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- Preface -

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It is my pleasure to welcome you to Arrowhead Regional Medical Center's Fourth Annual Research Day. My thanks to each one whose research is illustrated in these Proceedings. It is my sincere hope that the submissions from this event may go on to help shape and focus future developments in medical care. Despite the many distractions and concerns which world and national events have engendered over the past year - it is encouraging to see the level of commitment and focus that the residents at ARMC have maintained in developing meaningful research projects.

I encourage you to read through the Proceedings and engage the various authors in discussion. Perhaps some of the articles will provide inspiration for further studies and projects. A special thanks, again, to Dr. Edward Lee. It was he who had the original idea to develop an ARMC resident research day, and who has perpetually lent expertise and enthusiasm to make this event a reality for the past four years. As we continue this opportunity to showcase the research done here at ARMC, I am proud of the fine tradition of excellence and academic pursuit which these submissions represent.

David Lanum, M.D.
Editor

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USE OF SEED (SPREADING EFFECTIVE AND EFFICIENT DIABETES CARE) DIABETIC REGISTRY TO IMPROVE CLINICAL OUTCOMES IN 20 DIABETIC PATIENTS AT MCKEE FAMILY HEALTH CENTER

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OBJECTIVE

The purpose of this study is to adopt the SEED (Spreading Effective and Efficient Diabetes Care) chronic care model by using a diabetic registry to organize data in the care of 20 diabetic patients seen at the McKee Family Health Center. By using this registry, we will evaluate if it will improve patient care, clinical outcomes and increase clinical efficiency in the care of diabetic patients. The objective is to specifically evaluate whether the use of the SEED diabetic registry will improve diabetic care outcomes based on seven parameters as set by the CDC guidelines in chronic diabetic care. These parameters are:

1) HbA1c testing - at least 90% of patients (n=20) will have at least 2 HbA1c tests per year;
2) HbA1c goal - at least 60% will have HbA1c goal of < 7.0;
3) BP control - at least 60% of patients will have most recent BP<130/80mmHg;
4) LDL control - at least 80% of patients will have most recent LDL<100mg/dl;
5) Retinal examination - at least 90% of patients will have dilated eye/retinal examination within 1 year;
6) Influenza vaccine - at least 90% of patients will have flu vaccination within 1 year
7) Pneumonia vaccine- at least 90% of patients will have pneumonia vaccination at any point in time.

MATERIAL AND METHODS

Baseline information, diagnostic and laboratory data available from the outpatient clinic charts and Arrowhead Regional Medical Center electronic medical records from June 1, 2007 up to April 30, 2009 were used for the diabetic registry. A specially designed progress note derived from the registry was utilized in clinic encounters to provide care for 20 diabetic patients and document most recent diabetic data as well as keep track of necessary interventions required to provide overall diabetic care (such as eye examinations). Patients were seen at least 2 times to be included in the cohort.

Results are expressed in the table below:

Parameters	Study Result n=20	Compared from Data 06/2007 to 06/2008	Goal
1. HbA1c at least 2 test/year	80%	66.7%	90%
2. HbA1c <7.0	35%	28.6%	60%
3. Latest BP <130/80mmHg	45%	64.3%	60%
4. Latest LDL <100mg/dl	36.8%	58.3%	80%
5. Retinal Examination	80%	6.7%	90%
6. Pneumonia vaccine	95%	53.3%	90%
7. Influenza vaccine	80%	20%	90%

CONCLUSION:

The set goals were not met in six of the seven parameters in this patient cohort. The only goal met was pneumococcal vaccination rates. However, there was significant improvement in clinical outcomes in five out of seven parameters in comparison to available data from June, 2007 to June, 2008 which translates that the diabetic registry may be a useful tool in assisting the provider to address deficiencies in the diabetic care of these 20 patients. Furthermore, given the short time span of this study, it is our expectation that if we continue to use this diabetic registry for a longer period of time, we may actually meet CDC goals in these seven parameters for our patients.

THE ASSOCIATION OF TWO OR MORE HISTOLOGICALLY DISTINCT PRIMARY INTRACRANIAL NEOPLASMS IN THE SAME INDIVIDUAL

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We present the case of a 22 year old Hispanic female who was referred to our emergency department by her optometrist for evaluation of bilateral papilledema. The work up, which included a non-contrasted computed tomography scan of the head, revealed two rather large brain masses with very different radiographic features; one in the midline of the posterior fossa with mainly cystic changes and a suspicious mural nodule and a second in the left frontoparietal region that appeared to be arising from within the lateral ventricle. For simplicity of our discussion we identify the left supratentorial lesion as ***Mass 1*** and the infratentorial lesion as ***Mass 2***. Both masses demonstrated features strongly suggestive of primary brain tumors, yet individually they appeared entirely dissimilar.
The patient was taken to the operating room where consecutive craniotomies and gross total tumor resections were performed first on Mass 1, confirmed to be arising from within the lateral ventricle, and then on Mass 2. The final pathology results confirmed ***Mass 1*** to be compatible with an Atypical Meningioma (WHO Grade II) and ***Mass 2*** with a Pilocytic Astrocytoma (WHO Grade I). There were no intra-operative complications and the patient did well postoperatively. She was discharged home after a 19 day hospital stay.
The finding of two or more primary brain tumors with different histological classifications is uncommon. In addition to presenting this unique case, this report intends to investigate the etiology and incidence of multiple primary brain tumors with different histological classifications and to describe and discuss various disease entities associated with this process.

CHARACTERIZATION OF THE H37 TUMOR SUPPRESSOR GENE AND IMPLICATIONS FOR THERAPEUTIC INTERVENTIONS IN LUNG CANCER

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Lung cancer is the leading cause of cancer death in U.S. Thorough knowledge of the molecular pathogenesis of this malignancy is pivotal for developing novel diagnostics and therapeutics. Chromosomal deletion at 3p21.3 is the most frequent and the earliest genetic alteration observed in lung cancer, occurring in ~80% of all lung cancer types and even in the normal epithelia of smokers' lung. Therefore, the putative tumor suppressor gene(s) (TSGs) contained in this region are particularly promising for applying to lung cancer clinical management. *H37,* one of the 19 genes residing at 3p21.3, in particular has manifested prominent TSG characteristics; 1) Decreased expression of H37 mRNA/protein in ~75% of the primary lung tumors compared with adjacent normal lung epithelia, 2) Growth inhibition, *in vitro/vivo*, of lung cancer cells induced by H37, 3) H37's TS mechanism through G1/S arrest and apoptosis. Its exact cellular functions, however, remains yet to be uncovered in order to develop H37 long term gene - based novel cancer therapy. To this end, yeast two-hybrid screening was performed to find H37's protein binding partners. Presently, 9 proteins have been confirmed for their interaction with H37 in yeast cells, and their identity revealed by sequencing. Future validation of H37's true biologic protein partners is hoped to help mapping out H37- mediated TS pathway and streamline the most effective clinical strategy utilizing H37 TS activity.

