to the patient’s development of ARF as a delayed, nonsuppurative sequela of infection with group A Streptococcus. Navigating the healthcare system while facing communication and cultural barriers necessitated the young patient to assume a lead role in her medical care.

The reported case of ARF was most likely due to an untreated streptococcal infection caused by barriers in navigating the healthcare system.

59. Why Diet History matters! Vitamin D Deficiency
Asrar A, Azar M, Rohr-Kirchgraber T

A 24 hour diet history gives the provider a brief insight into possible nutritional deficiencies and may save unnecessary and expensive tests.

A previously healthy 18-year-old girl presented for her annual health exam and complained of dull aching hand pain. Her dietary history noted mostly processed food with little dairy products or vegetables and fruits. The patient was overweight
and was diagnosed and treated for metabolic syndrome. She was found to be severely deficient in vitamin D: < 4.2 ng/mL, and was thus started on high dose vitamin D replacement therapy.

The patient’s “dull aching hand pain” can be explained by decreases in calcium phosphate in the bone from vitamin D deficiency partly a result of poor diet and obesity. Lack of calcium phosphate results in poorly mineralized bone, which still receives collagen from osteoblasts, which covers its endosteal and periosteal surfaces. The bone hydrates and expands, and the resulting pressure placed on sensory fibers in the periosteum causes the dull aching pain.

The activated form of vitamin D has many important metabolic functions, including calcium homeostasis. Poor calcium metabolism in vitamin D deficiency leads to poor bone health and can result in diseases such as osteopenia and osteoporosis. Another possible clinical manifestation is muscle weakness and aches. Vitamin D deficiency also places patients at an increased risk for chronic conditions including cancers, autoimmune disease, diabetes, hypertension, and heart disease. When treating patients with musculoskeletal pain, physicians should check vitamin D levels, looking for a deficiency. Furthermore, a diet history can provide insight if a nutritional deficiency is the cause, and accordingly, patients should be advised on the importance of increasing sun exposure and consuming vitamin-D-rich and fortified foods.

### 60. Too Much of a Good Thing? Two cases of excessive exercise in teenagers
Austgen M, Lee A, Rohr-Kirchgraber T

Two teenage girls presented to an outpatient eating disorder clinic with excessive exercise tendencies. Patient A was a 13 year-old female with a past medical history of obsessive compulsive disorder and anxiety presenting with a weight <5th% for her age. Her mother reported that despite limiting her daily physical activities, the patient was caught exercising at school and in the middle of the night. Physical exam revealed orthostasis, bradycardia, lanugo pattern of hair growth and loss of menarche. Patient B was a previously healthy 15 year-old female that presented with a 14-pound weight loss in one month. After beginning cross-country training, she was reported to very quickly build up to running 30 miles per week with a morning exercise ritual. She limited her intake to the smallest amount of calories possible.
DSM V recognizes excessive exercise as a purging behavior associated with anorexia nervosa (AN). Nearly 30% of patients with AN present with increased physical activity. Questions regarding diet history are important as are those related to the amount and type of exercise. Eating disorders are ten times more likely to affect women than men and exercise purge behaviors should also be included for screening.

In a society in which nearly one third of children and adolescents are considered to be overweight or obese, physicians are trained to applaud exercise as a positive behavior. However, it is important for clinicians to be able to identify the opposite extreme, as well. Increases in physical activity often preclude the onset of eating disorders and could be an important identifiable risk factor. Current research suggests that patients with this subset of the disease exhibit unique characteristics and could benefit from alternative treatment methods. Therefore, it is increasingly important to maintain a high level of clinical suspicion to not miss this potentially detrimental diagnosis.

61. Controversy Surrounding Routine Mammography
Bakare A, Okonokhua L, Patterson K, Rohr-Kirchgraber T

A 56-year-old African American woman with a long-standing history of obesity and diabetes mellitus type 2 underwent yearly routine mammography. Routine mammograms starting in 1998 showed fatty and fibroglandular tissue with no suspicious findings. In 2004, screening mammogram revealed a 9 mm mass in the upper outer quadrant of the left breast. This mass did not reveal any microcalcifications or areas of architectural distortion, so no additional investigation was warranted at that particular time. In 2015 screening mammogram showed a 4-millimeter group of amorphous calcifications in the posterior third upper outer quadrant of the left breast. The calcifications warranted a stereotactic biopsy that revealed fibroadenoma with calcifications. Biopsy resulted in a 15-centimeter hematoma with resultant pain. Hematoma resolved without further intervention.

Although screening mammography has been proven to reduce mortality from breast cancer, over the last few decades the guidelines have changed. Questions pertaining to the effectiveness and benefit from early preventative screening have been raised, stemming from epidemiological data that has shown an increased incidence of false positive tests. These incidents have led to anxiety and biopsy complications in asymptomatic women who will never develop clinical symptoms related to this cancer.
This case exemplifies a scenario in which a patient underwent biopsy for developing calcifications found on a screening mammogram in an asymptomatic woman. Biopsy showed fibroadenoma, which is not a precursor to breast cancer and thus poses no threat to the patient’s life. Screening mammography requires balancing the risks and benefits in asymptomatic women. Although benign results were found in this case, the patient experienced anxiety from the abnormal screening mammogram and biopsy recommendation. The concern about a possible malignancy causes many women similar emotional distress. The procedure was complicated by a large hematoma which caused post-procedure pain, which is a known risk.

62. Aromatase inhibitor musculoskeletal syndrome: An underrecognized side effect of Aromatase Inhibitor therapy
Banschbach K, Romine J, Jacobs M

A 71 year old female with well controlled inflammatory osteoarthritis and grade 2 estrogen receptor positive invasive ductal breast carcinoma presented with new pain and swelling of her left wrist and triggering of her right 1st and 3rd digits. Anastrozole was started 14 months earlier, with symptoms beginning over the last 6 months. She denied morning stiffness, fevers, oral or nasal ulcers, rashes, and photosensitivity. On physical exam, she had triggering of the first and third fingers of her right hand with tendon thickening and tenderness. Her left hand showed tenderness of the extensor pollicus longus and brevis muscles with a positive Finkelstein, consistent with a De Quervain’s tenosynovitis. Grip was reduced bilaterally. The patient was diagnosed with aromatase inhibitor induced musculoskeletal syndrome (AIMSS) and referred to occupational therapy for splinting and a hand surgeon for possible surgery. Oncology elected to hold her anastrozole for 6 weeks.

Aromatase inhibitors (AIs) have surpassed tamoxifen as the preferred treatment regimen for post-menopausal women with estrogen positive breast cancer. However, an emerging and limiting complication of AIs is the development of AIMSS. After initiating treatment, over half of patients report persistent musculoskeletal symptoms, ranging from generalized arthralgias to focal tenosynovitis. Almost 70% of reported symptoms localize to the hands and wrist, most commonly causing tenosynovitis such as De Quervain’s, carpal tunnel, and tenderness of hand tendons. AIMSS causes up to 20% of patients to discontinue treatment, illustrating the significant impact it has on patient outcomes and need for consideration before treatment initiation. While no definitive associations have been established, there are many hypotheses on why these symptoms accompany AIs including: negative
effects of estrogen deprivation on tendons, hypersensitization of patients to pain due to removal of nociceptive effects of estrogen, and a direct increase in tendon synovial fluid by AIs.

63. Adult Presentation of Henoch-Schonlein Purpura
Bayudan A, Sider D

Henoch-Schonlein Purpura (HSP), also known as Immunoglobulin A Vasculitis is an immune mediated systemic vasculitis involving IgA complex deposition within the affected organs. Criterion classifying HSP from other vasculitides include signs of palpable purpura without thrombocytopenia and coagulopathy accompanied by either acute arthritis/arthralgia, abdominal pain, and/or renal disease.

Here we present a 36-year-old male with a significant past medical history of lower extremity neuropathy secondary to Charcot-Marie-Tooth, Type 2 Diabetes Mellitus, and a chronic right foot ulcer who came to the Emergency Department with a diffuse rash and worsening of his right foot ulcer. He was seen previously in the ED and discharged with Ciprofloxacin prior to this hospital visit. Shortly after, he developed a non-blanching, palpable petechial rash initially on his bilateral lower extremities. This was accompanied by arthralgias and burning pain. Within a week the rash had spread to his trunk, back, bilateral upper extremities, including his palms, and buttocks. Skin biopsies were performed on his lower extremities, which showed a leukocytoclastic vasculitis and demonstrated vascular immunofluorescence for complement C3 and C4, and IgA immunoglobulin, which confirmed the diagnosis of Henoch-Schonlein Purpura. Renal function testing was performed and showed no renal involvement at this time. Treatment for the HSP-associated pain consisted of rest, ibuprofen, and a glucocorticoid taper for 15 days for the HSP-associated abdominal pain with moderate relief.

