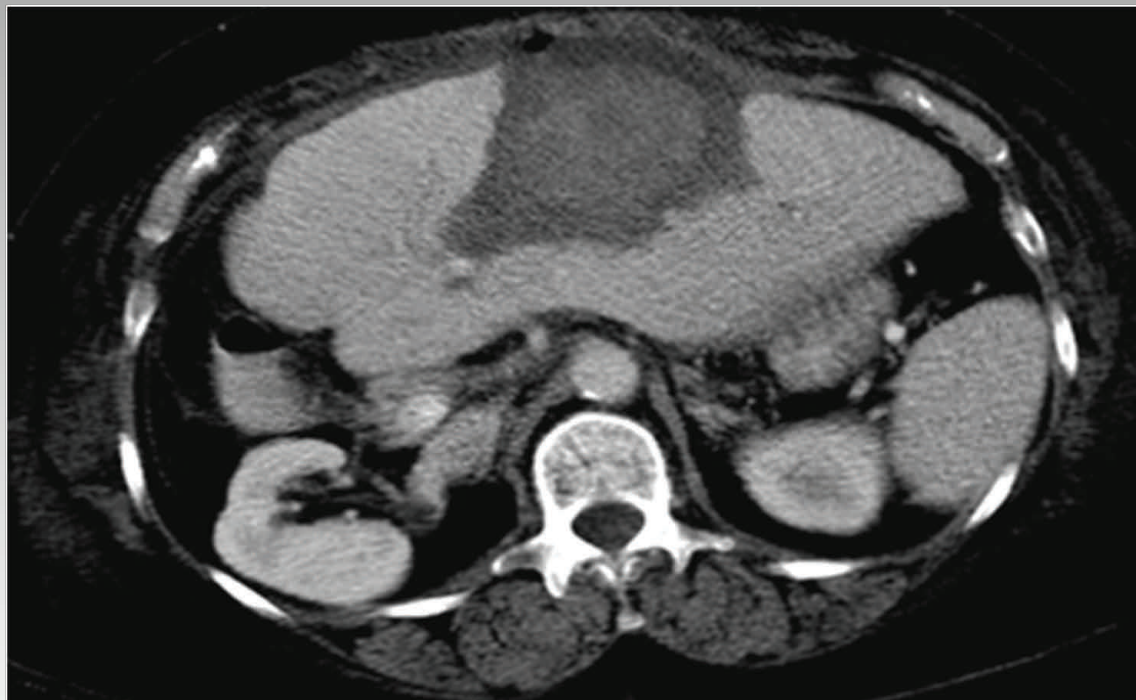


# Proceedings of ARMC Research Conference



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# Proceedings of ARMC Research Conference Vol. 5

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## - Preface -

June 4, 2010

It is my pleasure to welcome you to Arrowhead Regional Medical Center's Fifth Annual Research Day. When compared to our inaugural event in 2006, this year's Research Day has seen the number of submissions increase five-fold. In addition, we have seen participation rise from a handful of residents, to today where every ARMC residency program is represented.

I encourage you to read through the Proceedings and engage the various authors in discussion. Perhaps some of these submissions will provide inspiration for future studies and projects. My thanks to the many talented residents and supportive faculty whose commitment is evidenced in the work contained between these pages. As always, a special debt of gratitude is owed Dr. Edward Lee. It was his idea to start our Annual Research day when he trained as a Transitional Year resident here at ARMC. His steadfast dedication and inexhaustible enthusiasm has allowed this annual event to grow to its current scope.

**David Lanum, M.D.**  
**Co-Editor**



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## OVARIAN TORSION

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Ovarian torsion accounts for 2.7% of all surgical emergencies and can occur in all age groups.<sup>1</sup> It is an uncommon finding in childhood and can be difficult to distinguish clinically from other causes of an acute abdomen. Urgent diagnosis may make it possible to rescue a viable ovary by untwisting the pedicle. We present a case of ovarian torsion in a previously healthy adolescent patient. The case will be discussed with an emphasis on the diagnostic options and findings.

1. Hibbard, LT. Adnexal torsion. *Am J Obstet Gynecol* 1985; 152:456.

## TAKAYAS ARTERITIS: A CASE PRESENTATION

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Takayasu's arteritis is a disease characterized by the inflammation of the aorta and other major arteries. The cause of the inflammatory process remains unknown but is thought to involve autoimmune processes. The disease is a rare type of vasculitis that generally affects women under the age of 40. This presentation reviews a case study of a 37-year-old woman diagnosed with Takayasu's Arteritis. It includes an overview of the etiology, clinical presentation, diagnostic criteria and management of the disease.

### TREATMENT OF SEVERE *P. FALCIPARUM* MALARIA WITH ARTESUNATE – REPORT OF THE FIRST CASE IN THE WESTERN UNITED STATES

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Severe malaria, caused by *Plasmodium falciparum*, is a life threatening disease that causes between 1-3 million deaths each year worldwide. The standard treatment in the United States for severe malaria is intravenous quinidine, which has many side effects, the most severe being significant cardiotoxicity. In addition, quinidine is not always readily available in pharmacies in the United States. Artesunate, an artemisinin derivative, has been used extensively outside of the United States and is shown to clear parasitemia effectively, dissipate fever quickly, and also decrease mortality. Recently, artesunate has become available through the Center of Disease Control by physician request. Here we report the first case of severe *Plasmodium falciparum* malaria in the western United States, successfully treated with artesunate. The patient's initial level of parasitemia seen on Giemsa blood smear was 30-40% (greater than five percent is considered severe). Three days after the artesunate treatment, she had complete resolution of her symptoms and laboratory abnormalities, including a parasite level of zero percent. She experienced no side effects. Artesunate should be considered as the drug of choice to treat severe *P. falciparum* malaria in the United States.

### EVALUATION OF MALARIA CONTROL MEASURES, AND EFFICACY OF ITS TREATMENT IN PEDIATRIC PATIENTS AT SHIRATI KMT HOSPITAL, TANZANIA.

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The World Health Organization estimates that one Tanzanian child dies of malaria every five minutes. In this study, medical records of 170 pediatric malaria patients were reviewed, a bed net survey of 25 families was conducted, and the pediatrics department chair at Shirati KMT hospital was interviewed. Goals of this study were to evaluate malaria control measures at the hospital, assess the efficacy of malaria treatment by determining what percentage of patients—under the age of five—developed anemia secondary to malaria, and make recommendations to reduce pediatric malaria cases. We hypothesized that lack of health education within the community, poor socioeconomic status, and scarce medical resources have led to the endemic. The hospital was found to not have any malaria prevention programs. Exhaustion of funds forced termination of free distribution of insecticide-treated bed nets. Our analysis showed that 59% of pediatric malaria patients developed anemia secondary to malaria with a recurrence rate of 7%, and 20% of these patients succumbed to death. Furthermore, shortage of blood deterred its transfusion into malaria induced anemic patients, even though transfusion was recommended by the physicians. In addition, the hospital does not have the resources to treat severe malaria cases intravenously. The bed net survey showed that 72% of the families did not have a bed net due to lack of education and poverty. To alleviate malaria in Shirati and the surrounding villages, we recommend creating malaria prevention posters, subsidizing bed-nets distribution program, and appointing health educators to teach malaria prevention. It is imperative to educate families about completing the drug regimen and discourage herbal treatments. The long term goals should include opening a blood bank facility and acquiring resources for intravenous treatment in severe malaria cases. This retrospective study gives the hospital a direction on how to combat malaria. It also reinforces steps that must be taken by regional hospitals in rural Africa and the developed nations to mitigate malaria. This study was supported by Touro University, California, College of Osteopathic Medicine and the non-governmental organization, Global Physicians Corps.

## ORLISTAT: A REVIEW OF LIVER-RELATED MEDWATCH ADVERSE REPORTS

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### Background:

Orlistat is a medication available to treat obesity. It prevents the absorption of dietary fat by inhibiting gastrointestinal lipases. Reports have been submitted to the FDA associating orlistat with serious hepatic damage, including a case of death and a few cases of liver failure requiring liver transplantation. The purpose of this study was to review the orlistat MedWatch adverse reports so clinicians can make a more informed decision when prescribing orlistat.

### Methods:

26,277 reports on adverse effects of orlistat were submitted to the FDA between Jan 1, 1989 and Oct 23, 2009. The majority of the side effects reported have been gastrointestinal symptoms including abdominal distension, cramps/pain, nausea, vomiting, flatulence, and steatorrhea. We requested the individual safety reports of hepatic injury cases that were determined by the FDA to be directly linked to orlistat; the 33 reports we received were reviewed in this study.

### Results:

Of the 33 reports, 29 were females, 3 males, and 1 gender not recorded. The mean age was 44 years and mean BMI was 30.1 kg/m<sup>2</sup>. In 31 reports, orlistat was listed as the primary suspect and in 2 it was listed as the secondary suspect with atorvastatin as the primary. The total daily dose ranged from 120 mg to 360 mg with 46% using 120 mg TID. The average duration of therapy was 76 days. Of the 57% of the reports recording the AST, ALT, and total bilirubin values, 89.5% had elevated AST, 94.4% had elevated ALT, and 83.3% had elevated total bilirubin. 88% of the patients were hospitalized with abnormal LFTs and/or symptoms such as icterus, malaise, pruritis, emesis, dark urine, and/or clay colored stool. Of these, 1 patient died, 4 required liver transplantation, and 19 recovered with supportive care and discontinuation of orlistat; the final outcome was unknown in 5 patients. Of note, none of the 33 patients had a pre-existing hepatic condition listed.

### Conclusion:

Clinicians should be aware that serious liver-related adverse events possibly secondary to orlistat use have been reported to the FDA. Healthcare providers need to be cognizant of this when prescribing and monitoring patients on orlistat. If a patient develops symptoms consistent with liver impairment, discontinuation of orlistat or close monitoring might be considered.

## ACUTE ONSET OF LHERMITTE-DUCLOS DISEASE: CASE REPORT

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### **Introduction:**

Adult onset Lhermitte-Duclos (LD), or Dysplastic Cerebellar Gangliocytoma, is a hamartoma considered pathognomonic for Cowden disease. Classically, LD has a progressive and insidious onset, ranging from a few months to more than 10 years, and may cause symptoms and signs of mass effect in the posterior fossa, hydrocephalus, brain herniation, and death, if left untreated. In this case-report, we present a patient having rapid neurological deterioration from acute onset of LD.

### **Methods:**

The present account gives a single report of a pathologically proven case of LD disease with an acute presentation of symptoms, and a brief review of the recent literature.

### **Case:**

A 22-year-old right-handed Hispanic female presented to the Emergency Department at Arrowhead Regional Medical Center (Colton, CA) with an abrupt onset of diplopia, dysarthria, dysphagia, and gait instability with a left-sided preference, all of which developed within the span of 6 hours. She described a three day history of severe headache accompanied by nuchal rigidity and photophobia. Additionally, the patient described a two-week history of flu-like symptoms, a five-month history of arthralgia, myalgia, nosebleeds, a 40-pound unintended weight loss, and multiple new skin lesions. Physical exam was notable for dysarthria, nystagmus, ataxia, and bilateral dysmetria with predominantly left-sided findings. A non-contrast enhanced CT scan of the head revealed diffuse attenuation in the left cerebellum and mild ventricular dilatation. Lumbar puncture showed no organisms. MRI of the brain revealed salient 'tiger stripe' appearance of the left cerebellar cortex and effacement of the 4<sup>th</sup> ventricle. MRI findings were strongly suggestive of Dysplastic Cerebellar Gangliocytoma. The patient subsequently underwent a suboccipital craniotomy and gross total resection of the lesion. The tumor histology showed distortion of normal cerebellar architecture with dysplastic ganglion cells, loss of purkinje cells, atrophy of the white matter, and expansion of the cerebellar folia. Findings were consistent with the diagnosis of adult onset LD.

### **Discussion:**

Lhermitte-Duclos or Dysplastic Cerebellar Gangliocytoma is a rare cerebellar neoplasm. Most patients present with an insidious onset of symptoms including obstructive hydrocephalus, secondary increased intracranial pressure, visual disturbances, cerebellar ataxia, and cranial nerve palsies. Although LD is a slowly progressive tumor, its location in the posterior fossa carries the risk of neurological deterioration from mass effect on the pons and midbrain, causing herniation, coma, and death. LD disease has a strong genetic association with Cowden's Syndrome, the prototypical PTEN hamartoma tumor syndrome. Patients with this autosomal dominant phakomatosis have a predisposition for neoplasms involving the breast, thyroid, colon, genitourinary, endometrium, skin, and

## CHARACTERISTICS AND TREATMENT OUTCOMES OF SPINAL EPIDURAL ABSCESS: A COUNTY HOSPITAL EXPERIENCE OF 100 CASES OVER 8 YEARS

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### Intro:

Spinal Epidural Abscess has always been a rare phenomenon with devastating consequences. While they comprise only 1 of 20,000 admissions each year<sup>1</sup>, its incidence has been increasing steadily over the years. The challenge of this problem is twofold. Firstly, the ambiguity of the presenting symptoms makes for a challenging diagnosis and secondly, when a diagnosis is established there is still considerable controversy regarding treatment methodologies.