TALKING WITH PATIENTS ABOUT RELIGION AND SPIRITUALITY: A SURVEY OF RESIDENTS AT ARROWHEAD REGIONAL MEDICAL CENTER

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BACKGROUND:
Recently, there has been an increasing scientific interest in the connection between spirituality, emotional and physical health. Over 90% of Americans say that they pray and believe in God and 79% of U.S. adults believe that spiritual faith can help people recover from illness, injury or disease. Most people believe that physicians should consider their spiritual needs as part of their medical care. However, most physicians do not discuss these issues with their patients.

There are few studies that evaluate physicians in addressing religious and spiritual issues with patients. There are even fewer studies that evaluate residents. This study aims to evaluate a group of residents from different training specialty programs at and their beliefs and behavior in talking with patients about religion and spirituality. Our objective is to determine 1) resident beliefs about talking with patients about religion and spirituality, 2) to determine if residents do talk with patients about religion and spirituality, 3) what barriers do they have that prevent them from discussing these issues and finally 4)to determine the relevance of incorporating a distinct workshop that trains residents how to address the religious and spiritual aspects of patient care.

METHOD:
In 2009, 30 residents responded to an online survey administered via surveymonkey.com website. They were asked to respond to several statements regarding religion and spirituality issues with patients using a 4 point or 5 point scale. The survey was responded to anonymously and data was gathered through this website.

RESULTS:
We found that although most residents don't consider themselves religious, most considered themselves spiritual. Most residents agree and recognize the fact that religion and spirituality can impact their patient's health. However as strongly as some of our residents believed in this, they did not ask about or discuss these issues all of the time. The residents identified multiple barriers that prevented them from discussing religious and spirituality issues with patients. Most of our resident agreed that they would benefit from a religion and spirituality medicine workshop.

CONCLUSION:
The finding that residents were not asking or discussing these issues as strongly as they believed can be attributed to the barriers that they identified. Since most residents believed they would benefit from a religion and spirituality in medicine workshop, it is possible that ways to overcome these barriers can be addressed here and thereby improve patient care.

EVALUATING OUTCOMES OF RELATIVE DOSE INTENSITY IN OPTIMIZING DELIVERY OF CHEMOTHERAPY

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BACKGROUND:
Determining the causes of the relative dose intensity (RDI) can further increase the survival rate for early stage breast cancer patients when detected.

PURPOSE:
Our study intended to evaluate the management of clinical outcomes in early-stage breast cancer patients in order to optimize the delivery of chemotherapy to patients. The primary endpoint of this study is to evaluate the RDI and determine if an appropriate dose was given to the patient. The secondary endpoint is to determine if the dose delays are related to treatment or external factors.

METHODS:
In this retrospective chart review of current chemotherapy patients, we reviewed patients who have completed a minimum of four chemotherapy cycles from January 2007 to December 2008 at Arrowhead Regional Medical Center. We had anticipated to include approximately 150 patients over a 3 month selection period; however only 56 patients fit the inclusion criteria. Female patients were chosen if they had a diagnosis of Stage 1 - 3 breast cancer and received adjuvant chemotherapy. The following data elements were collected chemotherapy regimen, age, body surface area, frequency of administration of cycles, febrile neutropenia, myelosuppression, mucositis, nausea and vomiting. Patients were excluded if they had incomplete chemotherapy cycles and if the breast cancer metastasized.

RESULTS:
After reviewing the patients over 3 months, patients were evaluated for complications after receiving their chemotherapy. Most of the clinical outcomes were not severe to reduce or discontinue the chemotherapy cycles. The average relative dose intensity in all the patients reviewed was 87.4%. Out of the 56 patients reviewed, only 30% of the patients (n=17) had a delay in their chemotherapy cycle. From this group, 58% of the patients (n=10) had a delay in their cycle due to external factors. The RDI due to external factors delay was approximately 74.4%. There was less than 1% (n=1) occurrence of a patient suffering from febrile neutropenic event causing a delay in dose.

CONCLUSION:
Relative dose intensity is a very important factor of which patients, healthcare providers, and staff should all be aware of. If the relative dose intensity is less than 85%, the chances of curative rate in optimizing chemotherapy decreases. A majority of the delays were primarily due to external factors that were not associated with the physician's treatment.

WHERE ARE THEY NOW? : A SURVEY OF RECENT GRADS OF THE FAMILY MEDICINE RESIDENCY PROGRAM AT ARMC

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BACKGROUND
New family medicine doctors will have typically trained in a four year medical school and a three year residency program before continuing onto their careers. The Family Medicine Residency Program at Arrowhead Regional Medical Center (ARMC) is a three year program and matriculates approximately twelve family medicine doctors in each class year.

PURPOSE
To determine practice choice characteristics of recent graduates of the ARMC Family Medicine Residency Program into primary care and develop some insight to the decisions graduates made in beginning their practices.

METHODS
An eighteen question survey was created asking questions about the types of practice recent graduates have gone into, the reasons for selecting their practice and whether their residency training was adequate. Using a modified Dillman method of survey sampling the survey was sent to sixty recent graduates from the last four years.

RESULTS
Of the sixty graduates identified, thirty five responded to the survey (58%). All who responded were practicing medicine. None were in the military. Twenty eight (80%) were practicing some classical outpatient primary care medicine with two (6%) incorporating OB into their practice. Twenty one (60%) did some urgent care, with four (11%) of dedicating most of their time to urgent care. Four (11%) stated that seventy percent or more of their practice was as an hospitalist. Primarily citing proximity to home and family, and lifestyle reasons; all but four (89%) practiced in urban locales. The reasons given for the type of practice chosen included locale but also cited flexibility in practice, variety, and autonomy. The seven not practicing outpatient clinical medicine added less paperwork and compensation as reasons. Ten practiced in a group of twenty or more, nine did not belong to a group. Eight reported having an academic affiliation teaching residents and students while an additional two said they taught students. Although all felt that the program was adequate for family practicemost (60%) did feel the program should offer more education in the area of starting and managing a practice,and especially billing and coding.

CONCLUSION
The trends from this survey show that recent graduates of the ARMC Family Medicine Residency Program in providing primary care prefer to stay in the local urban area, join a group and not practice obstetrics; 20% have eschewed classical outpatient primary care altogether instead choosing to work as hospitalists or as urgent care physicians. ARMC Family Medicine graduates cited proximity to home and family as the main concerns in deciding where to practice. Whereas, flexibility/autonomy, lifestyle and compensation were factors that influenced the type of practice they chose. Graduates do feel adequately trained but feel the need for more practical business management for starting/running a practice.

ASSESSING GLOBAL GENE EXPRESSION PROGRAMS IN RENAL CELL CARCINOMA BY NONINVASIVE IMAGING

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PURPOSE
Renal cell carcinoma (RCC) ranges widely in its genetics, biology, and thus in its prognosis and response to targeted molecular therapies. We hypothesize that a bioinformatic approach can identify features on computed tomography (CT) which indicate specific gene expression properties in RCC tumors.

