

OAKLAND UNIVERSITY WILLIAM BEAUMONT SCHOOL OF MEDICINE

PUBLICATION LIST

January - March 2017

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Abbas AE, Zacharias SK, Goldstein JA, Hanson ID and Safian RD (2017). "Invasive characterization of atherosclerotic plaque in patients with peripheral arterial disease using near-infrared spectroscopy intravascular ultrasound." *Catheterization and Cardiovascular Interventions*. ePub Ahead of Print.

[Full-Text](#)

Department of Internal Medicine

Objectives: We describe the characteristics of atherosclerotic plaque in patients with peripheral arterial disease (PAD) using near-infrared spectroscopy-intravascular ultrasound (NIRS-IVUS) **Background:** Imaging and autopsy studies have described atherosclerotic plaque in different vascular beds, including varying degrees of lipid, fibrosis, and calcification. Recently, NIRS has been validated as an accurate method for detecting lipid-core plaque (LCP) in the coronary circulation. Invasive evaluation of plaque composition using NIRS-IVUS has not been reported in different peripheral arterial circulations. **Methods:** We performed invasive angiography and NIRS-IVUS in consecutive PAD patients prior to percutaneous revascularization. Imaging evaluation included parameters from angiography, IVUS, and NIRS. NIRS-IVUS findings were compared among different vascular beds with regard to the presence and extent of calcification and LCP. **Results:** One hundred and forty-nine lesions in 126 PAD patients were enrolled, including the internal carotid (n=10), subclavian/axillary (n=9), renal (n=14), iliac (n=35), femoropopliteal (n=69), and infrapopliteal (n=12) arteries. Plaque morphology was calcified in 132 lesions (89%) and fibrous in 17 lesions (11%). Calcification varied from 100% of renal artery stenoses to 55% of subclavian/axillary artery stenoses. LCP was present in 48 lesions (32%) and prevalence varied from 60% in carotid artery stenoses to 0% in renal artery stenoses (P<0.005). LCP was only observed in fibrocalcific plaque, and was longitudinally and circumferentially surrounded by a more extensive degree of calcium. **Conclusions:** NIRS-IVUS in stable PAD patients demonstrates a high frequency of calcific plaque and statistically significant differences in the frequency of LCP in different arterial beds. LCP, when present in the peripheral circulation, is always associated with calcified plaque. The strong co-localization of calcified plaque and LCP in severe PAD lesions may provide plaque-stabilizing effects; further studies are needed.

Afonso NM, Kavanagh MJ, Swanberg SM, Schulte JM, Wunderlich T and Lucia VC (2017). "Will they lead by example? Assessment of vaccination rates and attitudes to human papilloma virus in millennial medical students." *BMC Public Health* 17(1): 1-8.

[Full-Text](#)

Administration

Clinical Skills Training and Simulation Center

Medical Library

Department of Medical Education

Department of Biomedical Sciences (OU)

Background: Human papillomavirus (HPV) is the most common sexually transmitted infection in the United States. It is also well established that HPV viruses are responsible for a variety of cancers. Little is known about the prevailing knowledge and attitudes toward the HPV vaccine in our future healthcare providers, a majority of whom were among the first in the target age group to receive the vaccine; the same vaccine that they will in turn be expected to recommend to their patients. The aims of this pilot study were to examine the HPV vaccination rate among medical students and determine their knowledge about HPV and attitudes toward vaccination. Methods: To aid in the development of an HPV educational intervention, a needs assessment survey was administered to discover medical students' knowledge and attitudes toward the HPV vaccine. All medical students at a Midwestern US medical school were invited to complete the survey. Results: Two hundred fourteen of 390 medical students completed the survey with 44% having been previously vaccinated. Although 82% of all respondents believed they would recommend the vaccine to family and friends, only 40% felt knowledgeable about the vaccine and 40% felt comfortable counseling patients. More positive attitudes and better knowledge scores were found in fully vaccinated students compared to non-vaccinated students. Provider recommendation was strongly associated with HPV vaccination status. Conclusions: This study revealed the unique perspectives of U.S. millennial medical students as the first group of future healthcare providers to have personally encountered the HPV vaccine. Overall, students' knowledge as well as their comfort level in counseling patients was lacking. This assessment has guided the development of targeted educational interventions to address knowledge gaps and prepare students to appropriately discuss the vaccine with patients and parents and help protect young people from life threatening cancers.

Al-Katib S, **Shetty M, Jafri SMA and Jafri SZH** (2017). "Radiologic assessment of native renal vasculature: A multimodality review." *Radiographics* 37(1): 136-156.