Moreover, the increasing prevalence of community acquired MRSA infections since the early 2000s necessitates a re-evaluation of how this effects long term treatment of Spinal Epidural Abscesses. In our study, we retrospectively analyzed 100 patients treated at a County Hospital in California over a 10 year period starting in 2000, with a diagnoses of Spinal Epidural Abscess. Our hospital is a county hospital with 456 beds and serving the population of San Bernardino County in Southern California. The goal of the study was to see if surgical debridement of abscesses differed significantly when compared to long term antibiotic therapy alone, with a special focus on community acquired MRSA. We also wanted to see what effect the various durations of antibiotics had on the cure rate of SEA, as well as CRP and ESR as markers for therapy duration. This study is one of the largest single center studies to date in the United States.

### Methods:

After obtaining approval from the IRB at Arrowhead Regional Medical Center in Colton, a list of 100 patients were obtained with a diagnosis of Spinal Epidural Abscess that had been treated at the medical center over the last 10 years, starting in the year 2000. The electronic records of the listed patients were then reviewed and data including radiographic evidence of spinal epidural abscess, microbiology, as well as CRP and ESR data were extracted along with the follow up interval time and antibiotic regimen and duration times.

### Results:

Although this study is an ongoing project, some preliminary conclusions can be made from existing data. The ambiguity of the presenting symptoms for a Spinal Epidural Abscess makes for a challenging diagnosis of this condition. The classic triad of SEA symptoms including low back pain, fever and neurologic deficits are not seen in a significant amount of patients, and therefore prompt management is often times delayed in these individuals<sup>1-5</sup> leading to poor outcomes. However, even when a diagnosis is made, monitoring the efficacy of treatment in most studies have been based on change in neurologic status or death, which is a big limitation, especially in patients who are considered Grade I (no neurologic deficits) at diagnosis.

Current treatment recommendations consists of a combination of medical treatment with broad range antibiotics as well as surgical drainage<sup>(1-4)</sup>. Spinal epidural abscesses are more commonly seen in patients with co morbidities such as diabetes, HIV, IV drug abuse or spinal surgical intervention such as anesthesia with the most common organism isolated being *Staphylococcus aureus*<sup>1-5</sup>, and more recently community acquired MRSA<sup>6</sup>. The key to the prevention of permanent neurological deficits from this damaging disorder is early diagnosis and treatment, including monitoring ESR and CRP.

## GASTROINTESTINAL STROMAL TUMOR: CASE REPORT OF A 55-YEAR-OLD AFRICAN AMERICAN MALE WITH A GI BLEED STATUS POST ESOPHAGOGASTRODUODENOSCOPY

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This is a case report of a 55-year-old African American male with a past medical history of Gastrointestinal Stromal Tumor (GIST) in 2007 who presented to the General Surgery team after a post-Esophagogastroduodenoscopy (EGD) GI bleed. At EGD, a stromal tumor was visualized at the distal body of the stomach and a vessel was seen to be actively bleeding. At the time, the patient's hemoglobin and hematocrit dropped to 7.1 and 23.4 respectively and the patient began to experience hematemesis. The patient was taken to the operating room where emergent partial gastrectomy and Billroth-II gastroenterostomy was performed and a 12 X 9 X 7 cm Gastrointestinal Stromal Tumor was removed. GISTs are quite rare and consist of 1% of primary GI tumors. GISTs universally express the CD117 marker and usually express a mutation in the KIT gene. GISTs most commonly affect the stomach (50 to 60%), and sometimes the ileum/jejunum (25-30%). The pathology of the resected mass was CD 117 positive and had an epitheloid pattern exhibiting less than 5 mitosis per 50 high power field. The malignant potential of a GIST is correlated with its size and mitotic rate. The GIST removed from this patient was considered "highly aggressive" by its size alone, of greater than 10 cm. The aggressive potential of GISTs makes it imperative that they be addressed in a timely manner.

## ARMC PEDIATRIC ORIENTATION

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**Objective.** To assess if an Arrowhead Regional Medical Center (ARMC) Pediatrics Orientation was effective in improving residents' practical knowledge in the areas of Newborn Nursery, Pediatric Wards, and Pediatric Clinic.

**Material and Methods.** A pediatrics orientation session was provided to residents of ARMC. A multiple choice knowledge-based questionnaire was administered before and after the orientation session.

**Results.** Pre-orientation knowledge scores were higher in the area of Pediatric Clinic versus Newborn Nursery and Pediatric Wards. Residents demonstrated pre-test lower scores and lowest improvement in Pediatric Wards versus the other two areas. Repeated measures analysis (paired *t*-test) revealed significant pediatrics knowledge improvement after the orientation intervention.

**Conclusions.** Pediatrics orientation sessions may be beneficial in improving practical knowledge among ARMC residents, and these may further benefit from interventions emphasizing content in Pediatrics Wards. Orientation sessions provided for specific rotations may be helpful in teaching and improving residents' knowledge in different practical areas.

## SMOKING CESSATION: CAN PHYSICIANS DO MORE?

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**INTRODUCTION:** Tobacco use causes more than 440,000 deaths per year. A large majority of smokers want to quit and they often seek assistance from their primary care physician. There are several barriers to why patients fail at their attempt at smoking cessation. Physicians must penetrate these barriers and make a stronger effort to increase the likelihood of success. Can physicians indeed make a difference by increasing their effort and changing their approach?

**METHODS:** Participants were taken from the smoking cessation class at Arrowhead Regional Medical Center. These participants (total of 25) attended a four week seminar and received a combination of Zyban and nicotine replacement (nicotine transdermal patch). They were randomly divided into two groups, control (N=12) and experimental (N=13). The control group was contacted via telephone at weeks 4, 8, and 12 to assess their success rates. The experimental group was also contacted at 4, 8, and 12 weeks, but also on a weekly basis to provide encouragement and increase confidence.

**RESULTS:** It was determined that the study was significant as the *p*-value was calculated to be 0.41. The success rates of the experimental group were much higher than the control group at all intervals during the study. After 12 weeks, 77% of the experimental group was smoke-free compared to only 42% in the control group.

**DISCUSSION:** The study limitations were a small sample size and a non-standardized timeline of medication disbursement to the participants. These limitations could have easily affected the outcome, but the study results provide evidence that increased physician involvement has a positive effect on smoking cessation.

**CONCLUSION:** The lesson of this study goes beyond smoking cessation and can be applied to all aspects of patient care. Increased physician involvement outside of the exam room will improve not only patient care, but patient satisfaction as well.

## CAVERNOUS ANGIOMA IN THE CAVERNOUS SINUS: A CASE REPORT

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A case report presentation of a rare location for a vascular tumor; a cavernous angioma in the cavernous sinus. A 45 year old male with subacute onset of symptoms included left sided constant headache, along with double vision, and clinical presentation of a complete sixth nerve palsy, a partial third nerve palsy, and partial fifth nerve palsy. Neuroradiologic investigation revealed an extra axial cavernous sinus mass, leading to a suspected diagnosis of meningioma. Surgical excision and histopathologic findings indicated the diagnosis of a rare entity in this region, a cavernous angioma. Included is a literature review of similar case reports, their managements, outcomes, and the neurosurgical challenge placed when attempting decompression of such.

## MYASTHENIA GRAVIS: AN ACQUIRED, PROGRESSIVE, AUTOIMMUNE DISEASE

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ID: 51 year old Caucasian female

HPI: This patient has a long history of myasthenia gravis (MG), dating back over 20 years. The disease first presented on a strenuous mountain hiking trip, during which the patient became unexplainably weak and fell. She could not gain control of her legs until after several minutes of rest. She was diagnosed with MG soon after, and within a year underwent thymectomy.

Even though her initial symptoms were mainly weakness in her lower extremities, in later exacerbations she mostly presents complaining of neck muscle weakness, diplopia, dysphagia, dysarthria, and pain stemming from co-morbid neck trauma. She does not normally present with the classic signs of ptosis, and she rarely shows respiratory deficits.

Complicating the picture, the patient was involved in a motor vehicle accident causing severe trauma to her neck. She has undergone several surgeries including cervical spine fusion and fixation. As a consequence, she has significant deficits in her range of motion and suffers from significant chronic pain. Importantly, when she has a myasthenia exacerbation she loses strength and some of the fine motor control in her neck muscles and this makes her chronic cervical pain much worse and also raises her anxiety level. She typically requires opioids for pain control and benzodiazepines for anxiety. The use of opioids possibly exacerbating respiratory complications, including respiratory depression, is an obvious concern, but this has been monitored closely and she has not had significant respiratory complications in recent years.

In spite of the thymectomy and treatment, the disease progressed for nearly 10 years, culminating in a hospital admission for myasthenic crisis requiring intubation and a long ICU stay in 1999. The patient was eventually placed on a regimen which added the immune system modulating drug azathioprine to her regimen of prednisone and pyridostigmine, which made a remarkable improvement in her symptoms and which successfully kept her disease mostly in remission for nearly 10 years.

Of particular concern, though, is that in the last two to three years, it appears the treatments are becoming less and less effective in controlling the disease. Admissions for myasthenia exacerbations are becoming more and more frequent and are now occurring on an almost monthly basis.

An under reported and under appreciated aspect of the disease is the psychological and personal long term impact the disease wages on the patient and her family. The patient's quality of life is directly related to control of the disease symptoms, anxiety level, and pain management. The toll of the suffering and the additional burden of the logistical and financial burden of the treatments over decades is considerable.

Because of the progression of the disease and the slowly escalating rate of admissions in spite of aggressive treatment, there is concern about the patient's long term prognosis.

## PRIMARY HEPATIC SMALL CELL CARCINOMA: A CASE REPORT

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Small cell carcinoma is primarily a disease of the lung and is rarely found in extrapulmonary sites. Primary disease in the liver is exceedingly rare, and less than a dozen cases have been reported in the literature<sup>1-8</sup>. This is a case of a 55 year old male who presented with signs of end stage liver cirrhosis and suspected spontaneous bacterial peritonitis. However, paracentesis showed hemoperitoneum and subsequently, an open laparotomy showed a nodular liver surface with multiple necrotic bleeding tumors. Histopathology of the biopsied sites showed a small cell carcinoma of the liver. Autopsy failed to show oncologic disease beyond the liver; notably, the patient had near normal lungs. This case therefore, is one of the few cases that have presented as a primary hepatic small cell carcinoma.

## SODIUM ACETATE AS MAINTENANCE FLUID IN CRITICALLY ILL TRAUMA PATIENTS: A RETROSPECTIVE REVIEW

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The objective of this study is to look at the use of sodium acetate as part of the fluid resuscitation regimen in critically ill trauma patients. The primary purpose of the study is to analyze the effect of sodium acetate on hemodynamics. Secondly we looked at the effects on hyperchloremic metabolic acidosis.

The study arm was comprised of patients who received sodium acetate between March 2005 and December 2009. A control arm was created on the basis of matching three pre-treatment variables: injury severity score (ISS), pH (+/-0.03) and base deficit (+/-3). Retrospective chart review was performed of patients in both arms. Blood pressure, arterial blood gas data and chemistry values were recorded for the time points of -6, -1, 0, 1, 6, 12, 24, 48, and 72 hours. Patients younger than 16 years of age at time of discharge, those who received concurrent sodium bicarbonate, who expired within 24 hours of admission, and those who had suffered significant burn injury were excluded from the study.

Here results of our study are presented and implications of using sodium acetate as part of the fluid resuscitation regimen in critically ill trauma patients are discussed.



## ANTIMICROBIAL STEWARDSHIP: DE-ESCALATION OF LINEZOLID AND PIPERACILLIN/TAZOBACTAM

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**Objective:** The overuse of antibiotics ultimately leads to an increase in drug resistance. The focus of this study will be to step down therapy from broad spectrum piperacillin/tazobactam (P/T) and narrow spectrum linezolid (LNZ). The purpose of this study is to evaluate cost and clinical outcomes of de-escalation of LNZ and P/T through pharmacists intervention.

**Method:** A two phase (Phase I and Phase II) trial will take place over the course of 100 days. Phase I data consists of patients on LNZ or P/T that may have benefited from de-escalation of antibiotics during a sixty day period. Phase II data consists of patients on LNZ or P/T that may have benefited from de-escalation of antibiotics and successful interventions from a pharmacist to de-escalate antibiotics during a forty day period.

**Results:** Phase I and II results will be compared.

**Conclusion:** The results will be discussed.

## CONCURRENT PERTUSSIS AND INFLUENZA A (H1N1) INFECTIONS IN A 28 DAY-OLD INFANT

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**Introduction:** The novel influenza A (H1N1) virus is a significant cause of morbidity and mortality in pediatric populations. Those under the age of 2 years are at high risk of requiring hospitalization and developing influenza-related complications, including bacterial co-infection. Before vaccination was available, *Bordetella pertussis* was the leading cause of death due to communicable disease among children under 14 years of age in the United States, with 10,000 deaths annually. We present a case of a previously healthy 28 day old infant diagnosed with influenza A (H1N1) and *Bordetella pertussis* co-infection.