METHODS AND MATERIALS
We constructed a global radiogenomic association map between discrete imaging features seen on CT scans and gene expression profiles in 54 RCCs. We first defined and quantified 37 candidate and 21 derived imaging features across each scan. Next, we used bioinformatic analysis to create associations between each feature and expression of ~4700 variably expressed cDNA elements from microarray gene expression analysis. For this, we calculated Spearman rank-correlation coefficients and corrected for statistical significance by using multiple permutations (N=1000) to generate a data distribution. We then identified imaging traits that were predictive of 13 distinct gene expression signatures related to known biological processes (e.g. proliferation, hypoxia-induced, overall survival, collagen production). Gene set enrichment analysis was used assess whether specific gene sets were differentially expressed in tumor subgroups formed using image feature scoring. Finally, clinical and pathologic outcomes analysis was integrated into the radiogenomic association map.

RESULTS
88.1% of the RCC gene expression profile could be reconstructed using the imaging traits, providing bi-directional insights into the relationship between RCC imaging features and their gene expression patterns. All 13 gene sets were significantly associated with at least one trait. Of note, degree of tumor enhancement was strongly associated with a previously validated RCC-specific survival gene signature, and tumor necrosis correlated with the proliferation and collagen gene signatures. Also, we noted that a signature up-regulated in smooth muscle cells was strongly predictive of poor overall survival in our tumor set, and that multiple imaging features were strongly associated with this signature. Finally, our radiogenomic association map provided insights into differences in gene expression patterns between different stage tumors (e.g. renal vein thrombosis and the proliferation gene set).

CONCLUSION
With a bioinformatic approach, we were able to use imaging features to predict a large fraction of the RCC transcriptome, obtain non-invasive insights into RCC tumor biology and identify molecularly distinct subtypes with clinical implications. This approach may be further extended using new imaging modalities and techniques as data permits.

GRAVES' DISEASE – AN UNUSUAL PRESENTATION OF OPHTHALMOPATHY

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OBJECTIVE:
To describe a case of unilateral Graves' ophthalmopathy occurring after a prolonged respiratory illness and emotional stress.

METHODS:
We present a case report that includes clinical, laboratory, and radiologic findings and a brief review of the literature.

RESULTS:
A 38 year old Hispanic male developed left eye ptosis and diplopia after suffering a prolonged respiratory tract infection and severe emotional stress. Prior to becoming hospitalized in Guatemala, the patient used tobacco. A CT scan of the head was negative for masses. Thyroid studies were normal but the patient developed both thyroid peroxidase antibodies and TSH Binding Inhibitory antibodies. The patient was started on Prednisone 30mg a day orally without improvement of the diplopia and left ptosis after two months.

CONCLUSION:
It remains unknown if the combination of genetics, tobacco, and severe emotional distress played a role in the development of the disease of this patient. Unilateral ophthalomopathy is less common in the literature. Bilateral involvement is the rule on imaging studies but the signs of the eye disease may be more apparent unilaterally, as was the case in this patient.

EFFECTS OF IMPLEMENTATION OF A RAPID RESPONSE TEAM AT ARROWHEAD REGIONAL MEDICAL CENTER

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BACKGROUND
With the added emphasis on patient safety and the Institute of Healthcare Improvement's (IHI) campaign to "Save 10,000 Lives", the implementation of rapid response teams (RRT) has been the new trend among hospitals world-wide. Rapid response teams are one of six strategies promoted by the IHI's now "Save 5 Million Campaign" in an effort to decrease the number of cardiopulmonary arrest rates outside of the ICU, and therefore reduce hospital wide mortality. An RRT is a team designed to respond to a patient who is clinically declining and is at risk for an impending cardiac arrest.

DESIGN
A review of the number of non-intensive care unit (ICU) code blues before and after implementation of an RRT at Arrowhead Regional Medical Center (ARMC), a 343-bed, level II, academic county facility, serving one of the largest counties in California, in Colton, CA. Data was collected between January 2007 and March 2009, and the average daily census was 312.9, during this time.

INTERVENTION
Using IHI's protocols a two member RRT was created with an experienced ICU charge nurse and senior respiratory therapist who performed the evaluation, treatment and triage of inpatients with a decline in clinical stability. With the assistance of the primary physician to facilitate orders.

MAIN OUTCOME
Review of rates per 10,000 bed days comparing 3-months prior to implementation and three-months post implementation in 2007, showed an initial 20% decrease in the number of non-ICU code blues.

CONCLUSION
The initial decrease in non-ICU code blues was not maintained in subsequent years and the number of bed days was not affected by the implementation of an RRT.

PANCREATIC ADENOCARCINOMA: A CASE REPORT

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Pancreatic cancer is one of the most deadly forms of all cancers. It is estimated that this year, approximately 34,000 Americans will be diagnosed with cancer of the pancreas and about the same number of Americans will die from this deadly form of cancer. Worldwide, pancreatic cancer is ranked 13th in incidence but 8th as a cause of cancer death. This disease is very difficult to diagnose in its early stages. At the time of diagnosis most of the patients have either distant disease or have regional spread. The chance of survival remains very slim and the overall 5-year survival rate for this disease is less than 5%. While surgery is the only form of cure, the majority of the patients are not candidates for surgical resection at the time of diagnosis due to the advanced presentation of the disease. Majority of the patients will need to undergo palliative treatment. The need for further investigation regarding this disease is clearly warranted.

APPROPRIATENESS OF HYSTERECTOMY INDICATIONS AT TWO COUNTY TEACHING HOSPITALS.

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OBJECTIVE:
To study the appropriateness and validity of indications for hysterectomy at two teaching hospitals and compare indications between the institutions and to published national standards.

METHODS:
We reviewed the records of 286 patients who underwent hysterectomy at these two teaching institutions from June 2005 to June 2008. We used a previously published indication profile system to organize and categorize the indications for this procedure. We then confirmed those indications that were expected to have abnormal tissue with pathology reports to validate the indication. We also created indication profiles of both hospitals and compared these profiles with published data on hysterectomy indications.

RESULTS:
A total of 286 hysterectomies were performed, with 144 (Group 1) and 143 (Group 2) performed at each of the two teaching institutions. Sixty-nine percent of Group 1 hysterectomies were abdominal and 31% were vaginal ($p > .05$). Seventy-four percent of Group 2 hysterectomies were abdominal and 26% were vaginal ($p > .05$). The indications for hysterectomy at these two teaching hospitals were: Symptomatic leiomyoma was the most common indication at both hospitals (50.7% and 43% respectively). The next most common indication was adnexal mass (14.6%), followed by pelvic relaxation (11.1%), and invasive cancer (9.7%) in Group 1 and recurrent uterine bleeding (18.3%), adnexal mass (9.9%), and pelvic relaxation (9.2%) in Group 2. Seventy-three percent of the hysterectomies were eligible for confirmation by tissue pathology (79% for Group 1 and 66% for Group 2). Of these cases 93.9% were confirmed for Group 1 and 92.6% were confirmed for Group 2. Overall, 93% were confirmed by tissue pathology when combining both institutions. In comparing the indications for hysterectomy between Group 1 and Group 2, no statistically significant differences existed ($p > .05$). Overall, Group1 and 2 differed significantly compared to national data in terms of the percent performed vaginally and the number that could be confirmed by expected tissue pathology. A chi square analysis showed the overall rate of vaginal hysterectomy to be significantly lower than the rate reported in several national and regional databases ($p < .05$). The overall percentage of hysterectomies that could be validated (confirmed) by tissue pathology was significantly higher as seen by chi square analysis ($p < .05$).