This case presents classic symptomatology of Henoch-Schonlein Purpura, but in an adult with multiple comorbidities and a likely etiology of ciprofloxacin. Although HSP in adults is not as common, it was likely a systemic drug reaction. Recognition and early treatment of this condition is imperative for preventing renal disease, as other symptoms of the disease are self-limited however they can contribute to prolonged morbidity and the cost of care.
Case: Three year-old female child presented with several days of wheezing and increased work of breathing. Past medical history significant for several outpatient health visits for sinusitis and mild respiratory symptoms. Patient’s symptoms did not improve with albuterol therapy, so imaging was ordered. Chest radiograph and CT revealed a cystic mass in the left anterior lung field consistent with a Morgagni diaphragmatic hernia. Patient was scheduled for surgical reduction of hernia once respiratory symptoms resolved. Patient tolerated surgical reduction well with no complications.

Morgagni hernia (MH) is a rare congenital anterior diaphragmatic defect where abdominal contents enter into the thorax. Newborns usually present with respiratory and abdominal distress and are diagnosed through imaging, such as CT scans, abdominal radiographs, and obstetric ultrasound. Possible reasons that this condition may go undetected are the rarity of the condition, the intermittent nature of the condition, an incomprehensive obstetric ultrasound examination, and an asymptomatic patient presentation. If left untreated, MH can cause pulmonary hypertension, venous congestion, and bowel infarction.

Conclusions: Thorough medical examinations reviewing all major body systems should be conducted on all infants after birth, regardless of health appearance due to the subtle findings present in many congenital conditions such as the one presented in this case.

Clinical significance: Congenital diaphragmatic hernia cannot be discounted due to age in young children without a previous chest radiograph presenting with respiratory symptoms. Special consideration should be given to the possibility of a Morgagni diaphragmatic hernia in these children due to the anterior nature of the defect, which allows lung function to remain relatively normal and may contribute to late detection.

65. Difficult Diagnosis: Episodic Abdominal Pain and Swelling in a Young Female
Berry R, Rajpoot D
Idiopathic systemic capillary leak syndrome (SCLS), also known as Clarkson’s disease, is an extremely rare disease whose current molecular etiology remains unknown despite a 26% increase in published cases since 2006.1

Case: A 24 year old Hispanic female, with a medical history of aplastic anemia, gastroschisis, short gut syndrome, and CKD. Chart review reveals more than 100 admissions for abdominal pain with resulting diagnoses ranging from blind loop syndrome, SBO, and small-intestinal bacterial overgrowth (SIBO). In 2007, she began presenting with episodes of localized edema further complicated by pericarditis, midbrain hemorrhages, and seizures. The final diagnosis of SCLS was made in 2009 when she was admitted with pulmonary edema which improved after therapeutic trial with theophylline.

Conclusion: Patients with SCLS usually present with episodes of unexplained edema, hypoalbuminemia and fluctuation in blood pressure. To our knowledge, this is the first reported case of a young patient diagnosed with SCLS whose predominant symptom was abdominal pain, and low-normal albumin throughout her hospital stays, further delaying the diagnosis. This could be explained by her edema consistently manifesting in the abdominal viscera. Our goal is to bring awareness of this condition and to keep this rare disease in the differential diagnosis of unexplained edema.

Clinical Significance: This novel case will aid physicians in the workup of episodic abdominal pain with edema and fluctuations in blood pressure and albumin. Due to the patient’s overlapping symptoms, this case highlights the importance of understanding the nuances differentiating similar disease processes. It also provides a thorough review of SCLS and other rare but important diagnoses to consider when evaluating critically ill patients who present with episodic symptoms—reducing the traditional delay in diagnosing patients.

66. Hit Like a Girl: Differences in post-concussive symptoms and management between males and females
Black K, Pedro C, Rohr-Kirchgraber T

Women and girls are experiencing concussions at a significantly higher rate and severity than boys and men. So why are concussions so narrowly synonymous with football and not female ice hockey players who are statistically the most likely to incur concussions? Evidence suggests females experience more severe
concussions subjectively and objectively than males in the same sport. Despite this
evidence, concussed females are still being overlooked and undertreated.

A 59-year-old female with previous traumatic brain injuries, presented for follow up
after her discharge following a helmeted fall from her horse complicated by loss of
consciousness, Glasgow Coma scale of 2, intraventricular hemorrhage, closed
orbital fracture, and pneumothorax. Upon discharge she was released to resume all
activities in 1 week.

On her one week follow up, her concussive symptoms remained with double vision,
instability, severe headaches with reading, inability to concentrate and short-term
memory loss.

Despite her symptoms, mechanism of injury and past trauma history, the patient was
never informed she sustained a significant concussion nor what to expect or things to
avoid.

The approach to management of a concussive patient such as a 17-year-old football
player with a similar presentation would most likely be completely different. A
conversation would have been had with the patient about brain rest: not returning to
work, not watching thought-provoking television shows, staying away from reading
and her cell phone. This patient was an older female who sustained a head injury in
a non-traditional way. Perhaps that is why she was not advised. Females may be at
greater risk for concussion than males and higher concussion rates are trending
among women. A concussion should be considered in all who have sustained a
head injury, regardless of the gender or how the injury occurred and appropriate
management is needed.

67. Hiding in plain sight – normal tension glaucoma
Churchill JL, James HR

Case: Glaucoma damages the optic nerve and can cause irreversible blindness.

Many factors can increase a patient’s risk for glaucoma, most importantly age, black
race, family history, and elevated intraocular pressure. It is now known that glaucoma
can occur at statistically normal intraocular pressures and prevalence studies have
shown that normal tension glaucoma is more common than previously thought. A
50-year-old African American male presented to a student-run free clinic in Norfolk,
VA. He had been given a diagnosis of glaucoma at age 35, but had stopped using
his eye drops after four years due to cost. He was screened for glaucoma and found
to have significant cupping of the optic disk, a sign of advancing glaucoma.
Interestingly, his visual fields by confrontation appeared fully intact and intraocular pressures were not elevated, which, according to the patient, was a finding that had excluded him from further glaucoma investigation in the past after he had stopped taking his medications. Upon further workup, OCT scan and Humphrey visual fields revealed evidence consistent with damage to the optic nerve and loss of visual fields.

Conclusions: This case illustrates that proper education and access to care is vital in detecting degenerative diseases such as glaucoma. Education regarding normal tension glaucoma is especially important due to the counter-intuitive nature of the ocular findings. Normal intraocular pressures should not negate the need for further glaucoma screening.

Clinical Significance: At onset of glaucoma symptoms, irreversible damage to the optic nerve has already occurred, making early detection a primary concern. Detection is significantly harder in normal tension patients, especially if those patients are part of populations with little healthcare education and limited access to ophthalmology services due to lack of insurance.

68. Whole genome sequencing to identify the genetic etiology of the TIM-1 thymoma mouse model
Conces ML, Hancock BA, Atale R, Solzak J, Radovich M, Loehrer PJ

Hypothesis: The TIM-1 mouse is a transgenic murine model that spontaneously develops thymomas. It was created serendipitously by introducing a transgene consisting of a mouse α-cardiac MHC promoter, a constitutively active human TGF-β, and an SV40 integration sequence. All mice developed thymomas as well as liver and cardiac damage. Previous data demonstrated that the likely cause of these thymomas is due to insertional mutagenesis by the transgene. In humans, thymomas are a rare form of cancer of the thymus gland with approximately 500 cases in the United States per year, with equal numbers affecting women and men. The hypothesis is that identification of the exact insertion site of the transgene may provide potential clues to the genetic causation of thymomas in humans.

Methods: To identify the insertion site of the transgene, germline DNA from the TIM-1 mouse was whole genome sequenced on an Ion Proton next-generation sequencer. Sequencing data was then uploaded to the IU Quarry Supercomputer, and analyzed using a suite of bioinformatics software including: BLAT, BLAST, FusionMap, and Genome Assembly. Preliminary results demonstrated the transgene was integrated
into a repetitive area of the mouse genome, so long-insert mate pair sequencing was
employed in order to traverse the repetitive region to identify the integration site.