**Case Report:** A 28 day old previously healthy, full term, appropriate-for-gestational age, non-immunized male presented with a ten day history of progressively worsening non-productive cough, yellow eye discharge and a fever of 101 degrees Fahrenheit. On exam, the patient had a heart rate of 150 beats per minute and respiratory rate of 38 breaths per minute. Initial laboratory workup was remarkable for white blood cell count of 22,600 cells/mm<sup>3</sup> with a predominance of lymphocytes (71%). During the hospital stay, the patient displayed several episodes of emesis, intermittent oxygen desaturation and development of perioral cyanosis during coughing episodes. *Bordetella pertussis* infection was suspected on the basis of marked leukocytosis with lymphocytosis, the patient's age, history of cough and lack of immunizations. Direct fluorescent antibody (DFA) nasopharyngeal swabs for *Bordetella pertussis* were ordered and found to be negative on three separate occasions. Culture for *B. Pertussis* was also negative. However, the Polymerase Chain Reaction (PCR) analysis was found to be positive.

A screen for influenza and H1N1 was also performed. The influenza A and B DFA screen test was negative. However, the H1N1 PCR was found to be positive.

**Discussion:** Screening for H1N1 influenza A can be achieved through the Rapid Influenza Diagnostic test (RIDT) or DFA assay. However, these rapid, point-of-care methods have suboptimal accuracy and do not distinguish between seasonal influenza A and H1N1 subtypes. Though both tests are highly specific, a negative result would not exclude influenza infection. For these reasons, it is commonly recommended that confirmatory testing for H1N1 be performed through real time reverse transcriptase polymerase chain reaction (RT-PCR) or viral culture. *Bordetella pertussis* infection poses a similar diagnostic challenge. Direct testing of nasopharyngeal secretions by DFA is rapid, but only moderately reliable. Isolation of *B. pertussis* in culture has a variable sensitivity of 15-80%. Polymerase Chain Reaction of nasopharyngeal wash specimens has a sensitivity of 94%, a specificity of 97% and a turn-around time of 2 days. Infants suffering from independent or concomitant H1N1 and *Bordetella pertussis* infections may benefit from time-sensitive treatment. However, reliable confirmatory testing for these illnesses often requires several days. This dilemma elucidates the importance of placing clinical suspicion over confirmatory testing and starting empiric treatment early. The described case highlights the need for vigilance when treating influenza-like illnesses, including H1N1, as bacterial co-infection can occur.

## RISK OF REFRACTIVE PATHOLOGY AFTER SPONTANEOUSLY REGRESSED ROP IN EMMETROPIC PATIENTS

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**PURPOSE:** To evaluate the development of refractive error abnormalities after a normal first examination in children with spontaneously regressed retinopathy of prematurity (ROP).

**METHODS:** Two hundred twenty-six children with a history of spontaneously regressed ROP who had a cycloplegic refraction prior to 18 months of age were examined by a pediatric ophthalmologist. Children with a history of threshold ROP, strabismus, or a structural abnormality of the eye were excluded. A normal cycloplegic retinoscopy was defined as plano to less than +3.5 diopters of hypermetropia, less than +1.50 of symmetric astigmatism, and no anisometropia greater than 1.5 diopters in any meridian.

**RESULTS:** Of the 226 children, 87 had a second examination and cycloplegic refraction at a mean of 2 years after the initial visit. In 63 of the children, the second examination and refraction remained normal. Three (3.4%) children had significant refractive error and were treated with spectacles: two had anisometropia and one had myopic astigmatism. Twenty-one had symmetric low magnitude myopia that did not warrant treatment.

**CONCLUSION:** Children with spontaneously regressed ROP and no significant refractive error on cycloplegic retinoscopy at first follow-up examination have a risk of developing ametropia that is similar to that of the general population. Such children can likely be observed with a verbal vision screening in the pediatrician's office at 3 to 4 years of age.

## POSTERIOR REVERSIBLE ENCEPHALOPATHY SYNDROME IN AN ECLAMPTIC PATIENT

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**Abstract:** We present a case of Posterior Reversible Encephalopathy Syndrome in an unknowingly pregnant female presenting to the emergency department status-post generalized tonic-clonic seizure activity.

**Introduction:** Posterior Reversible Encephalopathy Syndrome (PRES) is a disease process most commonly encountered in patients with hypertensive encephalopathy, eclampsia, or immunosuppressive therapy. Although rare, it can be fatal if it is not promptly diagnosed and treated. The general presentation consists of headache, altered mental status, visual changes, and seizures. The etiology of this disease most likely results from two abnormalities: a disruption in cerebral autoregulation as well as endothelial dysfunction. These vascular irregularities often lead to the characteristic bilateral hypodensities seen in the parietal and occipital lobes on a head CT. Adequate treatment of the hypertensive encephalopathy minimizes the morbidity and mortality of this disease.

**Discussion:** A 27-year old obese African American female presented to the emergency department in an apparent post-ictal state after a witnessed seizure by her grandmother. The patient had woken up with a low grade fever and headache that morning. Although slightly confused, she was coherent enough to refuse submission of a urine sample for a pregnancy test. She and her grandmother, however, stated undeniably that she had received surgery to make her "sterile" and could not be pregnant. Her presenting blood pressure was 175/112, and she had a non-focal neurologic examination. Her abdomen was obese, soft, and non-tender. The initial evaluation consisted of basic laboratory studies, a head CT, and a lumbar puncture. The head CT was read by the radiologist as having bilateral, symmetrical, posterior hypodensities consistent with PRES. Shortly after arrival, the patient began to have tonic-clonic seizure activity which responded well to ativan. During a post-ictal state, urine was obtained and the dipstick tested positive for pregnancy. A rapid bedside ultrasound was performed, and a large intrauterine fetus was visualized. With a diagnosis of eclampsia, IV magnesium and hydralazine were administered. The OB/GYN team was immediately notified, and the patient was taken emergently to the operating room where the c-section proceeded uneventfully. The patient and the infant were both discharged to home on postoperative day 10.

## RECURRENT PNEUMOTHORACES AS A COMPLICATION IN A PATIENT WITH IDIOPATHIC LIPOID PNEUMONIA

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Lipoid pneumonia is a rare pulmonary disorder resulting from exogenous inhalation of lipid materials or endogenous deposition of fat in the lung tissue. Its diagnosis is difficult as there are no pathognomonic imaging studies or serological tests available. Here we report the case of a patient with recurrent pneumothoraces and underlying lipoid pneumonia found incidentally on lung biopsy. Since there was no strong history of lipid exposure or endogenous mechanism, it was diagnosed to be idiopathic. To our knowledge, this is the first reported case of idiopathic lipoid pneumonia that presented with recurrent pneumothoraces.

## ARE HEALTH CARE PROVIDERS CLEARLY COMMUNICATING THE RISKS OF OBESITY AND BENEFITS OF EXERCISE AND DIET TO THE PATIENT POPULATION?

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There is an abundance of confusion regarding weight loss, dieting, and exercise in our country. Discussions are being held in every doctor's office in the country but somehow a clear message is not being received. The media present information that is conflicting about what people should eat, how much they should exercise, and which ways are best to lose weight. There is an ever-increasing epidemic of obesity and obesity related health problems. It is now estimated that over 30% of the United States population is obese. In the middle of the misinformation mayhem is the patient of the Primary Care Provider. Health care providers often have little to no training in nutrition, physical training, dietary management, or exercise physiology. These inconsistencies bring us to ask the question; Are health care providers clearly communicating the risks of obesity and benefits of exercise and diet to the patient population? Methods: Two surveys were distributed, one to the health care providers of Arrowhead Regional Medical Center's Family Practice Department, and another randomly given to patients at McKee Family Health Center. The providers had 10 questions aimed at discovering the comfort level and the frequency at which they intervened with patients regarding diet and exercise. The patient survey had twelve questions that asked the frequency in which providers brought up issues of weight, exercise, or diet. Other aspects of patients' satisfaction and amount of physical activity were also assessed. Results: On average, providers feel as though issues of obesity are frequently addressed and are generally comfortable with weight loss management whereas the majority of the obese patients state that providers are not as active in managing obesity related issues as they indicate on the survey. It is also seen that obese patients tend to be more neutral or dissatisfied with diet, exercise, and current weight compared with those with a lower BMI. Lastly, the clinic being surveyed had an obesity prevalence of 45% contrasted to the national prevalence of 32%. Discussion: The trends for obesity are still on the rise in our country and it would seem are particularly prevalent in our patient population. A large disparity exists between what health care providers believe they are doing and what patients perceive is being addressed. More energy needs to be placed in education on both sides of this issue.

## **RADIOGRAPHIC PRESENTATIONS AND PATTERNS IN HOSPITALIZED PATIENTS INFECTED WITH THE NOVEL H1N1 INFLUENZA VIRUS**

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Using the hospital's epidemiologic and the medical imaging PACS databases, we attempted to determine the radiologic manifestations of the novel H1N1 influenza virus in hospitalized patients at Arrowhead Regional Medical Center during the 2009 pandemic.

Out of a total of 109 H1N1 patients, 86 (79%) underwent chest radiography, of which 47 (55%) had abnormal radiologic findings. The 22 patients not imaged were either discharged from the ER or pregnant. The vast majority (78%) of the H1N1 confirmed patients were hospitalized. Of the 24 patients discharged from the ER, 23 had either negative chest radiographs (10), or did not undergo imaging (13).

The most common chest radiograph findings were interstitial (47%) and consolidated (45%) opacities which were frequently bilateral (66%) and involved three or greater (40%) lung zones. Pneumothoraces (4%), pleural effusions (13%), and abscesses (4%) were less commonly seen. Twenty-two patients underwent CT scanning, with the most common finding of multifocal ground glass opacities (73%)

Eleven (13%) of the hospitalized patients had major adverse outcomes, which were intubation and death. Six (55%) of these patients had negative or mild CXR findings involving two or less zones on admission, with a rapidly progressive pneumonia that often resulted in respiratory failure and acute respiratory distress syndrome.

The H1N1 virus presented with a wide range of chest radiographic findings, from normal to a typical viral pattern that either resolved or progressed to a fulminant multifocal pneumonia.

## AUTOIMMUNE HEPATITIS: A CASE REPORT

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Autoimmune hepatitis (AIH) is an idiopathic hepatitis characterized by inflammation of the liver, presence of autoantibodies and evidence of increased gamma globulin in the serum. This case report describes a female patient with a past medical history of hypothyroidism who presented with sudden onset of abdominal pain, severe jaundice and markedly elevated liver transaminases, with negative history of alcohol or drug abuse. Blood tests were negative for viral hepatitis and ANA and positive for anti-SMA. Liver biopsy showed grade 3 / 4 acute and chronic active hepatitis and early bridge fibrosis. The patient was treated with prednisone and responded well.

## EVALUATION OF SINGLE FIELD NONMY- DRIATIC FUNDUS PHOTOGRAPHY AND SPECTRAL DOMAIN OPTICAL COHERENCE TOMOGRAPHY AS A SCREENING METHOD FOR DIABETIC RETINOPATHY

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### Purpose:

The goal of this study is to compare a screening system for diabetic retinopathy (DR) and diabetic macular edema (DME) using retinal photography combined with optical coherence tomography (OCT) to a clinical examination by a trained ophthalmologist.

### Methods:

A cross-sectional observational study was conducted on 36 diabetic patients (72 eyes) at Riverside County Regional Medical Center from June 2009 to October 2009. Three 45°, fovea-centered, single-field nonmydriatic photographs (Zeiss Visucam Pro NM), and one macular OCT scan (Zeiss Cirrus HD-OCT) using the 512x128 scan pattern was taken of each eye. The imaging results were read remotely by an ophthalmologist (FP) to screen for the presence of DR, vitreous hemorrhage, and DME and compared with a dilated clinical exam performed by a retina fellow (KT).

### Results:

The sensitivity and specificity of using single-field nonmydriatic photographs with OCT for detecting DR was 75% and 93% ( $k=0.68$ ,  $P<0.001$ ). Single-field nonmydriatic photographs with OCT yielded a sensitivity and specificity of 33% and 95% ( $k=0.25$ ,  $P=0.041$ ) for detecting DME. Fundus photos were inadequate in 13 eyes (18%), and OCT was inadequate in 10 eyes (14%).

### Conclusion:

Single-field nonmydriatic fundus photography combined with OCT may be useful in screening for diabetic retinopathy, showing substantial agreement with the clinical exam. Fundus photography with OCT was less successful in screening for vitreous hemorrhage and DME.

## EFFECTS OF STATINS AND FIBRATES ON CALCULATED NON-HDL CHOLESTEROL LEVELS- PREDICTORS OF CARDIAC RISK (A3)

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Low density lipoprotein (LDL) has been traditionally considered one of the strong predictors for the risk of cardiac events. More recently, an increased emphasis has been placed on the calculation of non HDL cholesterol, which provides a measurement of all atherogenic apolipoprotein B containing lipids, including very low density lipoprotein (VLDL), intermediate density lipoprotein (IDL), LDL and lipoprotein (a). This measure reflects the atherogenic risk not captured by LDL measurement alone, particularly in the context of elevated triglycerides. The objective of this study is to examine the effectiveness of HMG CoA reductase inhibitors (statins) compared to fibric acid derivatives in their ability to reduce non HDL cholesterol levels. This is a retrospective study. Laboratory data for patients being treated for hyperlipidemia are obtained. The LDL levels and the calculated non HDL levels are compared to determine whether therapeutic goals based on NCEP guidelines have been met. Other data elements include: age, sex, therapeutic agent, and co existing conditions. Patient outcomes will be analyzed and presented, and the implications for the overall effect on cardiac risk factors will be discussed.