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Department of Diagnostic Radiology and Molecular Imaging

Department of Urology

A wide range of clinically important anatomic variants and pathologic conditions may affect the renal vasculature, and radiologists have a pivotal role in the diagnosis and management of these processes. Because many of these entities may not be suspected clinically, renal artery and vein assessment is an essential application of all imaging modalities. An understanding of the normal vascular anatomy is essential for recognizing clinically important anatomic variants. An understanding of the protocols used to optimize imaging modalities also is necessary. Renal artery stenosis is the most common cause of secondary hypertension and is diagnosed by using both direct ultrasonographic (US) findings at the site of stenosis and indirect US findings distal to the stenosis. Fibromuscular dysplasia, while not as common as atherosclerosis, remains an important cause of renal artery hypertension, especially among young female individuals. Fibromuscular dysplasia also predisposes individuals to renal artery aneurysms and dissection. Although most renal artery dissections are extensions of aortic dissections, on rare occasion they occur in isolation. Renal artery aneurysms often are not suspected clinically before imaging, but they can lead to catastrophic outcomes if they are overlooked. Unlike true aneurysms, pseudoaneurysms are typically iatrogenic or posttraumatic. However, multiple small pseudoaneurysms may be seen with underlying vasculitis. Arteriovenous fistulas also are commonly iatrogenic, whereas arteriovenous malformations are developmental (ie, congenital). Both of these conditions involve a prominent feeding artery and draining vein; however, arteriovenous malformations contain a nidus of tangled vessels. Nutcracker syndrome should

be suspected when there is distention of the left renal vein with abrupt narrowing as it passes posterior to the superior mesenteric artery. Filling defects in a renal vein can be due to a bland or tumor thrombus. A tumor thrombus is most commonly an extension of renal cell carcinoma. When an enhancing mass is located predominantly within a renal vein, leiomyosarcoma of the renal vein should be suspected. (C) RSNA, 2017

Alweis R, Collichio F, Milne CK, **Dalal B**, Williams CM, Sulistio MS, Roth TK and Muchmore EA (2017). "Guidelines for a standardized fellowship letter of recommendation." [American Journal of Medicine](#) 130(5): 606-611.

[Full-Text](#)

Department of Internal Medicine

Perspectives Viewpoints (for Guidelines for Fellowship Letters of Recommendation) Despite its ubiquity, the current letter of recommendation has multiple limitations, including lack of standardization. Program director letters should provide an accurate, fair assessment of a fellowship applicant's capabilities, while also enabling writers to advocate. Standardized letters of recommendation have shown increased reliability as a predictor of future performance, greater inter-rater reliability, and improved task efficiency for writers and readers.

Amin SB, **Maisels MJ** and Watchko JF (2017). "Early lipid infusions and unbound bilirubin in preterm neonates: A cause for concern?" [Journal of Pediatrics](#) 184(May): 6-7.

[Full-Text](#)

Department of Pediatrics

Andreini D, Pontone G, Mushtaq S, Gransar H, Conte E, Bartorelli AL, Pepi M, Opolski MP, ó Hartaigh B, Berman DS, Budoff MJ, Achenbach S, Al-Mallah M, Cademartiri F, Callister TQ, Chang HJ, **Chinnaiyan K**, Chow BJW, Cury R, Delago A, Hadamitzky M, Hausleiter J, Feuchtnner G, Kim YJ, Kaufmann PA, Leipsic J, Lin FY, Maffei E, **Raff G**, Shaw LJ, Villines TC, Dunning A, Marques H, Rubinshtein R, Hindoyan N, Gomez M and Min JK (2017). "Long-term prognostic impact of CT-Leaman score in patients with non-obstructive CAD: Results from the COronary CT Angiography Evaluation For Clinical Outcomes InteRnational Multicenter (CONFIRM) study." [International Journal of Cardiology](#) 231: 18-25.

[Full-Text](#)

Department of Internal Medicine

Bahado-Singh RO, Syngelaki A, Mandal R, Graham SF, Akolekar R, Han B, Bjondahl TC, Dong E, **Bauer S**, **Alpay-Savasan Z**, Turkoglu O, **Ogunyemi D**, Poon LC, Wishart DS and Nicolaides KH (2017). "Metabolomic determination of pathogenesis of late-onset preeclampsia." [Journal of Maternal-Fetal & Neonatal Medicine](#) 30(6): 658-664.