CONCLUSIONS:
Indications for hysterectomy are similar at different teaching hospitals managed by the same teaching staff and residents. Indications for hysterectomy are not significantly different from other regional or national databases. Differences with national data on indications for hysterectomy can be explained by regional differences in disease rates, training and practice style. The overall rate of vaginal hysterectomy was found to be significantly lower at the two teaching institutions versus national and regional databases. In this study, the percentage of hysterectomies that could potentially be validated (confirmed) by tissue pathology was significantly higher than percentages that have been reported by other regional and national databases.

NEW ONSET DIABETES MELLITUS INCIDENCES PRESENTING WITH WOUND COMPLICATIONS

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PURPOSE:
To perform a retrospective analysis of existing ARMC patient database to determine the incidence of new onset diabetes mellitus that is diagnosed after presenting with wound complications such as abscess, cellulitis, and ulcers.

EXPERIMENTAL DESIGN:
The study is a retrospective analysis determining the prevalence of newly diagnosed diabetic patients who presented due to wound complications to ARMC between the years of 2002 to 2006. The entire ARMC patient database was searched for patients presenting in the Emergency Department or clinics meeting the following criteria:

1. Diagnosis of diabetes mellitus with complication
2. Diagnosis of cellulitis, gangrene, abscess, or non-decubitus ulcer
3. Patient must be at least 18 years old.
4. Patients will NOT be excluded based on gender, ethnicity/ language, mental capacity, nor whether they are institutionalize or incarcerated.

RESULTS:
Our extensive search revealed 25 patients presented with new onset DM with wound complications between the years of 2002 to 2006.

CONCLUSION:
The best predictors of future lower limb amputation are a history of a previous foot ulcer, the presence of neuropathy and peripheral arterial disease, and poor glycemic control. These complications are primarily seen in the setting of known diabetics who have over years failed to maintain adequate glycemic control, whether due to non-compliance or inadequate treatment. However, there is a subset of patient who simply were not diagnosed and presenting with wound complications. Though initially small in number, there are dramatic long term repercussions with each case from a financial and psycho-social aspect for the duration of a patients' life span. 2000 WHO data states 171 million people are diagnosed with Diabetes as well as an estimate of 366 million Diabetics by 2030. Diabetic complications account for 60% of non-traumatic lower extremity amputations, most of which are not diagnosed soon enough to have a real impact on the outcome of the patient. Therefore, the data acquired from this study can contribute to future surveillance of pre-diabetes states, by better understanding the incidence and prevalence of diabetes immediately prior to or at time of presentation of wound complications.

WARFARIN INDUCED HEMORRHAGIC NECROSIS OF SMALL BOWEL

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A 76 year old Filipino female presented with a 3 day history of diffuse abdominal pain, nausea, vomiting, and diarrhea. She denied any melena or hematochezia. Her past medical history included paroxysmal atrial fibrillation, hypertension, and dyslipidemia. Her physical examination revealed an irregularly irregular heart rhythm. Her abdominal exam showed a soft, mildly distended abdomen with diffuse tenderness to palpation, however no obvious rebound or guarding. A rectal exam showed positive stool guaiac with no gross blood. Patient's labs showed a WBC of 13.4, Hb 9.1, Hct of 27.4, platelets of 254. Her PT 56.9, PTT 40, and INR 6. Her serum lactate was 1.7. CT abdomen and pelvis showed small bowel wall thickening and secondary proximal small bowel obstruction, along with ascites. Patient's coagulopathy was reversed with 2 units of ACP. Over a twelve hour period, patient's hemoglobin and hematocrit decreased to 7.7L and 22.9L, as patient was prepared for surgery.

Diagnostic laparoscopy revealed very edematous small bowel with necrotic portions. Surgery was then converted into an exploratory laparotomy. Hemorrhagic changes of the mesentery and 700cc of hemoperitoneum found. Sixty five centimeters of necrotic midjejunum was resected. Due to other patchy areas of questionable viable bowel, no anastomosis was performed. In the distal stomach there were also three centimeters of ischemic change. A Bogota bag was placed and patient was observed in the surgical intensive care unit postoperatively. Patient remained hemodynamically stable and returned to the operating room the next day. Upon re-exploratory laparatomy, all small bowel was pink and healthy-looking. The mesentery showed resolving hemorrhagic changes. A stapled anastomosis was performed. A gastric plication was performed at the area of ischemic tissue over the distal stomach. Abdomen was then closed. Final pathology diagnosis revealed diffuse hemorrhage and necrosis involving submucosa, muscularis propria, and serosa. Subsequently patient recovered well. Patient started on amiodarone and she converted to sinus rhythmn. Due to the pathology of her condition, she was no longer a candidate for warfarin. She was discharged with amiodarone and lopressor.
This case reports reveals that hemorrhagic infarction of the small bowel can be a complication of warfarin therapy, which subsequently may require surgical intervention. The average annual frequencies of fatal, major, and major or minor bleeding during warfarin therapy have been reported as 0.8%, 4.9%, and 15% respectively.

CAROLI DISEASE – A RARE CAUSE OF CHOLANGITIS

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Caroli Disease, also referred to as communicating cavernous ectasias of the intrahepatic biliary system, is an extremely rare AR disease. It is also classified as a type V choledochal cystic disease according to the Todani classification; however, in actuality this is a misnomer as Caroli disease only involves the intrahepatic biliary system in contrast to types I-IV. In the United States, it is approximated that 1 in 150-200K people have choledochal cysts. Of these, Caroli Disease accounts for less than one percent. Two types of Caroli Disease exist on a spectrum ranging from pure form which is far less common to congenital hepatic fibrosis, aka "Caroli Syndrome." The disease is further subdivided into segmental versus diffuse involvement with the latter being far less common. This case discusses the presentation and radiologic evaluation of an adolescent with diffuse, pure form Caroli Disease and medullary sponge kidneys / renal tubular ectasia.

In this case, the diagnosis of Caroli Disease was not considered until the "central dot sign" was recognized on CT just prior to a scheduled attempt at image guided fluid aspiration of a hepatic cyst. Imaging is essential for the diagnosis of Caroli Disease and vital to the development of a treatment strategy. While the long term prognosis is poor for diffuse Caroli Disease, radiologic evaluation allows for initiation of preventive treatment strategies and optimal medical management of sequelae.