## UNIQUE PRESENTATION OF WEGENER'S GRANULOMATOSIS WITH PERIAORTITIS

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A 51 year old male with no significant past medical history presented with shortness of breath, chest pain, fever, and one of week of orthopnea. The patient was thought to have congestive heart failure with periaortitis. Symptoms did not improve with therapy and a rheumatologic diagnosis was pursued. The patient was found to have a positive C-ANCA and elevated anti-proteinase 3. A renal biopsy was performed and confirmed a diagnosis of Wegener's Granulomatosis. The patient's symptoms improved with prednisone and methotrexate.

Wegener's Granulomatosis is a vasculitis that predominately affects both the upper and lower pulmonary system and the kidneys; however, it can also affect the nose, throat, ears, eyes and other organs. The three predominate characteristics of the disease are necrotizing vasculitis of vessels, segmental glomerulonephritis and granulomatous inflammation in the upper or lower respiratory tract. The disease process tends to wax and wane and is often misdiagnosed as pneumonia because of the infiltrates seen on chest X-ray. Patients also can present with renal failure in the form of rapidly progressive glomerulonephritis. Since many organs can be affected, the diagnosis can be elusive. The diagnosis is often made by anti-nuclear cytoplasmic antibodies (ANCA) with positive antibodies proteinase 3 or myeloperoxidase. However, despite suggestive laboratory studies a biopsy of the affected organ (usually lung or kidney) is needed to confirm the diagnosis. The treatment involves steroids and a cytotoxic agent such as cyclophosphamide for severe disease or methotrexate for a mild case. Interestingly, this patient presented with periaortitis. After extensive literature review only two other case reports were found of periaortitis. Blockmans et al reported a 42 year old male who had abdominal periaortitis with intramural dissection. The pathology showed necrotizing granulomatous inflammation with necrotizing vasculitis. Fink found extensive abdominal periaortitis within a 45 year old male with a recent diagnosis of Wegener's Granulomatosis. Although Wegener's Granulomatosis is most commonly a small to medium sized vessel disease, large vessels can rarely be affected and must also be considered.

## A RANDOMIZED DOUBLE-BLIND PLACEBO CONTROLLED TRIAL OF SERENOA REPENS (SAW PALMETTO) EXTRACT IN PATIENTS WITH UNCONTROLLED TYPE II DIABETES

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### BACKGROUND

The main purpose of this study was to see if an extract of the saw palmetto plant, when added on to standard therapy, would improve the control of blood glucose levels in diabetic patients. This was a placebo controlled, double blind study at multiple sites. The primary dependent variables were the blood level of glucose and of hemoglobin A1c. Secondary dependent variables were the blood levels of estradiol, testosterone and sex hormone binding globulin. The research objectives were to determine if the extract lowers HA1c levels, and if so, whether changes in steroid hormone levels are correlated with the drop in HA1c level.

### METHODS

The study involves up to 5 sites within the OPTI network over a one year period. Each site enrolled diabetic patients whom were randomly assigned to experimental (320 mg/day of a standard lipophilic extract of saw palmetto dissolved in a vegetable oil) or to a placebo capsule containing a vegetable oil. At Arrowhead Regional Medical Center, 8 Patients were studied over a 6 month period with monthly visits to the clinic to obtain medication refills, to download data from the glucometer, and to fill out compliance forms. Blood samples were collected at the onset, end of 3<sup>rd</sup> and 6<sup>th</sup> months.

### RESULTS

Results are pending in terms of the effects of saw palmetto on glucose and HgA1C levels. Also, the results of how blood levels of estradiol, testosterone and sex hormone binding globulin correlate with changes in HgA1C are still pending. However, a generalized speculation of the patterns of BMI and HgA1c levels can be made without any absolute conclusion. Thus far, the data collected up to 3 months during the study, indicate that the BMI levels remain unchanged while HgA1c Levels have increased overall.

### CONCLUSIONS

Due to the nature of the study (placebo controlled, double-blinded, and still on-going), the final results of the study cannot be discussed or analyzed in detail until the entire research is completed. However, some generalized speculations could be made in terms of the overall BMI and HgA1c patterns seen thus far. The BMI levels have not significantly changed over the 3 month period, however the HgA1c levels tend to show an early indication of an up-going trend. The final results will be made available at the conclusion of the research study. We hope to collect and analyze more data and make definitive conclusions about the effects of saw palmetto on glucose and HgA1c levels and to also correlate the changes in HgA1c levels with levels of estradiol, testosterone, and sex hormone binding globulin.

## PROPOSAL FOR THE CREATION OF A RESIDENT AND STUDENT DRIVEN EMERGENCY DEPARTMENT RESEARCH TASK FORCE.

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Current obstacles, mainly cost and personnel, often limit an institutions ability to perform multiple prospective clinical research trials simultaneously. This program, modeled after Hennepin County Medical Center in Minneapolis, Minnesota, aims to create an emergency department research task force to address those obstacles at Arrowhead Regional Medical Center, Colton, CA, the second busiest emergency department in California, caring for over 125,000 patients annually. The program will serve to provide the 24 emergency medicine residents, all of which are currently required to conduct a research trial during the course of their four program, with the resources needed to conduct large, prospective, meaningful research trials with the potential of adding to the body of literature in their field and, thereby, improving patient care. The task force (TF) will develop over the course of three years and will unveil in three phases. Phase 1 (currently underway) involves recruiting the initial members of the task force, defining the roles of the participants, identifying and educating the participants about the trials to be conducted, and collectively conducting all aspects of clinical research. In Phase 1, the TF will consist of a faculty research director, a resident director from the host institution, and a group of seven medical students from the College of Osteopathic Medicine of the Pacific, Pomona, CA. Students will be asked to sign a 6-month contract of commitment to the program. Under the supervision of the faculty and resident research directors, this team will select approximately 3 to 5 studies currently underway in the emergency department. Each student will staff the emergency department for 4 to 8 hours a week, during which they will actively scout the department for potential study subjects, review the potential participants for inclusive and exclusion criteria, consent the subjects for the trial, collect the data and participate in data analysis and interpretation. Phase 2 will begin in the second year of the program and will involve doubling the number of medical student participants to a goal of 15 and the number of trials to 10. Phase 3 will involve expanding the research task force to include pre-medical students from local colleges and universities, growing the student task force to 30 students with the goal of staffing the emergency department with research assistants 24 hours a day, seven days a week. Student incentives include a letter of participation for their personal file, experience and potential for publication early in their careers, and clinical exposure. The program will be reassessed at the end of each phase and redesigned to address obstacles and limitations as they occur.

## ACQUIRED PUPIL-INVOLVING THIRD NERVE PALSY AS A PRESENTING SIGN OF PREECLAMPSIA

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Preeclampsia may lead to a variety of ocular pathology and symptoms including retinal hemorrhages,<sup>1</sup> macular neurosensory detachments,<sup>2</sup> choroidal hemorrhages,<sup>3</sup> amaurosis, posterior leukoencephalopathy syndrome, permanent blindness<sup>4</sup> and in our patient's case, a third cranial nerve palsy. There are only two published cases of preeclampsia associated third cranial nerve palsy. In both cases the women had a previous diagnoses of preeclampsia at the time of presentation. In contrast, our patient presented for workup in the neuro-ophthalmology clinic with a left ptosis and laterally deviated pupil. We report the case of a pregnant 22 year old African American female with a history of type one diabetes, who at 25 weeks presented with a third nerve palsy of unknown etiology. After unremarkable imaging and an extensive workup revealing increased blood pressure and a history of proteinuria, the patient was suspected to have a third nerve palsy secondary to a new diagnosis of preeclampsia.

## PEDIATRIC UROLITHIASIS: A CASE REPORT OF URETHRAL STONE EXTRACTION IN A 5-YEAR-OLD BOY

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Urolithiasis is a common cause of hospitalization in the United States. While uncommon in children, the incidence of urolithiasis is increasing in the pediatric population. Patients typically present with symptoms of flank pain, restlessness, and hematuria. The recurrence rate is high and if left untreated, the long term complications of recurrent urolithiasis may result in end-stage renal disease (ESRD). The etiology of urolithiasis in children may be due to metabolic, dietary, infectious, or genetic factors. We report a case of urolithiasis in a five-year-old boy with a history of recurrent hematuria. He presented with inability to urinate, penis pain, hematuria, and subsequently a calcium oxalate stone was found in his urethra. The interesting thing to note about this case is the method of stone extraction. The large urethral stone was crushed into several smaller pieces  $\leq 6\text{mm}$  before it could be extracted. In addition, we would like to emphasize the importance of recognizing that in pediatric patients with urolithiasis, the stone is not the disease, but merely a manifestation of an underlying condition that should be worked up aggressively. Children presenting with urolithiasis should receive a comprehensive work-up which includes serum and urine studies, medical imaging, and possibly genetic testing. Treatment should focus not only on acute management, but prevention of recurrent disease.



## BEDSIDE ULTRASOUND IN THE SURGICAL ASSESSMENT OF ACUTE BILIARY DISEASE

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**Introduction:** General surgeons are often called upon to evaluate patients in the emergency department (ED) with acute biliary diseases. Right upper quadrant ultrasound (RUQ-US) imaging may be useful in the management and disposition of these patients. Traditionally, the radiology department has performed RUQ ultrasounds. However, with the increased training of emergency physicians in use of bedside US, it is becoming more common for RUQ-US to be initially performed in the ED with a *formal* RUQ-US performed later by the radiology department. We are interested in finding out if ED bedside RUQ-US is accurate enough to be use alone in surgical decision making. As a screening tool for acute biliary disease, ED bedside RUQ ultrasound has the potential to shorten the time to treatment and to decrease costs.

**Methods:** A retrospective chart review was done on 88 patients who presented to our 456-bed hospital from April 2009 to January 2010 with RUQ pain. These patients received bedside ultrasounds performed by ED providers (attending physicians, resident physicians, and physician assistants) as well as a formal RUQ-US by the radiology department. The objective was to evaluate the sensitivity and specificity of ED bedside US for detection of cholelithiasis, gallbladder wall thickening, and common bile duct dilatation. ED bedside US findings were compared directly to those of the radiology department *formal* ultrasounds.

**Results:** ED bedside RUQ-US sensitivity for cholelithiasis was 90.4% (95% CI 79.8-96.1%), with a positive predictive value of 93.4% (95% CI 83.3-97.9%). ED bedside RUQ-US findings negative for cholelithiasis had a specificity of 84.0% (95% CI 63.1-94.7%) and a negative predictive value of 77.8% (95% CI 57.3-90.6%). Bedside ultrasound was neither specific nor sensitive compared to radiology department ultrasound in determining gallbladder wall thickness or common bile duct dilatation.

**Conclusion:** Overall this study demonstrates both the utility and the limitations of bedside ultrasound for the evaluation of RUQ abdominal pain. Although not as sensitive as radiology department RUQ ultrasounds, when combined with clinical and laboratory assessment, bedside RUQ ultrasounds that are positive for cholelithiasis could potentially help expedite the surgical management of biliary disease. This is especially true at night when our facility and many others do not readily have access to formal radiology department RUQ ultrasounds. With additional training and experience, ED providers could potentially improve their diagnostic skills with RUQ-US. This would lessen the need for a repeated formal RUQ-US and thus will shorten time to treatment and decrease cost.

## A RETROSPECTIVE ANALYSIS OF THE CORRELATION BETWEEN SUBJECTIVE ABDOMINAL PAIN AND INTRA-ABDOMINAL INJURY ON COMPUTED TOMOGRAPHY IN PATIENTS WITH BLUNT ABDOMINAL TRAUMA

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**Study Objectives:** To determine the correlation between a patient's subjective complaint of abdominal pain (AP) after blunt trauma with the presence of objective intra-abdominal injury on multi-detector computed tomography (CT) in an effort to further help risk-stratify patients.

**Study Design:** This is a retrospective and observational study of patients presenting to the Emergency Department at Arrowhead Regional Medical Center between 2005 and 2010 with blunt abdominal trauma. The individual cases will be identified from the hospital's trauma registry. The study protocol will include analysis of the demographic and clinical characteristics, mechanism of injury, associated lesions, subjective complaints of the patient as described in the history of present illness and EMS records, radiographic findings, diagnosis, and subsequent treatment. Inclusion criteria is male and female patients of all ages and ethnicities presenting with blunt abdominal trauma as described by mechanism of injury, subjective abdominal pain, and patients receiving CT scan of the abdomen and pelvis after blunt abdominal trauma. Exclusion criteria are pre-existing abdominal pathology as reported in the patient's history or medical record, recent abdominal surgery within 2 weeks prior to arrival, co-existing penetrating abdominal trauma, altered mental status, alcohol intoxication or illicit drug use, and those patients unable to communicate.