Results: The integration site was identified on Chr2qF1 within the intron of the
FAM227B gene. Tandem integration of the transgene was further confirmed with an
estimated 30 copies. Initial results show a nearby gene that may be affected by the
transgene insertion in the TIM-1 mouse, FGF7, which is implicated in the
development of the thymus and liver.

Conclusion: In conclusion, whole genome sequencing of the TIM-1 mouse model
identified the region of tandem integration of a transgene on Chr2qF1 with potential
translational implications of understanding the genomic etiology of thymoma in
humans.

69. “Why am I so tired and sore?” A Case of Necrotizing Myopathy
Connor C, Siriwardane J, Rohr-Kirchgraber T

Fatigue is one of the more common complaints that bring patients to a physician’s
office, especially among working mothers. Physicians must be alert to the red flags
that signal a more serious problem.

30 year old working mom presented to establish care and complained of always
being tired, muscle soreness and weakness in the extremities. Her exam was
remarkable for myalgia but also 4/5 weakness in the extremities. Labs noted a CK
14,912 units s/l and mild transaminitis. She was admitted to the hospital for
rhabdomyolysis and admitted to a new sexual partner and more “aggressive sex,”
but no other known injury or new medications. Further evaluation was concerning for
inflammatory myositis as her CK levels did not decline and her weakness worsened.
EMG revealed generalized myopathy with active inflammation consistent with
inflammatory myopathy and deltoid muscle biopsy determined the diagnosis to be
necrotizing myopathy. She was subsequently treated with prednisone and started on
methotrexate. After initiation of treatment and physical therapy, the patient reports
10% improvement in her symptoms. She is currently being followed by
Rheumatology and continues to work with physical therapy.

Necrotizing myositis, an uncommon idiopathic inflammatory myopathy targeting
skeletal muscle, presents with muscle weakness, elevated muscle enzymes, EMG
abnormalities, and characteristic histopathology. Nonimmune mediated is linked to
medications and toxic exposures, while immune mediated includes causes like anti-SRP antibodies, connective tissue disease, post-statins exposure with anti-HMGCR autoantibodies, and certain viral infections. Though her underlying etiology is unknown, the histopathology of the surgical specimen showed the characteristic findings of necrotizing myositis: moderate necrotic and atrophic fibers without evidence of perifascicular atrophy and a mild, perimysial infiltrate of inflammatory cells, predominantly macrophages. Treated with steroids, she has improved on maintenance methotrexate for therapy. Physicians should be alert for red flags such as muscle weakness and pain on exam that would lead to further evaluation.

70. Get the GISTs: Immunohistochemical Staining the Method of Diagnosis Gastrointestinal Stromal Tumor
Croissy M, Rosenthal A

Case: A 66 y/o male with a history of HTN, DM type 2, and CKI stage III, presented to the emergency room with a chief compliant of mild periumbilical abdominal pain with associated symptoms of fatigue, poor appetite, 5lb weight loss, subjective fever, and multiple episode of non-bloody diarrhea. Symptoms began 20 days prior to emergency room visit and progressively worsening. The severity of the pain was a 6/10 and was characterized as constant and dull. He tried antacids, without relief. The patient denied shortness of breath, chest pain, nauseousness, or vomiting. He had no significant surgical or family history. He denied smoking or using alcohol. The patient is a recent immigrant from Bangladesh. Further evaluation by CT of the abdomen revealing a 3 cm lobulated calcified mass in the mesentery of the right middle abdomen and partial small bowel obstruction. An explorative laparotomy was performed with the resection of two portion of the small bowel mesentery, 8 cm middle jejunum and 8 cm distal ileum. A 4 cm lesion was removed and follow up with surgical pathology identified the lesion as a Gastrointestinal Stromal Tumor (GISTs), spindle cell type. Immunohistochemical staining was positive for CD117, CD 34, and DOG1. Staging was T2N0, low risk. He had an uneventful recovery. Conclusion: This case illustrates the importance of understanding GIST, its pathological identifications, factors predicating its behavior, prognosis, and treatment.
Clinical Importance: Jejunum/ileum GISTs are rare, accounting for 20% of new cases. GISTs were previously classified as neurogenic or smooth muscle tumors, such as neurofibromas and leiomyosarcomas. However, advancements in immunohistochemical staining showing active mutation in the KIT receptor tyrosine kinase gene or platelet derived growth factor receptor alpha mutation distinguishes GISTs from other mesenchymal tumors.

71. “Why Does this Acne Medicine Not Work?” A case of Birt-Hogg-Dube Syndrome
Easwaran T, Medda R, Rohr-Kirchgraber T

Birt-Hogg-Dubé Syndrome (BHD) is a rare autosomal dominant condition resulting from mutations in the folliculin (FLCN) gene. Patients usually remain asymptomatic until they present with fibrofolliculomas, trichodiscomas, pulmonary cysts, spontaneous pneumothorax, and various renal malignancies, which occur at an average age of 48. With highly variable presentations of the disease, even within the same family, BHD tends to be underdiagnosed.

At age 41, a Caucasian female presented with flesh-colored papules on her face, neck, ears, chest and back and the first of three spontaneous pneumothoraces. She was initially treated for commonplace acne using isotretinoin but continued to consult physicians for the worsening papules. At age 51, she complained of a significant increase in the unsightly papules and noted that her father had had similar lesions. A biopsy of the nodules revealed that they were fibrofolliculomas, pathognomonic for BHD, and thus underwent genetic counseling. Her children, who had noted similar facial papules, tested positive for the gene, though no other significant findings were discovered at the time of diagnosis.

BHD patients incur life-threatening, as well as psychological burdens from the skin, kidney, and lung lesions manifested. Management of skin fibrofolliculomas has limited therapeutic options; there have been encouraging results from laser ablation using fractional CO2 lasers, although this is only a temporary improvement. Skin tags or pendulous fibrofolliculomas, however, are easily excised. To prevent precipitating a pneumothorax, it is recommended that BHD patients avoid large changes in ambient pressure. Surveillance is critical in BHD patients; renal cancer incidence ranges from 25-75 years in these patients, so it is recommended to begin surveillance at 20 years. Due to the BHD risk for skin and renal tumors and the pattern of inheritance, it is
essential to document an accurate family history and genetically test family members for appropriate screening and management.

References

72. Baby Boomers at Risk: Hepatitis C, an Infection of the Liver
Ellsperman S, Menegotto J, Thoma-Perry C, Rohr-Kirchgraber T

Hepatitis C causes chronic infection in ~85% of patients and is due to an RNA virus spread primarily through blood contact such as blood transfusions, IV drug use, unsterile tattooing and bodily fluid transmission during sexual intercourse. New treatment options available within the last 4 years have revolutionized treatment with antiviral medications can have a cure rate of over 90%. Without treatment, the chronic insult to the liver can lead to development of cirrhosis, hepatocellular carcinoma, and hepatic failure.

59 year old female with a history of cocaine use, no IV drug use, has had asymptomatic cirrhosis (MELD 8) due to untreated hepatitis C, diagnosed in 1999. Due to current recommendations and new treatment options, she elected to pursue care. A transient elastography (FibroScan) performed to evaluate liver fibrosis and steatosis prompted a CT of the abdomen and pelvis which showed a 1.7 cm arterially enhancing lesion in the liver and hepatocellular carcinoma (HCC) was suspected, and prompt antiviral therapy initiated. A right hepatic wedge resection was performed.
with clean margins and the primary tumor was staged at pT1 with no evidence of vascular invasion.

Approximately 75% of the 3.2 million people in the US with Hepatitis C are baby boomers. Therefore, Hepatitis C screening is recommended in all born between 1945 and 1965 and others with possible exposure or higher risk occupations. A one-time blood test for Hepatitis C is sufficient for screening as “baby boomers” are five times more likely than other adults to be infected. Hepatitis C is a leading cause of liver cancer and the leading cause of liver transplants in this group, accounting for 73% of all hepatitis C-associated mortality. Recommendations for specialized testing for those with Hep C has also evolved and is leading to a more robust treatment options and decreased mortality, but first we have to know who is infected!

73. Cutaneous Sarcoidosis Identification in a Patient with Asymptomatic Third Degree AV Block
Fahs F, Chapman R

Case: We present a case of cardio-pulmonary sarcoidosis, diagnosed when a 68-year-old African American male presented to dermatology for treatment of an itchy scalp. Skin examination revealed male pattern hair loss without scarring or scale but with an annular pattern of mildly hyperpigmented indurated papules arranged in 2-3 cm plaques on his frontal and parietal scalp. A 3mm punch biopsy was taken from the right parietal scalp lesion active edge, which revealed non-caseating granulomas, characteristic of sarcoidosis.