NICOTINE REPLACEMENT MONOTHERAPY VERSUS COMBINATION THERAPY WITH BUPROPION SUSTAINED RELEASE FOR TREATMENT OF TOBACCO DEPENDENCE: A SYSTEMATIC REVIEW

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BACKGROUND:
Cigarette smoking is one of the leading causes of preventable morbidity and mortality in the world. Currently, there are several pharmacological interventions available for smoking cessation. We performed a systematic review of studies that assess the efficacy of combination nicotine replacement therapy (NRT) and bupropion compare to nicotine replacement therapy alone for smoking cessation.

METHOD:
We conducted a literature search on double-blinded randomized controlled trial studies from various online databases, and found three studies that met our criteria for review: the Jorenby et al.[7] study, a multi-site study comparing bupropion, NRT, bupropion plus NRT, and placebo; the Simon et al.[8] study, a study conducted at a Veteran Affairs medical center comparing bupropion with placebo, in which both groups received NRT; and the Killen et al.[9] study, in which a similar study is conducted but with an adolescent population. The studies were then reviewed in a systematic manner, using a standardized worksheet.

RESULT:
In Jorenby et al. study, the abstinence rates at 12 months were 15.6 % in the placebo group versus 16.4 % in nicotine-patch group versus 30.3 % in bupropion group ($p<0.001$) versus 35.3% in combination group ($p<0.001$). In Simon et al. study, the 12 month quit rate validated by either saliva cotinine or spousal proxy were 22% in bupropion + NRT group and 28% in the NRT-only group ($p=0.31$). In Killen et al. study, abstinence rates at weeks 10 and 26 were as follows: 23% and 8% with the bupropion + NRT group, 28% and 7% for NRT-only group. For the latter two studies, the outcome of combination therapy did not reach statistical difference compared with the NRT-only group.

CONCLUSION:
We have concluded that the evidence currently available is not sufficient to demonstrate superiority of the bupropion-nicotine replacement combination therapy over nicotine replacement therapy alone.

PROTOCOL DEVELOPMENT: COMPARISON OF CONTINUOUS VERSUS INTERMITTENT VANCOMYCIN INFUSION FOR METHICILLIN-RESISTANT STAPHYLOCOCCAL INFECTIONS

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BACKGROUND:
Vancomycin is considered the antibiotic of choice for most methicillin-resistant staphylococcal (MRS) infections; however, efficiency and consistency of monitoring for therapeutic trough levels and hence clinical improvement still remains problematic. Continuous infusions provide an alternative mode of delivering the treatment of MRS in the acute care setting.

PURPOSE:
The primary purpose is to create a protocol for continuous vancomycin infusion (CIV). Secondary purpose is to compare the risk of nephrotoxicity and hospital-related cost between CIV with intermittent infusion of vancomycin (IIV).

METHODS:
The study is a prospective, single-center trial. IIV patients were included if their serum creatinine ≤2.0mg/dL, age>16, non-pregnant, and administered sequential doses of vancomycin. Concurrent antibiotic therapy was allowed.

RESULTS:
As of April 2009, only IIV data has been collected. The data was divided between documented MRS versus suspected MRS. At 48 hours, the mean white blood count was 12±5.2 and 8.5±3.3, mean band neutrophil 16.9±11.5 and 16.9±9, mean first trough level was 10.5±5.7 and 11.4±6.3, mean hours to first trough level was 36±22.4 and 48±33.6, respectively.

CONCLUSION:
Preliminary data illustrates that current monitoring of IIV are at the lower end of the vancomycin trough goals. Therefore, the results and clinical outcome will be affected by inaccurate dose adjustments. Previous studies have shown that CIV versus IIV are equivalent in efficacy and maintenance of steady-state levels. Preliminary data will be presented.

THE EFFECTIVENESS OF OUTPATIENT GLYCEMIC MANAGEMENT IN A SAFETY NET HOSPITAL

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BACKGROUND:
Diabetes is a serious and costly public health problem. More than 17 million Americans are affected with a higher incidence in the disadvantaged and uninsured patients. In the U.S., a large number of diabetic patients receive less than optimal care.

PURPOSE:
To evaluate the results of glycemic management by ARMC primary care physicians and nurse practitioners and to explore the potential interventions to improve the delivery of care.

METHODS:
Institutional Board Review approval was obtained prior to data collection. Medical records of diabetic patients currently being managed at Arrowhead Regional Medical Center Family Health Centers were reviewed. Data were collected retrospectively using both electronic and paper medical records. Patients aged of 18 or older, being under the care of the physician or nurse practitioner for one year or longer, and having a diagnosis of diabetes for one year or longer were included. Primary endpoint measure was the percentage of patients achieving the goal of hemoglobin A1c level less than 7.0 percent within the last 12 months. Other secondary measures were current antidiabetic agents used and diabetic complications.

RESULTS:
200 eligible records were reviewed. The median hemoglobin A1c was 10.1 (95% CI 9.9-10.3). About 20 percent of patients achieved American Diabetes Association (ADA) hemoglobin A1c goal of less than 7 percent.

CONCLUSIONS:
The current glycemic management is suboptimal. A possible intervention to the improve glycemic control is to implement an intensive multidisciplinary program focusing on compliance with therapy and lifestyle changes.

STAGE 4 DIFFUSE LAMELLAR KERATITIS: CAUSES, MANAGEMENT, AND PATHO-PHYSIOLOGY

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Diffuse Lamellar Keratitis (DLK) is a rare complication of Laser-Assisted *In Situ* Keratomilieusis (LASIK). Traditional concepts of its etiology describe an antigen-antibody mediated inflammatory reaction, introduced at the time of surgery. Stage 4 DLK is described to result in a central lamellar keratitis with stromal melting, corneal scarring, and a hyperopic shift as a result of the central tissue loss. In eight (8) eyes with Stage 4 DLK, we demonstrate reversal of the hyperopic shift with topical hyperosmotics, reversal of the central scar, no demonstration of a stromal melt, and final visual acuities of 20/20 or greater. These findings suggest that the clinical signs seen in Stage 4 DLK are a result of a reversible loss in corneal interstitial fluid pressures (Pif) and not a structural loss of corneal tissue. There needs to be further research studying the influence of Pif on the physiology of the cornea in order to investigate these potentially paradigm-shifting findings.

SURGICAL OUTCOME OF COMMUNITY ACQUIRED *CLOSTRIDIUM DIFFICILE* COLITIS PRESENTING AS TOXIC MEGACOLON: A CASE REPORT

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INTRODUCTION
Over the past decade, there has been a rise in both community acquired and health-care associated *Clostridium difficile* colitis secondary to recent broad-spectrum antibiotic exposure. Toxic megacolon is a rare but serious complication of pseudomembranous colitis, which often requires emergent surgical intervention.

RESULTS AND DISCUSSION
Here we describe a rare case of community acquired *C. difficile* colitis, presenting to the Emergency Department as toxic megacolon, successfully treated with total colectomy.
A scarcity of literature exists on the success rate of surgical treatments for toxic megacolon. Post-colectomy mortality rates in these patients range from 38-80%.