**Background:** The most common mechanism of injury in the United States each year is blunt trauma, which involves a compression or crushing force by direct energy transmission. Those forces can easily damage intra-abdominal viscera if they exceed the specific tissue tolerance limits. Often times it is difficult in trauma to ascertain the extent of intra-abdominal injury a patient has sustained from blunt trauma without objective imaging. Advances in technology have allowed us to quickly investigate for underlining injuries via several modalities including x-ray, ultrasound, CT, and magnetic resonance imaging (MRI) – CT being the preferred imaging in abdominal trauma secondary to its high sensitivity and specificity. According to findings by Atri et al, multi-detector CT accurately reveals surgically important bowel and mesenteric injuries and has a high negative predictive value. However, this doesn't come without its costs, which are often above the Medicare/Medical reimbursement. Unlike with penetrating injuries, blunt trauma leaves many subsequent treatment decisions to the acumen of the clinician. Many times patients, with or without abdominal pain after blunt trauma, will undergo CT, and many of those with actual pain have no correlating intra-abdominal injuries on CT. If we can gain tools to better decipher which patients with pain after blunt trauma have a high probability of intra-abdominal injury, we can save considerable time focusing on other injuries instead of the time required obtaining a CT. In addition, with the rising costs of health care and decreasing reimbursements, considerable costs can be saved by reserving CT scans for those situations in which it is necessary and helps guide one's management.

## A 16 YEAR-OLD MALE WITH ANTICHOLINERGIC POISONING: A CASE REPORT

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Chief complaint: Altered mental status

History of Present Illness: R.P. is a 16-year-old Hispanic male brought into the emergency room via ambulance at 6:50am with a report of altered mental status and distended abdomen after a presumed overdose. The patient was with friends the night prior drinking a tea made from an unknown flower when friends called 911. The patient's friends denied any other drug or alcohol use. EMS arrived at the scene to find the patient sitting on the couch with a reported GCS of 14 and combative, and transported the patient to Arrowhead Regional Medical Center in restraints. The flower from which the tea was made was also brought with the patient. Additional medical information was obtained at the bedside from the patient's mother.

Discussion: In 2008, the American Association of Poison Control Centers reported a total of over 2 million human exposures at 61 centers nationwide, with 11,838 cases involving anticholinergic substances (including both drugs and plants). Several substances, both obtained over the counter and in nature, have anticholinergic properties and are a potential source of toxicity. Jimsonweed, in particular, is a belladonna containing alkaloid plant that is widely available across North America. Poisonings from jimsonweed typically increase in summer and fall, when the plants blossom and are at their peak. It can commonly be found growing along the side of the highway, and is no stranger to the San Bernardino County area. Our case report involves R.P., a 16 year-old Hispanic male brought to the emergency room at Arrowhead Regional Medical Center with altered mental status. Based on the patient's history, clinical exam, and evidence of jimsonweed on EMS arrival, it was evident that his signs and symptoms were secondary to anticholinergic poisoning. Due to the easy availability of jimsonweed in San Bernardino County, anticholinergic poisoning from its ingestion is a rare, but potentially lethal, diagnosis that is important to quickly identify. If properly treated, most patients can be expected to have a full recovery with observation, monitoring, and good supportive care. In particular, temperature monitoring is crucial to prevent lethal hyperthermia. Specific therapies, however, have not been well validated or widely accepted. For example, the use of activated charcoal, intravenous sodium bicarbonate, and physostigmine is controversial and may result in complications if administered improperly. With our particular patient, supportive care was provided, resulting in R.P. being discharged directly from the emergency room. The purpose of our case report is to present a rare case from our local emergency room, as well as highlight the signs and symptoms of anticholinergic poisoning as it relates to jimsonweed ingestion. Also, our goal is to present both the current and controversial treatment recommendations for anticholinergic poisoning with an emphasis on management in the emergency room.

## PREVALENCE OF SYPHILIS WITHIN THE SAN BERNARDINO COUNTY

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This study will be a prospective study to ascertain the overall prevalence of the rate of syphilis for the San Bernardino community via using ARMC as a referral base.

Along with the usual STD panel that patients are tested for such as gonorrhea, chlamydia, and HIV, we will include serologic testing for syphilis. Results are based on VDRL positive serology among the high risk San Bernardino population enrolled in the MIA county medical service program and other high risk patients presenting to the ARMC ED.

The prevalence among males and females between ages 15-39 years (variable) as well as age category will be assessed. High risk patients presenting with symptoms consistent with sexually transmitted diseases such as dysuria, genitourinary discharge, genital lesions, arthralgias, pelvic/abd pain, previous history of STDs, skin rash, fever, testicular pain, alopecia and promiscuous sexual activity will be chosen.

Patients with positive VDRL serology will be followed with FTA-ABS to confirm syphilis infection. Patients with positive FTA-ABS serology as well as other STDs will be informed and treated appropriately.

A total of 67 patients have entered the study thus far. Of these patients 58 received VDRL testing and 7 of these 58 were positive. Of these 7 patients 5 were positive for FTA-AB. More patients will be enrolled and a comparison to the county statistics will be made to determine prevalence.

The study result could be used in future health care policies for effective screening, treatment and education.

## FOURNIER'S GANGRENE AND INCREASING METHICILLIN-RESISTANT *STAPH AUREUS* ASSOCIATION BETWEEN 2002-2008.

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### Study Objective

The incidence of Methicillin-resistant *Staph aureus* (MRSA) appears to be increasing but the relationship with Fournier's gangrene has yet to be established. Emergency department (ED) clinicians are often the first-line providers when evaluating and treating patients with Fournier's gangrene. In this study, we present our findings to investigate the relationship with cases of confirmed MRSA and Fournier's gangrene.

### Methods

A retrospective chart review of 19 consecutive patients with Fournier's gangrene between 2002-2008. Charts were reviewed for patient demographics, comorbidities, Charlson Comorbidity Index (CCI), cultures, Fournier Gangrene Severity Index Score (FGSIS), and outcome. Diagnosis was confirmed by clinical and pathological findings.

### Results

A total of 19 male patients ages ranging from 26 years to 65 years. Nearly all patients (94%) had polymicrobial cultures with four or more organisms. *Staph epidermidis* was the most common isolate (44%) and MRSA was present in nearly 20%. Of interest, there is an increasing trend of MRSA scrotal infections with 30% due to MRSA since 2006-08. No cultures were positive for MRSA before 2006. Diabetes was the most common comorbidity (42%), followed by obesity (26%). There CCI was similar in both those with and without MRSA infections, respectively (1.0 vs 1.3,  $p=0.58$ ). The FGSIS range was 1-16 and the mean FGSIS was similar with MRSA and those without, respectively (4.0 vs 5.36,  $p=0.51$ ). No mortalities were recorded within 30 days surgical debridement. Six patients had repeat debridements, three patients had diverting colostomies completed, and none of the MRSA positive patients had repeat debridements or diverting colostomies. The average length of hospital stay was 22.6 days.

### Conclusion

In this case series there appears to be an emerging association of MRSA and Fournier's gangrene. Therefore, this should support further consideration by ED providers in the use of MRSA covering antibiotics.

## EPIDURAL ABSCESS AS A MANIFESTATION OF DISSEMINATED COCCIDIOIDOMYCOSIS: A CASE REPORT

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Coccidioidomycosis is an infection, which is endemic to certain lower deserts of the western hemisphere caused by dimorphic fungi. In primary infection, these organisms are acquired by inhalation. However, disseminated coccidioidomycosis occurs when the infection spreads beyond the lungs. The most common sites of disseminated lesions include skin, meninges of the brain and spinal cord. This case report describes an African American male who had a relapse of his disseminated coccidiomycosis despite being treated previously for it for four years. We will discuss the outcome of inadequately treated disseminated coccidioidomycosis manifesting itself as an epidural abscess, and the proper management of an epidural abscess. Also, there will be a discussion on outpatient follow up with serology titers of patients with disseminated coccidiomycosis after initial treatment.

## EFFECTS OF OSTEOPATHIC MANIPULATIVE TREATMENT (OMT) ON AN ADULT PATIENT WITH ASTHMA: A CASE REPORT

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**Introduction:** Asthma is a common chronic disease worldwide. Very few experimental protocols have been completed which document and examine the effects of OMT on asthma patients and most of the published data has been extrapolated from pediatric studies. In our case study, we hypothesize that OMT performed on an adult with asthma will subjectively improve quality of life and decrease the need for rescue inhaler.

**Case Study:** The test subject was a 40 year old Caucasian female with a history of mild persistent asthma who used Advair and Proventil to control her symptoms. Data was collected over 12 weeks, with the initial 4 weeks reserved for observing Albuterol usage and the remaining 8 weeks used for OMT treatment in 2 week intervals. Four OMT techniques were used: soft tissue to paraspinal muscles, rib raising, diaphragm release, and thoracic lymphatic pump. Data measurements were obtained via patient logs and standardized questionnaires (Asthma Therapy Assessment Questionnaire, Asthma Control Questionnaire, Asthma Control Test).

**Discussion:** Bockenbauer et al, JAOA 2002, is one of the few experiments examining adults with asthma and their responses to OMT. Their results quantitatively showed an increase in thoracic forced respiratory excursion after OMT.

The evidence based data obtained from our case study supports our hypothesis that OMT can subjectively improve quality of life and decrease rescue inhaler usage. Future studies should include larger numbers of participants, should contain patients diagnosed with all asthma severity classes, and should be completed during each of the different seasons.

## CATHETER-RELATED BLOODSTREAM INFECTIONS IN BURN PATIENTS WITHOUT SCHEDULED CATHETER REPLACEMENT

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**INTRODUCTION:** While the central venous catheter (CVC) remains an important tool in the care of the critically ill patient, catheter-related bloodstream infections (CRBSI) can result in increased morbidity, mortality, and cost. New site insertions, rather than guidewire exchange, and scheduled catheter replacement are two strategies that are intended to prevent the occurrence of CRBSI. While there is increased acceptance of guidewire exchange for burn patients, the practice of scheduled catheter replacement remains commonplace.

**METHODS:** A retrospective medical record review was performed for patients admitted from January 2006 to August 2009 who had CVCs. Scheduled replacement of CVCs was not performed in these patients. Of 152 patients, 139 had complete medical records for review.

Eleven patients were excluded because they received only Peripherally Inserted Central Catheter (PICC) lines, leaving 128 for analysis. A patient was considered to have a CRBSI if any of the following criteria were met 1) Catheter site showing any signs of infection such as erythema, induration, or purulence 2) Positive blood culture with no other documented source of infection 3) At least two criteria for Systemic Inflammatory Response Syndrome (SIRS) without another documented source of infection.

**RESULTS:** There were 288 central venous catheters and 2593 line days. A total of 8 CRBSI were identified in 4 patients for a rate of 3.1/1000 catheter days. Several patients were converted to PICC lines during their hospitalization. If these data are included, total lines increase to 330 and line days to 3269. One additional CRBSI occurred, making the rate 2.8/1000 catheter days. A subsequent analysis was also done using the Center for Disease Control definition of a CRBSI which revealed an infection rate of 1.5/1000 catheter days.

**CONCLUSIONS:** Applying a broad definition for CRBSI, a rate of 3.1/1000 catheter days was identified in burn patients in whom scheduled replacement of CVCs is not performed. Given the importance of CRBSI prevention in hospitalized patients, a larger study is needed in order to evaluate whether scheduled catheter replacement is needed. The role of PICC lines should also be evaluated as it relates to the occurrence of CRBSI.

## LACTIC ACIDOSIS AFTER RESUSCITATION WITH SODIUM ACETATE

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At our institution, we began using sodium acetate for resuscitation of trauma patients in 2005. Sodium acetate is used as an alternative to normal saline to help prevent hyperchloremic metabolic acidosis as well as to help buffer metabolic acidosis. Up to this point we have not experienced any adverse events and patients have tolerated sodium acetate well.

Here we present a case of a 29 year old trauma patient who began to have severe lactic acidosis after the infusion of sodium acetate. This is the first reported case of lactic acidosis caused by sodium acetate infusion.

## ACUTE LEUKOPENIA WITH APPLICATION OF MEPILEX AG™

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Silver has played an important role in preventing burn related infections for decades. Its use in wound care dressings began in 1965 with the introduction of Silver Nitrate and has since revolutionized wound care for burn patients.

Here we present the first case of acute leukopenia and possibly renal failure attributed to the use of silver sulfate containing Mepilex Ag™ in a 56-year-old woman suffering from trimethoprim/sulfamethoxazole induced toxic epidermal necrolysis affecting 70% total body surface area (TBSA). Up until now, Mepilex Ag™ has not been reported to cause acute leukopenia or silver toxicity leading to renal failure.

Though controversy does exist about the causal relationship between silver containing dressings and leukopenia, we believe that this product was directly related to the patient's acute leukopenia. Given the potential for toxicity from silver, we consider it important to routinely monitor the concentrations of silver in plasma or urine in patients undergoing treatment with silver containing dressings

## EVALUATING THE PREVALENCE OF ASYMPTOMATIC METHICILLIN-RESISTANT STAPH AUREUS CARRIES IN HEALTHCARE WORKERS IN THE EMERGENCY DEPARTMENT

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**Objectives:** The purpose of this study is to determine the number of asymptomatic carriers of MRSA among the healthcare workers of Arrowhead Regional Medical Center's Emergency Medicine department. MRSA is an established pathogen in most health care facilities and is capable of causing a wide range of infections. On a daily basis, the ED provider is exposed to this strain of bacteria and may become an asymptomatic carrier. It may be the first step to further studies in the future regarding ways to decrease healthcare provider risks.