Conclusions: Correspondence with the patient’s cardiologist and dermatologist resulted in placement of a biventricular pacemaker with implantable cardiac defibrillator prior to starting treatment with oral steroids for management of pulmonary symptoms. The patient was co-managed for his cardiac and pulmonary disease and has had improvement in his pulmonary and skin condition.

Clinical Significance: This case stresses the need for a thorough history, biopsy and medical evaluation in order to diagnose and manage sarcoidosis effectively. It also demonstrates the importance of cross-communication between physicians of various specialties for careful management of patients.

74. Not supposed to happen here! Acute PSGN
Flores S, Weaver L, Armstrong S, Rohr-Kirchgraber T

While Post Streptococcal Glomerulonephritis (PSGN) may be seen after bacterial infections arising from the skin or pharynx, it is not often seen in developed countries. In a globalized society, it is important to keep a scope of diseases in mind. Disease demographics should serve as guidelines not limitations in the consideration of possible diagnoses.

A 26-year-old female presents with flank pain, diffuse edema and new hypertension. One month prior, she was treated for strep pharyngitis, confirmed by rapid strep test. On presentation she has a creatinine 9.45, ASO titer 800 and hypertension 164/87 with nephrotic range proteinuria and stage three acute kidney injury c/w acute glomerular nephritis.

Renal biopsy noted diffuse acute proliferative glomerulonephritis, IgG- and C3-dominant, compatible with post-infectious glomerulonephritis; acute tubular necrosis, likely secondary to glomerulonephritis and the diagnosis of post-streptococcal glomerulonephritis (PSGN) was made. Treated with steroids and monitored closely, she has been improving.

PSGN, an inflammation of the glomerulus caused by an immune complex mediated mechanism, results from an infection with group A streptococcus. The proteins produced have an affinity for sites in the glomerulus which when bound activate complement to generate additional inflammatory mediators. The presence of immune complexes on renal biopsy is diagnostic for PSGN.

PSGN is rare in industrialized nations secondary to early antibiotic treatment for primary infection. Age groups most commonly affected are younger than 15 and older than 60. Patients with PSGN commonly present with edema, gross hematuria, proteinuria, and hypertension. Our patient presented with the classic signs and symptoms of PSGN, but did not fall into the common demographics of a PSGN patient. She was from a developed nation, treated for her primary infection promptly with antibiotics, and was not in the common age range for PSGN.

75. Hand, foot and mouth disease in an adult: a case report
Goldstein A, Goldstein C, Speizman D
Case: A 26-year-old Caucasian male presented with a two day history of fever, rash, cough, and sore throat. His son was recently diagnosed with coxsackie virus after an outbreak at his daycare. His physical exam is pertinent for erythematous oral lesions and a maculopapular rash on his palms, medial aspect of his ankle, and dorsal foot. The diagnosis of hand, foot, and mouth disease (HFMD) was made based on history and clinical presentation. Treatment included supportive care with rest, fluids, and acetaminophen and a discussion of hand hygiene to prevent further disease transmission.

Conclusion: HFMD is an uncommon viral infection amongst adults in the United States, but has been implicated in recent epidemics in Asia and is becoming a public health concern. It is important to be able to recognize HFMD to prevent further transmission and permanent disease sequelae.

Clinical Significance: HFMD is a viral exanthema most commonly caused by the coxsackie virus and enterovirus. The majority of cases occur in children, and it is considered rare in adults (1). There has recently been an outbreak of HFMD in Asia resulting in a travel advisory issued by the CDC for American travelers (2). This case is significant because HFMD is generally not considered in the differential diagnosis of an adult presenting with fever and rash due to its rarity. Although HFMD is usually self-limiting, it is very contagious and can lead to serious complications such as encephalitis, meningitis, and even death. HFMD is important to recognize and diagnose to minimize its spread and prevent serious possible sequelae. (3).


76. “Oh, My Aching Back!” Multiple Myeloma
Harris A, McLaughlin B, Enders S, Rohr-Kirchgraber T

Multiple myeloma (MM) is an infiltration of plasma cells into bone, other organs, or kidney injury, which causes normocytic, normochromic anemia, bone pain, fatigue, weakness, elevated creatinine, weight loss, and hypercalcemia. Bone pain associated with movement tends to appear in the back or chest at the time of diagnosis. Multiple myeloma (MM), not a common cause of cancer, carries a lifetime risk of 1 in 143 and attacks those over 65. The typical presentation of anemia, back pain and renal insufficiency in a man over 65 makes it easy to answer correctly on an
exam question, but when the symptoms come on slowly and piecemeal, the diagnosis can be more difficult.

A 62 yo female complained of worsening back pain x 1 year. MRI noted degenerative spinal disease causing spinal stenosis which required surgery. Though slightly improved with the surgery, she began to be more fatigued and a BMP noted an increased creatinine to ~2.0. Thought due to NSAID use, her NSAIDS were discontinued and the creatinine improved slightly. She then complained of fatigue and had to quit her job. Work up revealed anemia, pancytopenia, nephrotic proteinuria, and elevated creatinine. A bone marrow biopsy then revealed bone marrow effacement and 15% plasma cells and a skeleton study showed a small lytic lesion in the right femur. Urine studies indicated elevated free kappa light chains and immunologic studies indicated elevated M proteins; all consistent with multiple myeloma.

Chronic back pain is the most common disability in America. Degenerative bone disease of the spine is inevitable due to the aging process in humans. When caring for patients with chronic back pain that are not manageable with conservative treatment and multiple interventions, a hematologic work up of immunoglobulins, bone marrow biopsy, and urinalysis should be considered for potential early detection of multiple myeloma for appropriate treatment.

77. Impact of medically futile treatments on healthcare spending
Ho JL, Chait RD

A 72 year old man with NYHA class IV heart failure following two mitral valve replacements, cardio-renal syndrome, and atrial fibrillation was hospitalized with worsening heart failure. Physicians caring for the patient concluded that further treatment was futile as there was no chance of meaningful recovery. After a discussion with the family, there was full and total agreement that hospice care at home or in an inpatient hospice facility was the best option. However, the patient himself refused hospice care and insisted on hemodialysis being performed. After several days of treatment, the patient elected to terminate hemodialysis and died shortly thereafter.

This case illustrates some of the issues in providing medically futile care towards the end of life. In the United States, per capita spending on healthcare for adults over the age of 65 is five times higher than for children under 18, and 2.7 times higher
than for adults 18-64. Analyses of Medicare expenditures show that a significant portion of reimbursements are made for a small percentage of Medicare beneficiaries in their last 1-2 years of life. Minimizing the use of medically futile treatments while providing palliative options for patient care near the end of life may provide comfort for patients and their families, reduce unnecessary Medicare spending, and improve overall efficiency of healthcare resource distribution. It is important for physicians to develop the practical skills necessary to compassionately and effectively discuss end-of-life decisions with patients and their families to ensure comfort for the patients and to avoid unneeded financial and emotional strain on their families.

78. “10+ years of insulin for nothing?” Type 1 Diabetes disappears

Type 1 Diabetes Mellitus typically occurs in childhood but can present at any time in life. The incidence of this disease is increasing by 2-5% every year in the US. The CDC reports that 18,000 new cases are diagnosed each year in youth aged 10-18 years old. The diagnosis can be made based on clinical symptoms, laboratory tests, or both. Tests include antibody levels (anti-islet and anti-GADA) and HLA markers.

A 30 year old woman with a history of Type 1 Diabetes, presents to establish care with a new PCP. Six months prior, she was told she no longer had diabetes and could cease her insulin treatment. Diagnosed at age 18, she was found to have elevated serum glucose and suffered from recurrent UTIs. It is unclear which other lab tests were ordered at that time. She reported being on Lantus, 6 units daily, since her diagnosis. At age 20, anti-Insulin Ab was positive. However, Anti-GAD Ab and anti-Islet cell Ab were negative. Chart review showed a single urinalysis performed, at age 26, which was positive for severe glucosuria (250 mg/dl) and trace proteinuria. Her HbA1c has always ranged between 4.5 and 5.3%, even after stopping her insulin six months ago.

The sensitivities and specificities of the antibody assays vary greatly. Also, the presence of antibodies reacting with a single islet autoantigen do not always indicate impending progression to Type 1 Diabetes. In addition, there is a risk for antibodies to disappear and for the samples to be mishandled. Given this information, was the diagnosis of Type 1 Diabetes accurate?