CONCLUSION
Prompt surgical consultation may improve patient survival. The incidence of *C. difficile* related toxic megacolon and post-operative outcomes of total colectomy should be further investigated in a larger observational study.

GIANT FIBROADENOMA IN A 22 YEAR OLD PATIENT

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Giant fibroadenomas are a rare form of fibroadenoma that present as rapidly enlarging breast masses. They are typically greater then 5 cm or 500 mg in size and most frequently are seen in premenopausal Afro-Caribbean or East Asian females.

This unique case report presents a 22 year old female who presented with a large breast mass measuring 23 x 28 cm. After core needle biopsy the mass was diagnosed as a giant fibroadenoma and treated surgically with mastectomy. After a 5 year follow up she has not reported any signs of recurrence of the mass.

INTRAVITREAL BEVACIZUMAB FOR IRIS NEOVASCULARIZATION WITH AND WITHOUT NEOVASCULAR GLAUCOMA

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[2]Loma Linda Department of Ophthalmology

PURPOSE:
To describe a cases series of iris neovascularization with and without neovascular glaucoma treated with intravitreal bevacizumab.

DESIGN:
A retrospective, interventional case series.

METHODS:
16 eyes of 14 patients demonstrating iris neovascularization with and without neovascular glaucoma were treated with 1.25 mg/0.05 cc of intravitreal bevacizumab and panretinal photocoagulation. Recurrence of neovascularization was treated with re-injection of intravitreal bevacizumab. If intraocular pressure could not be controlled despite medical management, a shunt operation was performed.

RESULTS:
All eyes with iris neovascularization (15/15) and all eyes with documented neovascularization of the angle (6/6) demonstrated regression of neovascularization within 1 week of intravitreal bevacizumab. 7 of 16 eyes required re-injection with intravitreal bevacizumab due to recurrence of neovascularization. Control of intraocular pressure (< 21 mmHg) was attained in 10 of 16 eyes (63%) within 1 week of intravitreal bevacizumab and in 11 of 16 eyes (69%) at the end of follow-up period. 7 of 16 eyes (44%) required subsequent placement of an Ahmed valve. No significant ocular or systemic adverse events were observed.

CONCLUSIONS:
Intravitreal bevacizumab with subsequent panretinal photocoagulation leads to rapid regression of iris and angle neovascularization. It may also facilitate control of intraocular pressure. Long-term follow-up demonstrated recurrence of neovascularization requiring additional injections and almost half of the eyes eventually requiring shunt placement. Large, prospective trials are needed to further elucidate the role of intravitreal bevacizumab in the management of neovascular glaucoma.

SURVEY ON RESIDENT MEDICAL EDUCATION AT ARROWHEAD REGIONAL MEDICAL CENTER

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A 29 question survey administered to resident physicians at Arrowhead Regional Medical Center (ARMC) dealing with educational preferences and suggestions for improvement.

The survey reveals that a majority of residents prefer the current system of medical education, including patient care, didactics, and teaching rounds, but many do not enjoy "pimping" (questions by the attending physician). When learning about new topics or new procedures, most residents prefer to have some preparation including reading material or from observation. Residents appear to be receptive to new mediums of education including simulation, medical jeopardy and video based learning. On average most residents would prefer didactic sessions once a week, and most residents state that they attend most of the scheduled lectures at ARMC. The two most common reasons for missing lectures include having patient care duties or not being present in the hospital at the time of the lecture. Many residents believe that presenting an educational topic to peers would be of educational benefit, and that the preferred size of the audience should be less than 50 peers. Group learning sessions, where topics are discussed, should comprise of less than 10 participants. More than half of the residents taking the survey would like to see journal club every month, and most residents state that they actually read the journal articles prior to attending journal club sessions. An overwhelming 85% of residents state that they learn best through experience, as opposed to visual, verbal, or text media. 82% of residents would like more scheduled didactics at ARMC. Most residents prefer an interactive lecture, where residents are involved in topic discussion and questions. When asked to rate current morning report and morbidity and mortality conferences at ARMC on a scale of 1 to 5, the score averages 2.82, however a third of the responses were a score of 4. Many residents prefer an intermediate level of supervision by attending physicians, allowing a balance of autonomy and supervision. Most residents feel comfortable making medical decisions in less than a week of starting a new service. Reading material provided prior to starting a new clinical rotation would benefit residents. Most residents would prefer teaching rounds to last no longer than 2 hours. Impediments to learning during rounds including having too many orders, and insufficient time for discussion. Many residents would prefer dedicated time after rounds with attending physicians several times per week for education. Residents do not have a preference on the format of teaching rounds, sitting versus walking rounds. 94% of residents prefer attempting to formulate a plan of care when faced with a complicated patient. Most residents believe that a reasonable reading assignment is 5 pages per evening. Finally, when asked what would improve medical education at ARMC, many responses were focused on increasing educational time and decreasing resident service responsibilities.

The results of this survey are aimed toward helping attending physicians at ARMC make the appropriate adjustments in curriculum, in efforts to continually improve resident education.

TROPONIN ELEVATION IN SEVERE SEPSIS AND SEPTIC SHOCK

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BACKGROUND
It is well known to the medical community that cardiac troponin I (cTnI) is elevated in myocardial infarction. However, cTnI is also elevated in numerous other disease states. We frequently observe that cTnI is elevated in patients with severe sepsis and septic shock. It is not clear what the implication of cTnI elevation may be in these situations. In this three year retrospective analysis of patients with the diagnosis of severe sepsis and septic shock, we are attempting to characterize the relationship between hospital mortality rates of those patients with cTnI elevation and those without cTnI elevation.

METHODS
We reviewed patients with a diagnosis of severe sepsis and septic shock at Arrowhead Regional Medical Center, Colton, California, from January 1, 2005 to December 31, 2007. We confirmed that all cases were properly diagnosed by checking for leukocytosis, bandemia, microbiology culture results, and discharge summaries. Inclusion criteria were those patients with confirmed severe sepsis or septic shock with a cTnI blood test. Patients with sepsis and at least one sign of organ hypoperfusion or organ dysfunction were classified as having been in severe sepsis. Patients who received vasopressors such as norepinephrine or dopamine were classified as having been in septic shock. Exclusion criteria were any other causes that could affect troponin or mortality i.e. esrd on hemodialysis, trauma, acute MI, acute CHF, end stage malignancy, esld.

RESULTS
A total of 180 patients met the above criteria. We used a cTnI cut off of 1.5 µg/L. There were 115 patients with septic shock and 65 patients with severe sepsis. In the group with septic shock, the total number of patients with cTnI elevations was 40 (40/115 = 35%) and these patients had a mortality rate of 70% (28/40). Mortality among the patients with septic shock without cTnI elevation was 64% (48/75 = 64%) with p value = 0.25. In the severe sepsis group, the total number of patients with cTnI elevations was 12 (12/65 = 18%) and the mortality rate was 50% (6/12 = 50%). Mortality among patients with severe sepsis without cTnI elevation was 23% (12/53 = 23%) with p value = 0.027.