**Methods:** A prospective cohort study was conducted on a convenience sample of Emergency Department healthcare workers. The sample group included nurses, physician assistants, residents and attending physicians. Two culture samples were obtained, one from the outer nares and the other from nail bed of the dominant hand. The swabs were analyzed by the lab for the presence of MRSA.

**Results:** A total of 33 ED health care providers were enrolled in the study. Of those, only one provider was MRSA positive (1%). Four of the providers were positive for heavy Staph aureus, however not MRSA. Due to confidentiality, a distinction of colonization rates between physician assistants, nurses, residents and attendings was not made.

**Conclusion:** In our Emergency Department at ARMC, a lower prevalence of MRSA colonization was demonstrated when compared to similar studies involving health care workers.

## THERAPEUTICALLY EFFECTIVE, LOW COST MANAGEMENT OF CHEMOTHERAPY-INDUCED NAUSEA AND VOMITING

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Increasing medical expenditures for patients receiving chemotherapy continues to be a concern for both the patient and the facility providing care. Poorly controlled chemotherapy induced nausea and vomiting (CINV) can result in decreased quality of life and increased resource utilization. This is particularly important in public safety net hospitals, where resources are limited. This study aims to evaluate the clinical outcomes and cost-effectiveness of the outpatient antiemetic prophylaxis regimens for moderate or highly emetogenic chemotherapy. This is a retrospective outcome review. The study includes infusion center outpatients who are 18 years of age or older and are receiving chemotherapeutic regimens that carry a high risk for emesis. Data will be collected using patient medical records and a questionnaire, which includes the patients' assessment of their quality of life, completed by either the nursing staff or study investigator. The outcomes and cost analysis will be presented, and the implications for the changing standards of practice will be discussed.

## HEMOGLOBIN MICROSPHERES AS OXYGEN CARRIERS

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Contemporary pharmacotherapy is placing increasing emphasis on targeted delivery, that is, the ability to target a drug selectively to sites of therapeutic action and divert it from sites that mediate side effects. Attention has been focused most urgently on the targeted delivery of particularly toxic cancer chemotherapy, including antibody-targeted immunoconjugates or selective chemoembolization. However, targeted pharmacotherapy has found a place even in generally benign therapies, such as delivering glucocorticoids for rheumatoid arthritis while limiting hyperglycemia and Cushing syndrome (Rauchhaus 2009). Therefore there is significant value in a platform for targeted delivery that is biocompatible, biodegradable, and able to carry a multitude of agents.

One possible delivery system involves aggregating proteins, with or without additional bound therapeutic agents, into injectable "microspheres." Oppenheim (1978) demonstrated one method of microsphere formation by heat-stabilizing an emulsion of aqueous albumin in oil. However, this method has at least two shortcomings: firstly, variable and uncontrolled protein aggregation reduces the yield and usefulness of the product, and secondly, the heat-stabilization step tends to denature the microsphere protein and any agent it may be carrying. The method of Yen (1991), on the other hand, is free of heat treatment and regulates protein aggregation by lightly cross-linking with glutaraldehyde prior to suspending the forming microspheres in a surfactant.

In the current experiment, this latter method is used to manufacture monodispersed, uniformly-sized microspheres from human hemoglobin. Serving both as a validation of the technology and as an illustration of one specific application, these hemoglobin microspheres are shown to exhibit oxygen-binding and -releasing capability much like that of whole blood.

## RELATION OF HELMET USE TO TYPE OF CLOSED HEAD INJURY AND SURGICAL INTERVENTION IN SKIING AND SNOWBOARDING ACCIDENTS

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**Introduction:** Skiing and snowboarding are popular winter activities that continue to attract more enthusiasts around the country. Even though technology has led to safer equipments, the sheer volume of people and the increasing frequency of acrobatic stunts performed have lead to a large increase in injuries requiring hospitalization. Approximately 15-20% (1-4) of skiing and snowboarding injuries is closed head injuries. These account for the most severe injuries sustained, including highest fatalities. The use of helmets has been advocated and supported through studies in the past; however none of the studies have related the type of intracranial head injuries sustained and the need for surgical intervention with helmet use.

**Objective:** To relate the type of head injury sustained and the need for surgical intervention to helmet use in patients with skiing and snowboarding accidents.

**Study design:** Perform a retrospective data review of the trauma registry from a Level I Trauma center in Southern California from 2005-2009. Factors that were looked at were: the use of helmets; the presence of cranial fractures; the presence or absence of intracranial bleeds; the type of intracranial bleed if present (SAH, EDH, SDH or IPH); and the requirement of surgical intervention during the hospital stay.

**Results:** Total of 127 patients was admitted to the emergency room for some sort of snowboarding/skiing injury; of these, 50 (39%) were head injuries. Only 9 wore helmets. 4 had a cranial fracture, 3 were on non-helmet users. 28 had no intracranial hemorrhage, 21 were non-helmet users. 11 had an intra-parenchymal hemorrhage (IPH), 10 were non-helmet users. Both 2 epidural hematomas (EDH) were non-helmet users. 5 had subdural hematomas (SDH), 4 were non-helmet users. All 10 subarachnoid hemorrhages (SAH) were non-helmet users. All 11 surgical interventions were on non-helmet users.

**Conclusion:** The data has numerous implications, all of which support the use and efficacy of helmets. First is that helmet non-users are brought to the emergency room more frequently than helmet users. Second, fractures are not common in these head injuries, however non-helmet users are still at a greater risk. Third, all types of head injuries -whether an intracranial hemorrhage is present or not- are unequivocally more common in non-helmet users than helmet users. Finally, all head injuries that required surgical intervention were non-helmet users.

## LIPDEMA WITH MULTIPLE LIPOMAS

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Lipedema is an under diagnosed syndrome of unclear etiology characterized by symmetric painful enlargement of the buttocks and lower extremities due to deposition of adipose tissue, sparing the feet. It was first described by Allen and Hines in 1940, who observed that it had a female predilection and patients commonly had an associated family history. We describe a case of classic lipedema in a patient with multiple lipomas in her arms and trunk.

## A CASE REPORT OF SEVERE CONSTIPATION WITH REFRACTORY HYPERTENSION CAUSED BY A POSSIBLE RARE CAUSE PHEOCHROMOCYTOMA.

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### Case Presentation:

A 31-year-old African American male had a history of headaches presented in emergency room with altered level of consciousness, hypertensive emergency. Further workup showed brain infarct, multiple cerebral artery spasms and anterior communicating artery aneurysm. Ten days later he was readmitted for subarachnoid hemorrhages. Two years later, the patient presented with malignant hypertension, severe constipation with ileus, abdominal distension. Although there was no mechanical obstruction and all metabolic abnormalities were treated, constipation persisted. The Patient did not respond to multiple therapeutic interventions specific to constipation. After extensive workup and treatment with no definitive diagnosis, the patient's condition gradually improved and eventually normal bowel functions returned. He was followed as an outpatient to establish the cause of his constipation. Outpatient workup was done for hyperaldosteronism and carcinoid tumor and included Iodine 123 MIBG scan that resulted in a questionable abnormal focus of activity in the region of left adrenal gland and pheochromocytoma could not be excluded.

### Discussion:

Available evidence does not support the diagnoses of functional constipation, thyroid disease, diabetes mellitus, neoplasm, stricture, volvulus, inflammation, prolapse, rectocele, anal fissure, systemic sclerosis, Parkinson's disease, multiple sclerosis, acute cerebral ischemia, spinal cord lesions, aldosteronism and carcinoid tumor. Not all patients with pheochromocytoma have the classic triad of episodic headache, sweating and tachycardia. Nausea, vomiting, and abdominal pain are typical gastrointestinal manifestation of pheochromocytoma. In various studies, constipation was reported in 5-13 % of cases of pheochromocytoma (Gifford RW, Kvale WF, Maher FT, Roth GM, Priestley JT. 1964 Clinical features, diagnosis and treatment of pheochromocytoma: a review of 76 cases. Mayo Clinic Proc. 39:281-302.). Our patient had constipation with radiological evidence of an ileus but no strong evidence to support electrolyte abnormalities or Ogilvie syndrome as causes of constipation. Catecholamine excess may manifest as intermittent constipation but when catecholamine levels become persistently elevated, they may precipitate an ileus and perhaps a megacolon.

### Conclusion:

We suspect this patient has a pheochromocytoma, which contributed to his constipation based on episodes of headache, tachycardia, labile hypertension, high 24-hour urinary metanephrine, MRI evidence of multiple cerebral artery spasm, and an Iodine 123 MIBG scan which showed questionable abnormal focus of activity in the region of the left adrenal gland which could not exclude pheochromocytoma. During this study the patient was on a calcium channel blocker, known to inhibit MIBG uptake by the adrenal gland, which possibly reduced activity of any abnormal focus causing a less conclusive result. We recommend an Iodine 123 MIBG scan should be repeated when the calcium channel blocker is discontinued, and tissue sampling of the left adrenal gland to help establish diagnosis. Patient is pending an evaluation by general surgery and endocrinology.



## EFFECTIVENESS OF ORGANIZED STUDY PLAN FOR PREPARATION OF BOARD EXAMS.

Naresh Patel, MD  
Niren Raval, DO  
Department of Family Medicine, ARMC

In family medicine residency, residents have organized study plan for board exam preparation. Residents study according to study plan. We did survey among Arrowhead Regional Medical Center Family Medicine Residents to find out effectiveness of Organized Study Plan for boards.

Many programs consider the successful completion of the In-service exam as one of the significant benchmark for assessing resident knowledge and study.

In-service exams are very stressful and if resident did not get required score, then have to make study plan for next in-service exam and boards. Objectives are to find whether organized study plan helps residents to improve score in next in-service exam or not. Also our objective is to find compliance with study plan.

Online survey was conducted among second and third year residents of Arrowhead Regional Medical Center Family Medicine Residency Program. Total twenty four residents were asked to finish online survey. We got responses from total twenty residents. It was anonymous online survey.

Many residents can not study consistently according to their Organized Study Plan for Boards. Further study is required to find out for non consistency. Residents found organized study plan helpful to improve score. We support Organized Study Plan helps residents to improve score for boards.

### Discussions

Success always goes with plan, hard work and consistency. We assume if residents have some aspects if included in their plan, those will definitely work to get better score. With extensive research, we found some important topics those help residents to get consistent study and to get better score in exam.

## TREATMENT FAILURE OF GANCICLOVIR FOR EBSTEIN-BARR VIRUS INDUCED TRANSVERSE MYELITIS IN A SYSTEMIC LUPUS ERYTHEMATOSUS PATIENT

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We report a case of a 28 year old female, on prednisone and cellcept for systemic lupus erythematosus (SLE), who was diagnosed with EBV induced transverse myelitis. Ebstein-Barr virus (EBV) is a herpes virus that is spread by salivary secretions. Clinical manifestations can range from infectious mononucleosis to Burkitt's lymphoma. Cellular immunity is important in controlling the proliferation of EBV infected cells.

On March 5, 2009, the patient presented to the hospital with lower back pain and bilateral lower extremity paresis with no loss of sensation. During her hospital stay, she progressed to complete paraplegia, complete anethseia below T10, urinary retention and fecal incontinence. The diagnosis was made by magnetic resonance imaging (MRI) of the thoracic and lumbar spine, viral serologies and cerebrospinal fluid (CSF) analysis. The total protein in the CSF was 76 mg/dl, and the glucose was 48 mg/dl. PCR studies of the spinal fluid were negative for enterovirus, HHV6, HSV I and II, CMV and Varicella Zoster virus DNA, but were positive for EBV DNA at 44,984 copies per mL. The patient was treated with ganciclovir 10mg/kg/day intravenously for 4 weeks and then oral ganciclovir 60mg/kg/day for 4 weeks. The patient was seen in the hospital two and a half months later with no change in her neurological examination.

According to Gruhn et al, ganciclovir and CMV hyperimmune globulin appeared to be effective in treating immunocompromised patients with EBV induced transverse myelitis. This case indicates that ganciclovir alone is ineffective in immunocompromised patients diagnosed with EBV induced transverse myelitis.

## A REVIEW OF CESAREAN HYSTERECTOMY AT A COUNTY INSTITUTION OVER 4 YEARS: BEST PRACTICES

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**OBJECTIVES:** To evaluate a recent increase in Cesarean Hysterectomy (CH) performed at our institution, and describe best practices and measures which may reduce operative morbidity or mortality.

**MATERIAL AND METHODS:** This is a retrospective case review of all CH performed at our institution between 2005 and 2009. We limited the time interval to include only cases treated with more modern techniques to stop bleeding (e.g., embolization, thrombin coagulant products, etc...). Demographic data, past surgical history, intra-operative techniques, operative and post-operative complications, blood loss, as well as neonatal data (Apgars, weight) and pathologic analysis were abstracted from patient records. Operative reports were reviewed for innovative surgical methods.