79. Postpartum Discovery of Maternal Congenital Heart Defect
Case: 24 yo G1P0 female with no significant past medical history, an uncomplicated pregnancy, and inadequate prenatal care presents with leaking vaginal fluid. She reports gestational age of 38+6. Patient believes her water is broken, however, she does not feel any contractions. Maternal vitals reveal tachycardia, hypertension, 98% O2 saturation, and temperature of 99.2F. Monitor reveals fetal heart rate between 180-200, minimal variability, and deep variable decelerations. Ultrasound reveals active fetus of gestational age 33+2 and anhydramnios. Fluid bolus was administered to improve maternal and fetal tachycardia to no avail. At this point emergent cesarean section was successfully performed and a healthy baby was born.

In the following days, the mother’s hemoglobin dropped dramatically, raising the suspicion of internal hemorrhaging. Exploratory laparotomy was performed and 2L of blood was evacuated. Despite surgical intervention, tachycardia and hypertension persisted with new onset dyspnea and hypoxia with minimal urine output. Physical examination revealed bilateral crackles on lung auscultation and lower extremity edema. Laboratory tests revealed a BNP of 3900 mg/dL and a creatinine of 0.7 mg/dL. Subsequent chest x-ray revealed that the patient’s heart was enlarged three times the normal size. The patient was transferred to the ICU and echocardiograms were performed. The TEE revealed ejection fraction of 30%, severe aortic regurgitation, and congenital bicuspid aortic valve.

Discussion: When constructing a differential diagnosis for a postpartum patient with hypertension, tachycardia, and hypoxia, possibilities include pulmonary embolism, postpartum cardiomyopathy, preeclampsia, CHF, and acute MI. A bicuspid aortic valve or other congenital cardiac defect is far less likely. The full differential is especially inclusive due to lack of prenatal care. Interestingly, natural labor in this patient could have been extremely dangerous, possibly resulting in death. Her unexpected presentation allowed for a potentially lifesaving c-section. She is now scheduled to undergo valve replacement.

**80. Pregnancy and an Expanding Right Breast Mass**

Jones D, Ludwig K

Case: A 34 year-old Caucasian female, G1P0, 33 WGA presented with painful right breast mass that had been present for 5 years but had increased in size during her
pregnancy. She denied any symptomatology in the contralateral breast. The patient had a history of augmentation mammoplasty. She was otherwise healthy, and denied family history of breast or ovarian cancers. On clinical exam, a soft 12 x 15cm mass was noted in the right medial breast, with displacement of the nipple laterally. No suspicious adenopathy was noted. Diagnostic imaging showed an 8 cm oval hypoechoic mass with smooth borders suggestive of benign etiology. Core needle biopsy demonstrated benign breast tissue with lactational change. Because of the presence of symptoms, recent enlargement of the mass, and the patient’s desire to breastfeed, surgical excision was planned, with multidisciplinary input from both obstetrics and anesthesia. Surgical excision with close fetal monitoring was performed, with no complications for both mother and fetus. Final pathology showed a lactational adenoma. The patient delivered a healthy baby boy at full term with no complications, and was able to breastfeed.

Discussion: Lactating adenomas are benign breast tumors that occur during pregnancy or in the postpartum period. They are a result of the hormonal changes of pregnancy; they can develop de novo, or as lactational transformation of a pre-existing lesion. On clinical exam they tend to be well-encapsulated but may enlarge quickly. Imaging features may be non-diagnostic, as they share features of both benign and malignant lesions. Biopsy is usually recommended to obtain histologic diagnosis. Most of these lesions resolve upon completion of breastfeeding, but surgical excision may be indicated to the presence of symptoms or concern of malignant pathology.

81. A Rare Case of Perianal Granular-Cell Tumor
Kelly E, Brickman L

Case Report: A twenty-nine year-old female presented with a perianal mass growing in size over several years. Upon presentation she denied tenderness, pain, and bleeding. Physical exam relieved a 3 cm left lateral perianal mass in close proximity to the anal verge. The mass was mobile, elevated, indurated, and did not attached to the deep planes. At this time, the decision to undergo excision and biopsy was made. An elliptical incision was made around the mass approximately 0.5 cm from its visible edge. The subcutaneous tissue was carried down with a cautery and the mass was completely removed without complications and sent for Pathology. The Pathology report made the diagnosis of granular cell tumor via immunostains with positive and negative controls demonstrating S100 positivity. The diagnosis of GCT was made. Postoperatively the anal area showed no mass, rectal, or anal bleeding.
Conclusion: Perianal Granular Cell Tumor is a rare lesion presenting clinicians with a difficult diagnosis. Therefore, GCT is an important differential to be included when evaluating a patient with an asymptomatic perianal submucosal lesion. Since, GCT and Squamous Cell Carcinoma present similarly with pseudoepitheliomatous hyperplasia of the epithelium, it is important that a biopsy and immunohistochemical analysis be performed. Wide local excision is the gold standard of treatment and follow-up includes annual colonoscopy due to the high incidence of reoccurrence.

Clinical Significance: Granular Cell Tumor (GCT) is a rare submucosa neoplasm most commonly localized in the oral mucosa; with one-third of all cases found in the tongue. There are less than 30 cases of perianal GCT reported in the literature, making it a rare anal neoplasm. GCT lesions are confined to the submucosa and present as a benign, asymptomatic, small, non-ulcerated, polypoid, firm lesion. Most commonly, perianal GCT is found incidentally on endoscopy/colonoscopy evaluation for hemorrhoids and fissures.

82. Anti-N-Methyl-D-Aspartate Receptor Encephalitis: To Remove or Not To Remove
Kim S, Hyslop A

Case: A previously healthy 17 year-old female presented with a 5 month history of mild behavioral changes followed by sudden onset fever and headaches. She exhibited disorientation, confusion, and visual hallucinations. Her symptoms progressed quickly to encephalopathy, respiratory failure, and the emergence of abnormal movements. CSF studies sent for autoimmune etiologies showed elevated anti-NMDA Receptor IgG titers of 1:640 and serum titers of 1:1290. A video EEG showed presence of continuous extreme delta brushes, consistent with anti-NMDA receptor encephalitis (NMDARE) and recurrent seizures in the temporal regions. Abdominal, pelvic CT, and PET scan revealed no focal abnormalities. Due to her severe, movement disorder, seizures, and encephalopathy, she was treated with high-dose corticosteroids, monthly IVIG, and plasmapheresis as well as several doses of rituximab and cyclophosphamide. Serial analyses of serum and CSF anti-NMDAR titers showed an overall decrease. 6 months after her initial admission, the patient was readmitted due to increasing psychosis. A new left-sided ovarian mass was found on ovarian ultrasound and pelvic CT. On gross surgical inspection and pathological examination, the mass was consistent with a teratoma.
Conclusion: This case introduces a dilemma in adolescent females with NMDA autoimmune encephalitis. In our case, the patient had significantly elevated anti-NMDAR antibodies, but no ovarian teratoma could be identified radiographically at initial presentation. Evaluation for the presence of teratomas is recommended when the NMDA receptor antibody titers remain high; however, in our patient’s case, antibody titers were decreased with aggressive treatment and she showed slow clinically improvement despite the development of teratoma. Future studies should be focused on how frequently, and by what method, females with elevated anti-NMDAR antibody titers should be monitored for the development of an ovarian teratoma.

Clinical Significance: To determine ovarian teratoma imaging protocol for adolescent females with NMDARE and no visible tumor.

83. “When a cough is a disaster! Pertussis”
Langhals P, Wiseman M, Strothmann K, Rohr-Kirchgraber T, Duwve J

A cough is among the multitude of chief complaints seen in primary care, with many people thinking of it more as a nuisance than something serious. For our patient, a “cough” resulted in serious and expensive complications. *Bordetella pertussis* is one condition presenting with a cough that can lead to serious complications, including death. Nearly 33,000 pertussis cases were diagnosed in 2014, which resulted in 13 deaths. This was a 15% increase in pertussis cases from 2013. 1

A 43 yo - with T2DM, HLD, schizophrenia, obesity, and nicotine dependence presented with a cough >2 weeks and recent onset SOB s/p “hearing crack or pop in lung.” Initial CXR revealed broken left ribs but no pneumonia. A week later the SOB was described as “having to gasp for air” with pain on left lower abdomen attributed to “ripping a muscle while coughing.” *Bordetella pertussis* was confirmed with antibody serum tests. The following week she had a large abdominal ecchymosis and small left sided pleural effusion/infiltrate. Two months later she had a persistent cough with wheezing, fevers/chills and post-tussive emesis. She had lower extremity edema, left lower lobe airspace disease consistent with left-sided pneumonia and associated large pleural effusion requiring hospitalization and pleurocentesis. She later developed a large left abdominal wall seroma…and the story continues.