CONCLUSION
Even though the literature has reported that cTnI elevation can be an indicator of severe sepsis and septic shock, our data indicates that cTnI elevation does not change hospital mortality rate in septic shock. However, in severe sepsis the hospital mortality rate is significantly higher in patients with a cTnI elevation (50%) compared to those without cTnI elevation (23%) with a p value of 0.027 (<0.05). Therefore, cTnI elevation could be used as a prognostic marker for patients with severe sepsis.

PENETRATING NAIL GUN CARDIAC INJURY

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ARMC

CASE PRESENTATION:
24 year old Hispanic male presented to ARMC trauma center with an intentional nail gun accident penetrating the heart. The patient was hemodynamically unstable on presentation, and a FAST scan was positive for cardiac tamponade. He was emergently taken to the OR where he underwent median sternotomy with extraction of the nail followed by repair of right ventricle injury. The patient did well and was discharged six days after his admission with no complications during or after his hospital stay.

INTRODUCTION:
Nail guns are powerful tools used to introduce nails rapidly into timber, concrete, and light metal work. They dramatically increase efficiency but at the same time, increase the risk of significant injury.

DISCUSSION:
There has been an alarming increase in nail gun injuries- up 200% since 1991. This is due to the increasing availability of the tool to the general public for everyday use with limited training. Injuries are most common to the upper and lower extremity, 75% and 17% respectively. Usual cause is accidental (11% mortality); however, when the injury is to the heart careful consideration should be made for attempted suicide versus homicide (overall 40% mortality).

MANAGEMENT:
In penetrating cardiac nail gun injuries, the management is one of expedient surgical intervention. In addition, psychiatric or law-enforcement involvement is needed in intentional injuries.

PREVENTABLE MEASURES:
Appropriate education and limiting availability of nail guns to pneumatic nail guns with sequential triggers can both help reduce the recent increase in nail gun injuries. Sequential triggers require the nose to be depressed before the manual trigger can discharge a nail, therefore making the unintentional discharge of nails less likely.

CONCLUSION:
Nail gun injuries have increased in the past 15 years and most remain unintentional. However, if the injury is to an unusual organ, such as the brain or heart, the injury is more likely to be intentional. The management of such patients requires emergent surgical intervention and consultation of the appropriate authorities.

WEGENER'S GRANULOMATOSIS: A CASE REPORT

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Wegener's granulomatosis (WG) is a complex, immune-mediated vasculitis affecting commonly the upper, lower airway as well as the kidneys. The hallmark of WG is the presence of anti-neutrophil cytoplasmic antibodies (ANCA). This case report describes a patient who initially presented with lower gastrointestinal bleeding, impaired hearing and acute renal failure, then returned on subsequent admission for hemoptysis, and pleuritic chest pain. This patient was managed with respiratory supportive care without intubation, high dose steroid, cyclophosphamide, and hemodialysis. Once patient was stable, renal biopsy was performed and confirmed WG. Patient returned home after twenty-one day hospitalization with resolved hemoptysis and respiratory failure, yet renal failure persisted. Clinical presentation, diagnostic blood tests/imagings, and initial as well as maintenance therapy of WG are also discussed.

30 YEAR OLD MALE WITH AMBIGUOUS GENITALIA

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A 30-year-old Hispanic gentleman presented to the emergency department at Arrowhead Regional Medical Center complaining of bilateral flank pain and fever for one day, in addition to bloody urine and cramping abdominal pain for three days. Additionally, he complained of intermittent hematuria which occurred approximately every 4 weeks since the patient's kidney transplant in 2001. The patient reports the hematuria is usually always accompanied with the same cramping lower abdominal pain, usually 4/10 in severity. Past medical history was significant for Congenital bilateral renal hypoplasia, and right kidney transplant in 2001. Patient was taking immunosuppressive medications since his kidney transplant in 2001. Physical exam was significant for abscent body hair, gynecomastia, and ambiguous genitalia with the appearance of clitoromegaly with partially fused labia, without palpable masses or testicles within the labial folds. There was no distinctly visible vaginal orifice. The patient's urethral meatus was located on the ventral base of the clitoral-labial junction. There were bilateral oblique inguinal surgical scars from exploration for undescended testicles. Renal Ultrasound revealed a normal appearing uterus and left ovary. Karyotypic evaluation revealed 46,XX.

We found this case to be particularly interesting since it is rarely a diagnosis made in adulthood. Although general practice dictates all cases of ambiguous genitalia undergo full diagnostic workup before gender assignment is made, our patient was born in rural Mexico in 1978, and lived there for 16 years. Therefore, it is entirely conceivable that the rural healthcare system at that time did not have an adequate testing procedure in place to properly diagnose and manage this patient. Moreover, he matured well into adulthood before an appropriate diagnosis was made despite his multitude of hospitalizations and surgical intervention. There is little literature on discovering such condition in adulthood, so our discussion is based primarily on neonatal evaluation. The initial evaluation of the infant with a disorder of sex development should include determination of sex chromosomes via Karyotype analysis and assessment of adrenal steroids. Initial laboratory testing should include serum electrolytes, 17-hydroxyprogesterone, cortisol, 11-deoxycortisol, 17 -hydroxypregnenolone, DHEA, and ACTH to evaluate for the possibility of congenital adrenal hyperplasia [1]. Pelvic and abdominal ultrasonography should be performed to determine the development of internal sexual organs. In the case of our patient, we will not be able to accurately assess adrenal and gonadal steroid values because the patient is currently receiving steroid therapy for renal transplant. In general, a diagnosis of DSD should be considered in infants who have bilaterally nonpalpable testes, microphallus (stretched penile length less than 2.5 cm in a full-term infant), perineal hypospadias with bifid scrotum, clitoromegaly, posterior labial fusion, gonads palpable in the labioscrotal folds, or discordant genitalia and sex chromosomes [1].

CORRELATION OF PLACENTA LOCATION WITH BLOOD LOSS AT TIME OF CESAREAN SECTION

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ABSTRACT:
The increase in placenta previa associated with the increase in the cesarean section rate has been link to an increase in blood loss, blood transfusion, and cesarean-hysterectomies among other complications. The purpose of this study is to review whether any other placenta location is associated with complications at the time of delivery via cesarean section.

MATERIAL AND METHODS.
A total of 653 cesarean section, in which ultrasound performed within 1 week of surgery, were reviewed, looking for age, parity, number of previous cesarean sections, estimated blood loss, hematocrit and hemoglobin before and after cesarean section, whether a hysterectomy was performed, whether patient received blood transfusion. Placenta locations were classified as anterior, posterior, anterior/posterior/fundal, low-lying and previa. Differences were compared by Chi-Square, with significance of < 0.05.