**RESULTS:** 20 cases of CH are reported. There was a sharp increase in number of CH per year, from 1 in 2005 to 11 in 2009. On average, these patients had 4 previous deliveries and 8 (45%) had 3 or more prior Cesarean deliveries. 15% had no prior Cesarean sections. Ten (50%) patients had known complete placenta previa prior to delivery, and 9 (45%) had ultrasound and/or MRI findings consistent with placenta accreta or more, and 14 (70%) of pathologic examination of the uterus showed placenta accreta or more, usually increta. 30% of deliveries were scheduled for suspected placental invasion. Of the rest of the patients, the most common indication for delivery was bleeding (n=6, 30%) followed by labor (n=5, 25%), PPRM (n=2, 10%), and non-reassuring fetal status (n=1, 10%). Most patients had a classical uterine incision (n=11, 55%) followed by low-transverse. Average blood loss was 6.6 L, and average transfusion was 13 units of pRBC, 2.7 of ACP, and 1.9 platelet apheresis packs. The most common complications include cystotomy (n=6, 30%), DIC (n=5, 28%), reoperation (3, 17%), and delayed primary closure (n=2, 11%). There was one maternal death secondary to DIC. 20% of patients (4) underwent preoperative hypogastric artery balloon stenting, and one of these patients developed a post operative thrombosis in the common and internal iliac arteries. Unique operative techniques include use of thrombin pro-coagulant products, the Ligasure system, and a GIA stapler.

**DISCUSSION:** CH will rise as long as more Cesarean Sections are performed. Morbidity and mortality will remain high due to the complicated nature of underlying placental invasion leading to increased surgical difficulty. Surprisingly, 7 (35%) patients had posterior placentas, and 2 (10%) had posterior low-lying placenta. Improvements in preoperative identification of placenta accreta would be extremely beneficial. Patients should undergo transfusion of pRBC to FFP to platelets in a 1:1:1 ratio to compensate for large blood losses. Innovative surgical techniques may decrease operative times and blood losses, and are deserving of more extensive research in the setting of CH.

## THYROID STORM AND BILATERAL CEREBRAL INFARCTION COMPLICATED BY RESPIRATORY FAILURE: A CASE REPORT

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Cerebral vascular accidents are a possible and serious side effect of thyroid storm. We recount the case of a 25 year old Hispanic female who presented in thyroid storm. She complained of vomiting, dizziness, and cough for a few days. Soon after admission, the patient went into respiratory failure with altered mental status and was found to have bilateral cerebral cortical infarcts. Although measures were taken to control her thyrotoxicosis and respiratory disease, the patient's condition worsened and died from related complications. Cerebral vascular compromise should be kept in mind in patients with thyroid storm, as it can have debilitating effects. Possible underlying precipitating sources should be sought out urgently and treated.

## WHAT IS THE LEVEL OF KNOWLEDGE AND ATTITUDES ABOUT H1N1 AMONG ARMC RESIDENTS?

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The CDC estimates that between 183,000 to 378,000 H1N1-related hospitalizations, and between 8,330 to 17,160 H1N1-related deaths occurred between April and January 16, 2010. This survey was performed to determine the basic knowledge level and attitudes about H1N1 among ARMC residents, as H1N1, being a novel form of influenza, had the potential of infecting a much larger portion of the United States population than seen for many years. The residents were surveyed pre-season and post-season, and data was compared to determine any changes in knowledge or attitude during that time period. The data show that residents increased their interest in H1N1 and began to follow the story more closely, as well as changed their main source of information from media to CDC. Also, residents are much less worried about H1N1 than before. In addition, the data from the second survey showed that 13 ARMC residents came into work with flu-like symptoms, and did not follow the CDC recommendations about staying home. Although there were no *statistically* significant differences, the data suggest that attitudes about H1N1 did change among ARMC residents, either because of experience or hospital wide education, and although residents were aware of the CDC guidelines regarding flu-like symptoms and reporting for duty, most chose not to follow this specific recommendation.

## RELATIONSHIP BETWEEN AVM SIZE AND ICH VOLUME: CORRELATION TO CLINICAL URGENCY

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Shokei Yamada,  
Frank Hsu,  
Javed Siddiqi,  
Shoko M. Yamada,  
Austin RT Colohan  
Department of Neurosurgery, ARMC  
Department of Neurosurgery, Loma Linda University  
Department of Neurosurgery, Teikyo University

Intracerebral hemorrhage is a common mode of presentation of patients with AVM (50-75% incidence). The authors correlate the RATIO of hemorrhage size/AVM volume to the severity of signs and symptoms.

## EMERGENCE OF CLINDAMYCIN RESISTANCE TO *METHICILLIN-RESISTANT S. AUREUS* INFECTIONS OF SIMPLE CUTANEOUS ABSCESES OF EMERGENCY ROOM PATIENTS

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Michelle Mouri, D.O.  
Jennifer Liu MS IV  
Rodney Borger, M.D.  
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**Study Objective:** To evaluate the community acquired Methicillin-Resistant *S. aureus* rate of simple cutaneous abscesses in an urban emergency room and to compare with currently reported rates around the country. Also, to evaluate this pathogen's susceptibility to commonly prescribed antibiotics to further refine prescribing patterns.

**Methods:** After determination of a cutaneous abscess the wound was incised and drained by the ED provider using normal protocol. Specimens were obtained at the largest area of the abscess and the contents of the wound were then cultured using the standard wound culture swab \_\_\_\_\_ found in the ED. These culture swabs were then sent to the lab for standard analysis and further determination of the immunological components. The location of the abscess was noted, along with patient medical record number for tracking in a notebook found in the area of the ED where most of the procedures took place. Using the centralized computer system, the culture results were then reviewed for the specific variables found within the results of the study. The lab used for the results characterized a positive MRSA result as a *S. aureus* isolate resistant to oxacillin. Furthermore, the susceptibility of MRSA positive wounds to common antibiotics prescribed for suspected wounds was noted and recorded. These antibiotics included clindamycin, trimethoprim-sulfamethoxazole, and vancomycin.

**Results:** Of the 165 patients, 80 (48.4%) were found to be MRSA positive. The susceptibility to clindamycin showed 69/80 susceptible for a rate of 86.2%. Trimethoprim-sulfamethoxazole susceptibility rates showed 79/80 or a rate of 98.8%, and the susceptibility rate of vancomycin was 80/80 for 100% rate.

**Conclusion:** Our rate of MRSA positive simple cutaneous abscesses was similar to previous reported studies using similar protocols, and further confirms this pathogen as the major cause of these types of infections. This also confirms the practice of MRSA coverage when prescribing antibiotics in this setting. What is concerning is the high rate of clindamycin resistance of this pathogen among our patient population and may prompt a further refinement of prescribing practice for this commonly dealt with problem.

## INCISION AND DRAINAGE (I & D) TREATMENT OF ABSCESES IN AN EMERGENCY DEPARTMENT: CLINICAL EVALUATION OF A 100% SODIUM CARBOXYMETHYLCELLULOSE (NACMC) RIBBON DRESSING WITH IONIC SILVER AND STRENGTHENING FIBER\* AS A PRIMARY DRESSING

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### **Objectives:**

The primary goal of this evaluation was to assess the ease of use of this ribbon as packing material for abscesses presenting in the ED being treated by I & D. Additional assessment points included frequency of dressing changes and pain at dressing changes.

### **Method:**

Eligible patients presented to the ED with a cutaneous abscess on either the buttocks or extremities and were treated through I & D, with or without antibiotics. Patients were excluded if cellulitis was present or the abscess was not treated through I & D.

The incision of the abscess was made sufficient to allow drainage of effluent and packing of the wound with the ribbon dressing. A secondary dressing of clinicians' choice was used to cover the packed wound. Patients received instruction for follow-up care upon discharge.

### **Results:**

The silver ribbon was beneficial in reducing the number of dressing changes and decreasing return visit frequency, both direct results of the dressing's characteristics and once weekly dressing change requirements. Clinicians found the dressing easy to use and that the dressing remained intact during removal. Patients reported that the dressing was comfortable while in place and experienced minimal pain during dressing changes.

### **Discussion:**

Skin and soft-tissue infections (SSTI) are common in patients presenting for treatment in emergency departments (ED). Incision and drainage (I & D) is the primary treatment for cutaneous abscesses where cellulitis is not present. Abscess I & D can be accomplished as an outpatient procedure with the use of packing material and clinical follow-up.<sup>1</sup> The use of a 100% NaCMC dressing with ionic silver has been shown to eradicate a broad spectrum of skin and wound pathogens in dressings including *Staphylococcus aureus*, methicillin resistant *Staphylococcus aureus* (MRSA), and vancomycin resistant *Enterococcus* (VRE), all of which are prevalent in many SSTI.<sup>2,3</sup>

## SYMPTOMATIC BRADYCARDIA WITH RECURRENT SYNCOPE AFTER GASTRIC BYPASS SURGERY: CASE REPORT AND BRIEF REVIEW

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**Objective:** To describe a case of symptomatic bradycardia with recurrent syncope occurring after gastric bypass surgery.

**Methods:** We present a case report that includes clinical, laboratory, radiologic findings, and cardiac diagnostic studies with a brief review of the literature.

**Results:** A 31 year-old female developed symptomatic bradycardia with recurrent syncope after undergoing gastric bypass surgery.

**Conclusion:** It remains unknown the direct correlation between gastric bypass surgery and the complications experienced by this patient. Although a current review of medical literature fails to establish a direct correlation, it appears that this surgery played a role in the development of symptomatic bradycardia with recurrent syncope in this patient. There are a number of etiologies for both symptomatic bradycardia and recurrent syncope, and its relationship status post gastric bypass surgery is uncommon in medical literature. However, as the numbers of gastric bypass surgeries performed in the United States continues to increase yearly, complications such as in this case report may become more apparent.

## EFFECT OF INTENSIVE MANAGEMENT IN PREGNANT WOMEN WITH BODY MASS INDEX (BMI) > 40KG/M<sup>2</sup>

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Juan Jose Arce, MD,  
Guillermo J Valenzuela, MD, MBA  
Department of Women's Health, ARMC

The prevalence of obesity is increasing at a rapid rate in the United States and around the world. In our county hospital, serving a lower socioeconomic class, roughly 50% of our obstetrical patient population can be classified as overweight or obese by their body mass index (BMI) according to the definitions set forth by the World Health Organization (WHO). The purpose of this project is to assess whether intensive management of weight during prenatal care could impact maternal weight gain, infant birth weight, and neonatal comorbidities. We placed a group of obstetric patients whose BMI was over 40 kg/m<sup>2</sup> into an intensive weight management clinic as part of their prenatal care. Each patient received counseling by a nutritionist on diet and exercise several times throughout the pregnancy.

Our preliminary results from the first year of the specialty clinic show a slight average decrease in fetal birthweight between the control and intensive management groups, but no difference in the Cesarean section rate. These results suggest that goals should be made to reduce maternal weight prior to pregnancy to prevent the appearance of neonatal comorbidities. The longer term goals of this clinic are to inspire women to make certain lifestyle changes to improve overall health for their future.

## AN UNUSUAL PRESENTATION OF LEFT GONADAL VEIN SEPTIC PELVIC THROMBOPHLEBITIS: A CASE REPORT.

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Septic pelvic thrombophlebitis is an uncommon condition. It usually is a complication for postpartum patients after vaginal delivery or cesarean section. This is a unique case report of a 22-year-old female with a history of congenital absence of the left kidney and who presented with complaint of right lower quadrant pain for two days. Computerized topography of her abdomen and pelvis demonstrated left gonadal vein thrombosis.

Septic pelvic thrombophlebitis (SPT) occurs classically as one of the complications seen in postpartum. The incidence of SPT is 1 in 9000 vaginal deliveries and 1 in 800 cesarean deliveries from a five-year survey of patients in 1999 (8). Septic Pelvic thrombophlebitis occurs in the setting of pelvic vein endothelial damage, venous stasis, and hypercoagulability. There are many cases reporting SPT in patients with gynecological disorders (endometritis, pelvic inflammatory disease), acute gastrointestinal inflammation (ruptured appendicitis, acute diverticulitis, Crohn's disease), and in patients with recent history of surgery or underlying malignancy.

There are two types of SPT: ovarian vein thrombophlebitis (OVT), and deep septic pelvic thrombophlebitis (DSPT). Patients with OVT usually present with fever and abdominal pain within one week after delivery or surgery. Thrombosis of the right ovarian vein is visualized radiographically. On the contrary, patients with DSPT usually present with generalized fever after delivery or surgery that persists despite antibiotics in the absence of radiographic evidence of thrombosis.

Gonadal vein thrombosis is observed mainly in female patients. Right ovarian vein is usually affected in 90% of the cases. Pregnancy induced venous stasis, ovarian venous dilation, and low postpartum ovarian venous pressure can lead to retrograde left to right ovarian venous flow. It is postulated as the reason why OVT is observed more frequently on the right than on the left (6).

This case reports an unusual presentation of the left gonadal vein thrombosis in a nulliparous 22 year-old female. Her past medical history is significant for the congenital absence of the left kidney. In the absence of risks factors for SPT such as pregnancy, cesarean section, recent surgery, pelvic infection, malignancy, and hormonal stimulation, it is quite rare to have this diagnosis for an acute abdominal pain symptom.