The pertussis vaccine originated in 1949, and in 2005 the first acellular pertussis vaccine (Tdap) was approved for use in adults up to age 64.2 The ACIP recommends that all adults 19-64 years and adults >65 in close contact with infants
< 12 months should receive the pertussis vaccine. This case demonstrates that pertussis is more than a disease that causes infant mortality and cough in adults. We must vaccinate patients for many reasons; the most imperative being prevention of life threatening disease in newborns.

Works Cited

84. 84 year old woman with tachycardia: case study on aortic aneurysms
Lattimore S, Duprat C, Welch J

Background: Thoracic and abdominal aortic aneurysms are among the leading causes of death in the United States in people over the age of 55. One third of the aortic aneurysms admissions are thoracic aortic aneurysms (TAA) with the remainder being abdominal aortic aneurysms (AAA). Patients with TAA commonly present with severe chest and back pain. Studies have shown that between 1987 and 2002, the incidences of TAA rose by 52% in men and 28% in women. Although women are less like likely to develop a TAA, certain risk factors such as atherosclerosis from smoking, hypertension and hypercholesterolemia increase women’s risk.

Case: An 84-year-old African-American female presented to an emergency department from an extended care facility after routine vital signs assessment found she was tachycardic and tachypnic. The patient had a history of coronary artery disease, hypertension, paroxysmal atrial fibrillation, and hypercholesteremia. On admission, she was taking aspirin, plavix, and Coumadin daily. The patient had a 30-pack-year smoking history, but had quit smoking in 1980. CT scan showed cardiomegaly, as well as a 4.22 cm thoracic aortic aneurysm and a 7.2 cm abdominal aortic aneurysm. The patient was treated with diltiazem and later transitioned to a beta blocker and digitalis.

Discussion: While TAAs are often discovered incidentally on chest imaging, AAAs have more obvious manifestations on clinical exam. TAA generally cause no changes in vital signs or physical exam. There are currently no screening guidelines
for TAA and its clinical course is less understood than that of AAA. Repair of either type of aortic aneurysms is done via two modalities: open repair or endovascular aneurysm repair (EVAR). Generally, TAA’s are not repaired unless they are symptomatic, an enlarged aortic diameter, rapid aneurysm growth, or greater than 4.5 cm. The size of thoracic aneurysms is the most important prognostic indicator.

85. Dying for a Consult: Palliative Care in the Emergency Department
Leech L, Gurram H, Kenninger H, Welch J

Case: A 50-year-old female with a history of recently diagnosed stage III endometrial cancer, diabetes mellitus II, and hypertension presented to the ED via EMS with nausea, vomiting and altered mental status. She had yet to have her first gynecology-oncology appointment. Upon exam, patient was found to be hypoxic and tachycardic with diffuse abdominal tenderness and lower abdominal fullness. Chest CT revealed nodules of the thyroid and lung as well as sclerotic bone lesions suspicious for metastasis. Laboratory studies revealed hypercalcemia, hyponatremia, hypokalemia, hyperglycemia, leukocytosis and an elevated serum lactate. Patient was hospitalized for twenty-seven days during which she was stabilized and began receiving chemotherapy for her endometrial malignancy. Three months later the patient was admitted to the hospital with low back pain and lower leg weakness and workup revealed subacute left frontal infarct. She was stable and discharged to home. Two months later patient presented to the ED with tachycardia, respiratory distress, and unremitting abdominal pain. Emergent CT of chest and abdomen revealed worsening metastatic spread. Given lack of response to chemotherapy and worsening status, family elected for comfort care only.

Conclusions: As the necessity for palliative care in the ED is emerging, palliative care curriculum for medical students and emergency medicine physicians has become essential. The implementation of screening protocols will enhance future care directives.

Clinical Significance: The majority of cancer patients experience at least one emergency situation during their disease course. As emergency medicine is often traditionally viewed as rescuing procedures for acute illnesses, there seems to be less education for providers regarding palliative care in an ED setting. Only a limited number of EDs have implemented protocols and screening programs for palliative care consults.
86. What is in my mouth? A case of Ewing sarcoma of the palate
Meyer K, Chauhan D, Herrera MJ, Rohr-Kirchgraber T

Case: After 5 months of progressive nasal and sinus congestion without
improvement, this 17 year old girl began to develop vocal changes, loss of smell, and
progressive difficulty swallowing. Evaluated by otolaryngology, a CT-scan of her
head and neck revealed a large destructive mass centered on the hard palate and
extending into the nasal and maxillary sinuses. A biopsy revealed Ewing sarcoma
with a EWSR1-FLI-1 fusion protein of the hard palate. Metastatic work-up including
PET/CT, bone-scan, and bone-marrow biopsy revealed only locally invasive disease
and two reactive lymph-nodes found to be non-malignant on biopsy. She was
treated with 6 cycles of chemotherapy followed by local resection and 11 cycles of
consolidation chemotherapy. During this time she was also treated with depo
Lupron shots every three months for menstrual suppression and ovarian preservation
during chemotherapy. Her clinical course was complicated by social challenges
such as adjustment disorder and narcotics abuse by her father.

Conclusions: Ewing sarcoma of the hard palate is an extremely rare diagnosis that
can only be made by tissue biopsy with concurrent immunostaining and molecular
testing for characteristic fusion proteins.

Clinical Significance: With any cancer, early detection is key to preventing metastatic
spread and initiating the appropriate treatment regimen. Out patient experienced
symptoms for approximately 5 months before her palatal mass was discovered on
imaging. Thorough physical examination is extremely important as the mass could
be detected on the hard palate by careful examination of the oral cavity. With any
mass of undetermined significance, tissue biopsy is the key to diagnosis. This case
also highlights the importance of considering the needs of the adolescent aside from
her cancer diagnosis. This includes intentional discussions about fertility
preservation during chemotherapy along with addressing social and emotional issues
that the patient may face over the long course of her treatment.

87. Psoas Abscess: It’s a pain in the back
Morgan AM, Parker VA

Case: A 41yo female with a history of shooting pain in her back, leg, and groin for the
past 2 months presented with fecal and urinary incontinence, right foot numbness,
and severe back pain. MRI revealed osteomyelitis/discitis, epidural phlegmon, and
right psoas abscess. Vertebral bone was biopsied and psoas abscess was cultured; however, no organism was identified. IV vancomycin and ceftriaxone were started in the hospital, and will continue as outpatient for 6 weeks via PICC line. Patient will follow up weekly in ID clinic.

Conclusions: Psoas abscesses can be primary or secondary in nature. A primary abscess is due to hematogenous or lymphatic seeding, while a secondary abscess is a result of direct spread of infection from an adjacent structure. Vertebrae are the most common source of infection when osteomyelitis/discitis spreads and penetrates the psoas sheath. Other common sources of infection include the hip joint, GI/GU tracts, or vasculature. Microbiology varies depending on pathogenesis of infection. Our patient’s abscess was secondary to vertebral osteomyelitis, although it is unclear how her spine became seeded with infection. Psoas abscesses can result in many complications, the most serious being septic shock. Fortunately, our patient was not septic during presentation. Other complications include iliac vein DVT, ureteric compression, and bowel ileus.

Clinical Significance: Psoas abscesses can result in significant morbidity and mortality. Studies suggest that secondary abscesses result in mortality in 20% of treated and nearly 100% of untreated cases. The presenting signs and symptoms vary from focal symptoms to nonspecific, subacute symptoms. This can result in delayed diagnosis and increased complications. Although the incidence is low, it is important to keep psoas abscess on the differential when a patient present with nonspecific symptoms, because failure to recognize the diagnosis and appropriately treat can be deadly.