RESULTS. The demographics are presented in Table 1

Placenta	Gravida	Parity	# PCS	BW	Diff HgB	Hysterectomy	n
Anterior	3.3 ± 2.2	2.5 ± 1.6	1 ± 1	3296 ± 671	1.7 ± 1	0	311
Ant & Post	3.1 ± 2.5	2.2 ± 1.4	0.2 ± 0.5	2614 ± 506	2 ± 1.2	2	21
Fundal	3.3 ± 2.8	2.7 ± 2.1	0.9 ± 0.8	3062 + 807	2 ± 1.3	0	27
Low-Lying	3.0 ± 1.9	2.4 ± 1.5	0.8 + 1.0	3306 + 740	1.7 ± 1	0	14
Posterior	3 ± 1.1	2.4 ± 1.1	0.5 + 0.8	2592 ± 1073	2 ± 1.1	3	270
Previa	3.1 ± 2	2.5 ± 1.6	0.9 + 1	3252 ± 730	1.7 ± 1.1	1	9

Mean ± SD. Birthweight (BW) for patient with anterior/posterior placenta was significantly lower than for other placentation.

CONCLUSIONS:
In this group of cesarean section, the rate of required hysterectomy varied from 1:9 for placenta previa and anterior/posterior placenta to 1:90 for placenta posterior. The incidence is much higher than previously described. There were no differences in term of drop of hemoglobin before and after the cesarean section. The correlation between the clinical estimated blood loss at time of surgery and the hemoglobin drop (one of the ways to measure more accurately blood loss at cesarean section) was very poor. The latter has implication in blood replacement in cases of rapid blood loss in Obstetrics.

MMP 2 AND MMP 9 EXPRESSION IN THE MOUSE EYE AND THE EFFECT OF TOPICAL PROSTAGLANDIN ON MMP EXPRESSION

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PURPOSE:
Topical prostaglandins, which signal through the prostaglandin (PG) FP receptor, lower intraocular pressure (IOP) in monkeys. Treatment is associated with an upregulation of matrix metalloproteinases (MMPs). We have previously demonstrated that single applications of topical prostaglandins reduce IOP in the mouse, but the effect of treatment on MMP expression is not known. The current study was undertaken to determine the distribution of MMP expression in the mouse eye and to determine whether MMPs are upregulated by topical prostaglandins.

METHODS:
The right eyes of Swiss White mice were treated daily for seven days with topical latanoprost, while the fellow eyes were treated with a vehicle control. MMP 2 and 9 expression was investigated at the protein level by immunohistochemistry (n=5). Fluorescence intensity was quantified from digital photographs using image analysis software. MMP 2 and 9 expression at the gene level was determined by real–time PCR in uvea, retina, and sclera from pooled tissue of treated and untreated eyes (n=12).

RESULTS:
Constitutive MMP 2 expression is widespread in the ocular tissues of the mouse eye, while MMP 9 expression is generally weaker than that of MMP 2. Treatment with latanoprost had no significant effect on MMP 2 and MMP 9 expression at the protein level. At the RNA level, however, treatment with latanoprost yielded significant upregulation of MMP 2 and MMP 9 mRNA. For MMP 2, there is a 1.28 fold increase in the sclera, 1.11 fold increase in the retina, and a 3.56 fold increase in the uvea, while for MMP 9, there is a 2.22 fold increase in the sclera, a 1.09 fold increase in the retina, and a 1.16 fold increase in the uvea.

CONCLUSIONS:
MMP 2 and MMP 9 are expressed constitutively in the mouse eye. We did not detect significant upregulation by immunohistochemistry after seven days of treatment with topical latanoprost. However, treatment resulted in an increase in MMP 2 and MMP 9 mRNA.

DUPLICATED GALLBLADDER: A CASE REPORT

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Duplication of the gallbladder is a rare entity. This case highlights a 36 year old female who presented to Arrowhead Regional Medical Center after referral from an outside institution with gallstone pancreatitis. Ultrasound, CT Scan and MRCP showed evidence of a biliary anomaly preoperatively concerning for a duplicated gallbladder or choledochocyst. Subsequent laparoscopic cholecystectomy and intraoperative cholangiogram confirmed the presence of a duplicated gallbladder. Second intrahepatic gallbladder with connection to right hepatic duct was identified and the first gallbladder connection to common hepatic duct was noted. Both gallbladders contained hundreds of small stones. The patient did well postoperatively and has had no adverse sequelae. A literature review revealed an incidence of 1 in 4000 autopsies had a duplicated gallbladder. Sixty one case reports have been published and only 13 cases managed laparoscopically.

PERFORATED DIVERTICULITIS AND HYPERBILIRUBINEMIA: A CASE REPORT

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The present case study evaluated elevated bilirubin and perforated diverticulitis. A 51 year old male had left sided abdominal pain, fever, and a total bilirubin of 10.6. A laparotomy showed perforated diverticulitis and a Hartmann's Colostomy performed. Bilirubin may be a marker of diverticulitis severity which could affect surgical timing.

PARALLEL PROCESS WITH PROVIDERS IN TRIAGE ALLOWS FOR SIGNIFICANT DROP IN WAIT TIMES IN LARGE VOLUME PUBLIC HOSPITAL EMERGENCY DEPARTMENT

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In the traditional Emergency Department a patient is triaged by a nurse in order to receive the next available bed and see the physician; this process is performed in a series. Our large volume public hospital reached severe levels of crowding and lack of Emergency Department beds due to boarding. When beds were full, processing of new patients, ambulances and teaching became very difficult. A different approach was warranted.

2004 was the start of trying to get providers closer to the triage area during times of crowding. This has culminated into moving providers full time to the triage area for initial assessment in February of 2008.

Planning process was initiated in 2006. The patient presents to a nurse for chief complaint. This triage nurse is at an open podium in the waiting room. The patient then goes into one of six office cubicles in the waiting room for immediate physician or physician assistant assessment.

If patient has minor problem, they are treated and discharged. If all beds are full, phlebotomy and radiography are initiated while patient is waiting. If ancillary test are completed prior to a bed becoming available, the patient is re-assessed in a 're-evaluation area'.

Registration is completed after physician/ PA evaluation. The total cost for the re-engineering process was under 75,000 dollars.

Measurement of the Effect from Process Change on Resident Education

To deal with crowding, the parallel process with providers in triage was designed to evaluate increasing numbers of patients per hour while maximizing bed space. The new system design allows residents to work shifts concentrated on critically ill patients. This parallel process is also designed for residents to develop triage type skills and improve resource utilization. In order to assess resident's perception of the parallel process with providers in triage, a survey was distributed after its institution as to be demonstrated here.

An eleven-item Likert scale Internet questionnaire was emailed to PGY2, PGY3 and PGY4 residents eight months after institution of parallel process in the triage. Statements relating to residents perception of patient satisfaction, patient care, and their own educational process were rated by respondents from the level of Strongly Disagree – 1 to Strongly Agree – 5. Additional data was collected on annual Emergency Department census, percentage of patients left without being seen, and time from arrival to evaluation by Emergency Provider.

- 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)

3nd 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)

3nd 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)

3nd 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)

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Departments
of
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Transitional Program

Traditional Program

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