## A DELAYED PRESENTATION OF SIGMOID VOLVULUS IN A YOUNG WOMAN

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Ravi Shah,  
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We report on a 25 year old woman who presented after being discharged after several days of unsuccessful attempts to disimpact presumed constipation. Laparotomy confirmed a preoperative diagnosis of sigmoid volvulus and a colectomy was performed.

Sigmoid volvulus is responsible for 8% of all intestinal obstructions. Previous retrospective studies have shown that sigmoid volvulus is particularly common in elderly persons (1). Risk factors associated with sigmoid volvulus include chronic constipation, megacolon, and an excessively mobile colon (2). Plain films, CT or MRI, are usually diagnostic (3,4). Decompression may be achieved with the introduction of a stiff tube per the rectum, aided by endoscopy or fluoroscopy, however surgical intervention is indicated when there is evidence of gangrene. Most authors recommend for surgical correction after decompression due to the high rates of reoccurrence and risks associated with subsequent cases (5)

## RETROSPECTIVE ANALYSIS OF TESTING CHARACTERISTICS OF URINE DIP, FORMAL URINALYSIS WITH CLINICAL FEATURES IN DETERMINATION OF NEPHROLITHIASIS

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E. Dan Arellano  
Michael Neeki  
Department of Emergency Medicine, ARMC

The study will be a retrospective collection of medical records of all patients with presenting complaint of non-traumatic flank pain to emergency department at ARMC during the period when the Philips Brilliance 40 slice scanner was in use. We will collect data on if patient's had a CT scan of the abdomen and pelvis, a urine dip and/or urinalysis, along with patient demographic information which will be used later in statistical analysis

Patients are instructed to obtain midstream urine specimens, as is protocol in the Emergency Department. Our laboratory staff report urinalysis RBC counts as 0, 0 to 1, 2 to 5, 6 to 10, 11 to 20, 21 to 30 and greater than 30 per high power field. For data analysis we classified hematuria as greater than 0, greater than 1 and greater than 5 RBCs per high power field. We defined dipstick urinalysis as positive for hematuria if emergency room staff performing the test considered the reading positive and recorded it as such. Using unenhanced helical CT as the reference standard for diagnosing ureterolithiasis, we will calculate the sensitivity, specificity, positive and negative predictive values, accuracy and receiver operator characteristics curves of microscopic and dipstick urinalysis.

In addition, CT abnormalities unrelated to urinary lithiasis will be noted and the medical records of all patients reviewed to determine other diagnoses. All CT scan readings will be from staff radiologists at ARMC. Statistical analysis will be performed using SPSS. Patient information will be coded using patient medical record number and patient initials.

*Exclusion criteria* – Pregnant patients and children will be a separate analysis. US is the current diagnostic test of choice for these groups. Urinary lithiasis in patients taking indinivir are notoriously radiolucent, rendering IVP rather than CT scan as the reference standard for diagnosis. Women with vaginal bleeding or currently menstruating will also be excluded due to possibility of false positive urinalysis results.

*Description of procedures/ devices, monitoring techniques, plans for statistical analysis of data* - Philips Brilliance 40 slice scanner was in use. Abdominal multislice CT (MSCT) examinations were taken with 120 kVp CT scanners Philips Brilliance 40. Detector configurations - 40 x 0.625. Urinalysis samples were centrifuged at X rpm for X minutes, and erythrocyte counts per high power field were obtained for microanalysis. Urine dipstick by Siemens multistix 10 SG and microscopic testing.

## RETROSPECTIVE ANALYSIS OF THE EFFECT OF SPECIFIC COST CONTAINMENT MEASURES ON MEDI-CAL PATIENTS PRESENTING TO AN URBAN EMERGENCY DEPARTMENT WITH NON-TRAUMATIC DENTAL COMPLAINTS

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The introduction of Assembly Bill No. 5, effective July 1, 2009, amended Section 14131.10 of the Welfare and Institutions Code to eliminate dental benefits for adults with Medi-Cal (California Medicaid) age 21 and older. The amendment was part of an emergency cost containment measure to achieve up to \$100,000,000 in General Fund reduction for the 2009–10 fiscal year(1). Without dental clinics and offices being covered by Medicaid payments, patients will have little other resources for their dental complaints except to visit the emergency department. However, most emergency medicine providers have limited training in dental complaints and procedures leaving the majority of these patients without definitive treatment (2). As a result, ED-provided dental care is often palliative, and patients are unable to be referred for definitive treatment that is financially accessible. Furthermore, without coverage of visits to dental providers many patients may wait until later in the clinical course before seeking treatment. Previous studies have established that 0.7% of emergency visits are for dental complaints (3). This study will measure if there is a difference in emergency visits by Medicaid/Medical patients presenting to a large urban emergency room in the year after the introduction of Assembly Bill No. 5 compared to a historical control of the previous year.

The study will involve the examination of visits to a large urban emergency department for the treatment of mouth pain and infections associated with the teeth and periodontal tissues. The study will cover all visits between July 1, 2008 and July 1, 2010. The study sample will include all adult Medicaid patients or a County Organized Health System (COHS) (individuals 21 years of age and older) during this period.

This React system will be used to obtain the date, International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM) code, as well as information on patient's age, gender, and disposition. The specific ICD-9-Codes used in the study will be: 521-521.9, 522-522.9, 523-523.9, 525.3, 525.9, 873.63, and 873.73. Codes associated with trauma will be excluded. They are the same codes that were used in prior studies of hospital Emergency Departments (4), (5). ICD-9-CM codes were chosen for use in the selection of subjects because of required inclusion for Medicaid reimbursement.

We will then determine if the data collected will conform to the assumptions of parametric data. We will determine the homogeneity of variance before and after the bill took affect then perform a Kolmogorov-Smirnov test to assess the skew and kurtosis of the data, and perform any transformations as needed. We will adjust for the variance accounted by the daily totals for patients that are seen during each day by performing a partial correlation, and using a linear model if the data is parametric. Assuming the data is parametric, we will compare the means of patients seen with dental complaints before and after the bill was introduced using a Student's independent means t-test. If the data is not parametric we will perform a Mann-Whitney-Wilcoxon test to compare the means.

## PHYSICIAN WELLNESS : A FAMILY MEDICINE CURRICULUM 2009-2010

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**Objectives:** Physicians face demanding and stressful challenges and often lack adequate self care. The purpose of this curriculum is to promote physician wellness awareness and positive behavior change.

**Methods:** I developed and facilitated a five part interactive lecture series focusing on sleep deprivation, healthy lifestyles, stress management, grief and bereavement, and substance abuse. I then surveyed participating residents to assess attitude and behavior change.

**Results:** Residents overwhelmingly reported increased awareness of physician wellness, increased comfort in communicating with mentors and colleagues and support for physician wellness education in medical education. Comments showed specific behavior and attitude changes.

**Conclusion:** Resident physicians benefit from physician wellness education and welcome an opportunity to improve their health and well being.

## THE IMPACT OF CHANGING ANNUAL SCREENING MAMMOGRAPHY STARTING AT THE AGE OF 50 INSTEAD OF 40: RETROSPECTIVE STUDY OF COUNTY HOSPITAL.

David Wong, MD,  
Michael Kim OMSIV  
Department of General Surgery, ARMC

**Introduction:** Recently, screening mammography has been a controversial topic amongst physicians regionally and internationally. The guidelines for the past two decades have been that women obtain annual screening mammograms starting at the age of 40. The United States Preventative Services Task Force (USPSTF) stated new guidelines to start screening mammography for breast cancer at the age of 50. In 1977, the first randomized trial, reported a 29% breast cancer mortality reduction for women invited to screen, compared to the controls, after 9 years of follow-up. The benefit showed a 35% reduction in relative risk seen in women aged 50-64 years of age. However, the group from 40-49 had such a small reduction in risk, that it was deemed statistically insignificant. This study looks at the impact of following the USPSTF guidelines at Arrowhead Regional Medical Center, a 456 bed county hospital that performs approximately 6500 mammograms/year.

**Method:** A 10 year retrospective review of data obtained from Arrowhead Regional Medical Center Cancer Registry from 2000-2009 were performed. Patients were separated to two groups, those initially diagnosed by physical exam Vs mammography. Chart review and phone calls were made to determine the method of initial discovery of the breast cancer.

**Results:** 333 patients were diagnosed with breast cancer (5 patients were left out due to a previous history of breast cancer). ARMC performs approximately 6500 mammograms a year. Of the 333 diagnosed with breast cancer, 30 were confirmed to be diagnosed by mammography. Of the 30, 22 out of the 333 patients (6.6%) were between the ages of 40-49. There are approximately 104 patients where the method of diagnosis was unknown from medical records or phone calls. The success of contact by phone was less than 20%. Excluding the unknowns, 22 out of 229 patients would yield 9.6% of patients what would not have been diagnosed during this time period.

**Conclusions:** This study is a reflection of community outcomes based at a county hospital and contributes to the following questions that policy makers will have to make: Does the economic burden and radiation exposure justify the current practice of initial screening mammogram at the age of 40? Or is missing approximately one cancer per year socially acceptable? If we followed the USPSTF guidelines during the study period, 22 patients would not have been diagnosed with breast cancer, a little over one patient per year. Although upstaging of the cancer is possible, the real consequences of the potential delay in diagnosis of the 22 patients cannot be drawn from this retrospective study. From the perspective of breast cancer yield per mammogram in the 40-49 age groups, the yield is 0.03%. Approximately 4333 mammograms would have to be performed per year to yield one diagnosis of breast cancer in this age group.



## - Past Winners -

### 1st ANNUAL ARMC RESEARCH DAY 2006

1st Place

"Intraoperative Hepatic Radiofrequency Ablation of Metastatic Sarcoma"

**Edward W. Lee, M.D., Ph.D.**

(Transitional Medicine Program)

2nd Place

"A Prospective Study To Evaluate The Depth Of Sedation  
In Patients Undergoing Procedural Sedation"

**Jonathan Kelling, M.D.**

(Transitional Medicine Program)

3rd Place

"Retrospective Study of Second Trimester Intrauterine Fetal Demise  
(IUFD): Methods of Induction"

**Lisa Barden, DO**

(Department of OB/GYN)

## - Past Winners -

### 2nd ANNUAL ARMC RESEARCH DAY 2007

1st Place

"Effectiveness of ARMC's "Quit Clinic" for Smoking Cessation"

**Hansie Wong, MD**

(Department of Family Medicine)

2nd Place

"Incidence of Abnormal Blood Gases Among Patients Undergoing  
Elective Cesarean Section"

**Nicole Adair, DO**

(Department of OB/GYN)

3rd Place

"Utilization of the Rapid HIV Test in the Emergency Department"

**Patricia Kahn, DO**

(Department of Emergency Medicine)

## - Past Winners -

### 3rd ANNUAL ARMC RESEARCH DAY 2008

#### 1st Place

"Evaluation of Pre-Hospital and Emergency Department Systolic Blood Pressure as a Predictor of In-Hospital Mortality"

**Maria "Angie" Loza, MD**

(Transitional Medicine Program)

#### 2nd Place

"A Retrospective Study of Maternal ICU Admission in a County Hospital Setting From 2004-2007 and Review of Literature"

**Lauren Prewitt, DO**

(Department of OB/GYN)

#### 3rd Place

"The Effect of Breastfeeding on the Number of Sick Visits in the First Six Months of Life for Infants Born at ARMC"

**Bichson Pham, DO & Camelia Wogu, MD**

(Department of Family Medicine)

## - Past Winners -

### 4th ANNUAL ARMC RESEARCH DAY 2009

#### 1st Place

"Effects of Implementation of a Rapid Response Team  
at Arrowhead Regional Medical Center"

**Uma Devaki, MD**

Mentor: Emily Ebert, MD, MPH  
(Transitional Medicine Program)

#### 2nd Place

"Protocol Development: Comparison of Continuous Versus Intermittent  
Vancomycin Infusion for Methicillin-resistant Staphylococcal Infections"

**Linda Lam, PharmD**

Mentor: Andrew Lowe, PharmD  
(Department of Pharmacy)

#### 3rd Place

"Troponin Elevation in Severe Sepsis and Septic Shock"

**Chiado Nguyen, DO**

Mentor: Mohammad Aslam, MD  
(Department of Internal Medicine)



# - Special Thanks to -

Emily Ebert, MD, MPH  
Aimee Flemmer, MD  
Lia Katz, MD  
Andrew Lowe, PharmD  
Dan Miulli, DO  
Daniel Pearce, DO  
Webster Wong, MD  
Ms. Rebecca Rivera

Departments  
of  
Anesthesiology  
Emergency Medicine  
Family Medicine  
Internal Medicine  
Neurosurgery  
Obstetrics and Gynecology  
Pathology  
Pharmacy  
Pediatrics  
Radiology  
Surgery

Transitional Program

Traditional Program

ARMC Nursing Staff

ARMC Administrative Staff

San Bernardino County Print Shop  
(Especially Ms. Silvia Schreiber)

And

Arrowhead Family Medical Group  
(Prize money was generously donated by AFMG)



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