88. Some things are just hard to pass: KUB Foreign Body
Nyaribo LN, Rohr-Kirchgraber T

A 25 year old male complaining of inability to have a bowel movement for 4 days along with emesis and decreased PO intake. Four days prior, he had inserted a foreign body (FB) into his rectum and had been unable to retrieve it. Able to pass flatus he had no evidence of perforation or severe abdominal pain. A KUB noted a large FB extending from the splenic flexure down to the distal sigmoid upper rectum. An exploratory laparotomy and colotomy was performed. Pathology reported “a black, synthetic tubular phallic object with opposing ends of the object grossly suggestive of a glans penis”. Patient’s postoperative course was uneventful and he was given supportive treatment for pain management and stool softening.
FB management can involve bedside retrieval or surgical intervention depending on the distance of the FB from the rectum and the size of the FB. Perforation should always be considered when dealing with FBs as this determines the urgency of intervention. In this patient, the FB was causing symptoms of obstruction but lacked symptoms of perforation, a good prognostic indicator. It is possible that if this patient presented to the ER earlier, the object may have been retrievable, but since he presented 4 days later, the object may have advanced further into his colon. There is although no way to confirm this and it is also possible that the foreign object did not advance further. Retrieving the object that was measuring approximately 4.3 cm in thickness and approximately 43 cm in length may cause tissue injury due to its size. There is also the issue of negative pressure created when pulling the object out that may also lead to more injury. Therefore, the most appropriate intervention was through exploratory laparotomy and colostomy.

89. A Case of Uterine Hemorrhage and Endometrial Polyps in a Young Adolescent
Ogbeifun O, Ratterman E, Tate CM

Case: 13 year-old Caucasian female presented to an outside hospital with heavy vaginal bleeding for 12 days. Initial CBC revealed hemoglobin of 5.1 gm/dL. The patient received a total of 9 units of packed blood and 2 units of fresh frozen plasma in addition to hormonal therapy with no significant improvement. Her peak hemoglobin during this period was 9.7 mg/dL. Coagulation studies and CT scan of abdomen/pelvis were negative, with a sonogram showing an endometrial stripe thickness of 7 mm. On admission to our institution, the patient continued receiving combination hormone therapy and additional transfusions of blood products. After 72 hrs of continuous vaginal bleeding, the decision was made to proceed with diagnostic hysteroscopy and endometrial curettage. Cervical and endometrial polyps were identified and removed. Following polypectomy, uterine bleeding resolved.

Conclusion: We present a rare case of uterine hemorrhage, refractory to traditional medical therapy that resolved upon removal of endometrial polyps in a young adolescent woman. A broad differential diagnosis that includes endometrial polyps should be maintained in adolescents with severe, acute uterine hemorrhage.

Clinical Significance: In adolescent women, irregular bleeding in the first year following menarche is not uncommon. However, acute hemorrhage, requiring transfusion, lasting greater than 7 days is rare and requires thorough evaluation.
Endometrial polyps are a rare finding in adolescent women making hysteroscopic evaluation a procedure of last resort. Perhaps, as our case illustrates, surgical evaluation should be considered sooner in cases of severe hemorrhage.

90. Anorexia Nervosa: Not Just a Woman's Disease
Olabisi J, Paffen S, Rohr-Kirchgraber T

Anorexia nervosa is a chronic, severely debilitating eating disorder. With a 10:1 female to male ratio, the disease is well characterized and described in females; however, less research has focused on this disorder in males. Although the frequency in the male population is significantly less than in the female population, men are overall at higher risk. Men tend to have a delay in diagnosis leading to more severe disease, greater age at onset, and higher mortality rates in comparison to women.

Case: A 58 year-old male presented to an inpatient eating disorder specialty center severely malnourished, dehydrated, and underweight (BMI of 15.8). He reported restricting food intake, intermittent caffeine abuse, muscle wasting, and exercise overtraining. His issues with diet and weight began two years prior in an effort to manage work related stress and as a coping strategy to deal with the suicide of a colleague. Further workup revealed he had co-morbid major depressive disorder and anxiety disorder. He was formally diagnosed with anorexia/orthorexia. The treatment course was complicated by refeeding syndrome and malnutrition with edema. Through intense treatment that included admission to both an inpatient facility and an outpatient partial hospitalization program, he eventually achieved a BMI of 21.4 and continues to receive ongoing treatment.

91. The Apple of My GI
O'Neal KB, Armstrong S

Case: The patient is a 69 year-old Caucasian female with medical history significant for IgA Lymphoplasmacytic lymphoma (LPL) and Monoclonal Gammopathy of Undetermined Significance (MGUS), presents with complaints of left lower quadrant pain. Associated symptoms include nausea and vomiting as well as alternating complaints of diarrhea and constipation. Esophagram showed esophageal dysmotility with weak peristaltic wave. Upper GI endoscopy demonstrated a normal appearing duodenum, however biopsies at that time of the gastric body, antrum, and
duodenum were taken, exhibiting Congo Red positive deposition. Most recent abdominal CT demonstrated thickening of the transverse colon, with ultimate diagnosis of Intestinal Amyloidosis.

Conclusions: Although amyloidosis is a fairly common disease, exclusive GI involvement is rare. Our patient presentation with normal heart and kidney function despite a diagnosis of Amyloidosis is uncommon. Amyloid deposition infiltrates the muscularis mucosa, propria, submucosa, and mucosa propria. There is also nerve involvement when amyloid infiltrates Meissner’s plexus. Common symptoms on presentation are GI bleeds, malabsorption, dysmotility and obstruction. Primary GI Amyloidosis is associated with plasma cell disorders, similar to this patient's history. With treatment, amyloid deposition may decrease, but nerve damage secondary to Amyloidosis is permanent. Our patient was successfully treated with chemotherapy medications. Her amyloid deposits have decreased, amyloid markers are within normal limits, but she continues to suffer from impaired peristalsis as a result of nerve infiltration.

Clinical Significance: Amyloidosis refers to a group of diseases where the primary pathological finding is the extracellular deposition of insoluble polymeric protein fibrils in tissues and organs. The primary cause is due to the misfolding of proteins. Amyloid deposits most commonly in the heart and kidneys, but can affect any organ of the body. The protein deposition causes organ failure and permanent nerve damage.

92. “What is happening to my face?” Acute Parotid Abscess
Rigg L, Beans Ross E, Rohr-Kirchgraber T

Parotid gland abscesses most commonly occur in immunocompromised patients or those with chronic underlying conditions, such as diabetes. Other predisposing factors include dehydration, parotid duct obstruction, and medications that decrease salivary secretion. For this patient, just back from a recent vacation and 3 days post-operative, an acute facial swelling was most distressing and prompt intervention was needed to avoid complications.

Case: A 62 year old female presented with acute swelling of the right face and pain of the right ear. She denied facial trauma, tooth pain, fever, chills, night sweats, weight loss, or any sick contacts. Physical exam revealed a well circumscribed, golf ball-sized mass just below the right mandible that was tender to touch but the
overlying skin was not warm or erythematous. Cervical exam did not reveal any lymphadenopathy. CT imaging demonstrated an enlarged and edematous right parotid gland containing an ovoid hypodense lesion with surrounding rim enhancement. She was treated with Amoxicillin/clavulanate 875/125 mg twice daily for 3 weeks, and recovered without complications or recurrence of symptoms in the following 6 months.

Conclusion: Parotid gland abscess should be considered in the differential of parotid gland swelling. Early diagnosis and treatment are paramount for preventing complications like facial nerve involvement, airway obstruction, and septicemia.

Clinical Significance: The most common causative organisms implicated in this infection are Staphylococcus aureus, Streptococcus species, and anaerobes. Ultrasound is considered first-line imaging for the evaluation of parotid glands, and is a highly sensitive and specific method for identifying suppurative processes. CT imaging is another helpful diagnostic tool. Treatment consists of antibiotics, with or without surgical drainage, in addition to maintaining good hydration and oral hygiene.

93. Effect of Surgeon Volume and Sub-Specialty Training on Cleft Lip and Palate Complication Rates
Schoenbrunner A, Dalle Ore C, Lance S, McIntyre J, Jones M, Gosman A

Background and Purpose: The general surgery and pediatric literature has shown an inverse relationship between surgeon volume and fellowship training and overall complication rates (Birkmeyer, 2003 and Borenstein, 2005). The purpose of this investigation is to assess the impact of surgeon case volume and craniofacial fellowship training on fistula rates in patients with cleft lip and palate.

Methods/Description: A retrospective chart review of 223 non-syndromic patients with cleft lip and palate who received care at our institution from 1988 to 2014 were included in the study. Information about cleft type, type of primary surgery, fistula repair, and surgeon were extracted from the patients’ charts. Fistula repair was the primary outcome. Outliers were defined as those patients who had their primary palate repair after 24 months of age. Independent samples t-test, chi square test, and binary logistic regression analyses were calculated using SPSS.

Results: Surgeon volume by quartiles showed that surgeons with the highest volume performed significantly fewer subsequent fistula repairs than lower volume surgeons
This relationship was not significant when outliers were excluded. Surgeon volume was not significantly associated with fistula repair rate in a binary logistic regression model for all patients (p=0.057) or with outliers excluded (p=0.311). Craniofacial fellowship trained plastic surgeons had significantly fewer fistula repairs for all patients (p=0.005) and with outliers excluded (p=0.029) compared to general plastic surgeons. This relationship also held true in a binary logistic regression model for all patients (p=0.008) but trended away from significance with outliers excluded (p=0.057), indicating that craniofacial fellowship trained plastic surgeons had an overall lower fistula repair rate compared to general plastic surgeons.

Conclusions: Surgeons with the highest case volume and craniofacial fellowship trained plastic surgeons had fewer fistulas for all patients compared to lower volume or general plastic surgeons in our study.

94. A community health assessment of hypothyroidism in a female refugee population
Shah M, Rutter A

Case: A preliminary community health assessment (CHA) was conducted at a primary care clinic in suburban upstate New York. The focal patient population in this CHA included refugees, asylees and immigrants from Afghanistan, Pakistan, and Kashmir, due to the cultural/language background of the physician provider at this site and hence her ability to serve this particular community of patients. This provider has noted, anecdotally, a higher prevalence of hypothyroidism in females of refugee/asylee/immigrant background as compared to the overall population, and that TSH levels seem to be higher than in the overall hypothyroid population.

Conclusions: As we begin to probe possible causes of this suspected discrepancy in patterns of thyroid disease, we must recognize that an estimated one-third of the global population remains iodine deficient, in spite of WHO iodization measures. As populations from the developing world migrate, we should expect that disease presumed to be unique to the developing world will shift accordingly. While hypothyroidism affects females 5-8 times more commonly than males, women of this particular community are less likely to communicate their symptoms for several reasons, including: language barriers & limited interpretation/translation services, less literacy/formal education, cultural norms limiting female autonomy & voice, and the non-specificity of symptoms of hypothyroidism.
Clinical significance: Hypothyroidism in the female refugee/asylee/immigrant population is a multidimensional problem: a global/public health issue of micronutrient deficiency & iodization measures, a social issue revolving around language barriers and cultural obstacles to access & delivery of healthcare, as well as a policy issue of regulated screening measures and advocacy efforts for this community to optimize use of federal & community resources. CHAs are important tools in focusing on a community of interest, identifying challenges facing that community, and proposing approaches to address those challenges.

95. A Case of Cutaneous T-Cell Lymphoma in a Patient with History of Multiple Hematologic Malignancies: A Look at Risk and Path to Diagnosis
Stawikowska M, Mark L

Background: Cutaneous T-Cell Lymphoma (CTCL) is a rare malignancy of CD4-positive T-cells which migrate to the skin, leading to lesions that can range from erythematous patches, scaly plaques, to ulcerating and necrotic tumors. In its advanced stages and without proper treatment, it can involve peripheral blood, lymph nodes, and visceral organs. Its initial presentation is often very insidious, and can mimic common conditions such as eczema and chronic dermatitis, delaying the time to diagnosis in these patients by several years.

Case: A 67-year-old-man has a five year history of persistent erythematous, telangiectatic, morbiliform and intensely pruritic rash refractory to treatment. Over the course of the disease, it progressed to erythroderma with xerosis, diffuse scaling, and lichenification. Initial diagnosis included viral or medication exanthems, allergic contact dermatitis, and paraneoplastic syndrome. Patient had a number of biopsies performed over the years at multiple medical centers; CTCL was ultimately diagnosed using biopsy and flow-cytometry.
Past medical history includes Lymphoplasmacytic Lymphoma treated with Rituximab at 54 and Large B-cell Lymphoma involving the eye and brain at 66 years of age treated with Methotrexate. History of these previous hematologic malignancies raises the question of whether our patient was at an increased risk of developing CTCL.

Conclusion and Clinical Significance: This case represents a common history and path to diagnosis of Cutaneous T-Cell Lymphoma. It is an insidious disease, often presenting as and mimicking more common dermatologic conditions, often leading to the arrival at diagnosis years after the initial onset of symptoms. To reduce the
complications and poor quality of life in these patients, it is crucial to arrive at this diagnosis sooner. Identifying a subset of population at an increased risk for developing CTCL could possibly lead to reducing the time to diagnosis in these patients, improving their outcomes and quality of life.

96. Neonatal Diabetes: a term newborn with persistent need for insulin since birth
Teshima H, Sims E, Chen M

Case: A Hispanic infant was born at 37+1 weeks gestational age, with a history of symmetric intrauterine growth restriction, very low birth weight (1.25kg, 1%), head circumference 28.05cm (< 1%) and anemia requiring blood transfusion on day of life (DOL) 1. Prenatal history included gestational hypertension. Her serum glucose fluctuated from the 30s - 400s over the first ten days of life. Two C-peptide levels were inappropriately low at <0.01ng/ml as well as insulin levels at 0.5, 0.33 when serum glucoses were elevated at 104 and 340. Based on hyperglycemia despite reduced glucose infusion rates (GIR), an insulin drip was started at 0.02 u/kg/day on DOL 11. At the same time, her GIR was adjusted to maintain her serum glucose level between 100-200.

Testing performed included: Normal newborn screen. Negative urine ketones on multiple analyses. Renal/bladder ultrasound (US) showed only grade I bilateral hydronephrosis, US abdomen, US head, echo, X-ray of abdomen and chest, and brain MRI w/o contrast were all negative. Sepsis work up including toxoplasmosis/CMV labs was negative. Metabolic panels including carnitine profile, VLCFA profile, AAPI profile, acylglylcine profile were all normal. Urine organic acids screen was negative.

Conclusion: Neonatal diabetes genetic testing result showed ABCC8 gene mutation. Glyburide 0.5 mg, twice a day was started. We will continue to monitor her serum glucose and titrate glyburide dosing accordingly.

Clinical Significance: Neonatal diabetes mellitus (NDM) is defined as persistent hyperglycemia lasting more than two weeks, occurring in the first six months of life, and requiring insulin for management. Infants with NDM do not produce enough insulin, causing hyperglycemia. NDM is typically caused by monogenetic mutations resulting in dysfunction of pancreatic beta cells, without the presence of autoantibodies against them. NDM caused by mutations in certain genes related to ATP-sensitive potassium channel may respond to sulfonylurea therapy, allowing for
discontinuation of insulin therapy. Because it may guide prognosis and therapy, genetic testing is crucial in this patient population.

97. The role of screening in preventing ASD complications
Wang Y, Thomas E, Choi Y, Armstrong SA, Rohr-Kirchgraber TM

Atrial septal defect (ASD) secundum, a congenital heart disease, is an abnormally large opening in the atrial septum at the site of the foramen ovale and the ostium secundum. It is a common cardiac anomaly, occurring in 564 per 1 million live births. Detected early and treated as needed the outcome is excellent. In the US, prenatal screening in the 1st trimester with fetal echocardiography is used to visualize up to 96% of cardiac anomalies. In the last 20-25 years, diagnosed ASD cases have risen significantly with improved diagnostic methods and screening modalities. If left untreated, ASD can lead to atrial arrhythmias, pulmonary hypertension, and heart failure.

A 35 year old Burmese refugee female with congenital ASD secundum, pulmonary HTN, and right sided systolic CHF was brought to the US for ASD closure. She had minor symptoms such as fatigue and dyspnea during her 4th pregnancy. An echo demonstrated a very large secundum ASD (> 32 mm), L-to-R shunt, enlarged RA and RV and TR. Coronary catheterization laboratory showed left main coronary artery occlusion. An intra-aortic balloon pump was placed along with coronary artery bypass grafting, and a secundum ASD. Patient experienced postoperative hemorrhage, which led to atrial fibrillation and PEA arrest.

Screening leads to early detection and repair and if conducted early, ASD associated complications are prevented and surgical repair of ASD will lead to better outcomes. Screening is highly important in lowering long-term healthcare cost and improving patients’ outcome. Unfortunately, in 3rd world countries such as Burma, poor access to medical care and screening methods inhibits early detection of preventable illnesses. Burma is ranked last in terms of quality of health care according to the WHO (2013), with no organized public health administrative body. Attempts are currently being made to improve the lack of screening methods and low investment in healthcare.