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Department of Obstetrics and Gynecology

Objective: Our primary objective was to apply metabolomic pathway analysis of first trimester maternal serum to provide an insight into the pathogenesis of late-onset preeclampsia (late-PE) and thereby identify plausible therapeutic targets for PE. Methods: NMR-based metabolomics analysis was performed on 29 cases of late-PE and 55 unaffected controls. In order to achieve sufficient statistical power to perform the pathway analysis, these cases were combined with a group of previously analyzed specimens, 30 late-PE cases and 60 unaffected controls. Specimens from both groups of cases and controls were collected in the same clinical centers during the same time period. In addition, NMR analyses were performed in the same lab and using the same techniques. Results: We identified abnormalities in branch chain amino acids (valine, leucine and isoleucine) and propanoate, glycolysis, gluconeogenesis and ketone body metabolic pathways. The results suggest insulin resistance and metabolic syndrome, mitochondrial dysfunction and disturbance of energy metabolism, oxidative stress and lipid dysfunction in the pathogenesis of late PE and suggest a potential role for agents that reduce insulin resistance in PE. Conclusions: Branched chain amino acids are known markers of insulin resistance and strongly predict future diabetes development. The analysis provides independent evidence linking insulin resistance and late-PE and suggests a potentially important therapeutic role for pharmacologic agents that reduce insulin resistance for late-PE.

Bahado-Singh RO, Syngelaki A, Mandal R, Han B, Accurti V, Li L, Wang N, Tseng CL, Chelliah A, Turkoglu O, **Kaur S**, Wishart DS and Nicolaides KH (2017). "First-trimester metabolomic prediction of gestational diabetes (GDM)." *American Journal of Obstetrics and Gynecology* 216(1): S58.

[Full-Text](#)

Department of Obstetrics and Gynecology

OBJECTIVE: Meta-analysis suggest that life style interventions and dietary supplements e.g. myoinositol can prevent GDM development. Accurate early screening could reduce complications or prevent GDM all together. We evaluated whether early GDM prediction is feasible using metabolomics analysis. STUDY DESIGN: This is part of an ongoing prospective study evaluating the first-trimester (11-14 weeks) prediction of GDM. Targeted, i.e. NMR and Mass spectrometry (MS) (Biocrates, Life Sciences, AG, Austria), and untargeted liquid chromatography mass-spectrometry (LC-MS) (Bruker, Billerica, MA), metabolomic platforms were used to comprehensively analyse maternal serum. A total of 30 singletons that subsequently developed GDM on routine mid-trimester screen and 60 controls were used. Metabolite concentrations were compared between groups after log transformation. Clinical (e.g. BMI), demographic, family and obstetric history and standard firsttrimester biomarker data were also considered. Logistic regression equations using targeted and untargeted metabolites by themselves, combined and with clinical predictors were developed for BMI prediction. RESULTS: The group that subsequently developed GDM had higher BMI: [28.5 (0.95) vs 25.48 (0.63), $p=0.01$], rates of non-white ethnicity: [63.38% vs 31.78%, $p=0.004$] and frequency of a prior GDM pregnancy: [(33.8% vs 0.8%, $p<0.001$). Significant alterations in concentrations were observed in 19 targeted metabolites including phosphatidylcholine. C40.6, d-glucose and betaine, in cases destined to develop GDM. Using regression analysis, metabolites by themselves and when adjusted for clinical confounders were highly predictive biomarkers for future GDM (Table 1). Other algorithms combining untargeted with targeted metabolites were also highly predictive of GDM [AUC(95%CI) = 0.864 (0.769,0.96)], sensitivity 80% and specificity 83.3%. CONCLUSION: Significant metabolite perturbations occur well before the development of clinical GDM. Metabolomic markers alone or combined with clinical factors accurately predicted future GDM suggesting that first-trimester screening might be feasible.

Bahado-Singh RO, Zeb A, Konda S, Yilmaz A, Sherman E, Werner K, Kirma J, Turkoglu O, Odibo A, Maulik D and Graham SF (2017). "Metabolic signatures of Fetal Growth Restriction (FGR): ¹H NMR analysis of human placenta." *American Journal of Obstetrics and Gynecology* 216(1): S278-S279.

[Full-Text](#)

Department of Obstetrics and Gynecology

OBJECTIVE: Fetal Growth Restriction (FGR) (estimated fetal weight < 10th percentile) is associated with increased risks of perinatal mortality and morbidity, long term developmental deficits, and adult metabolic syndrome. However, the pathogenesis remains insufficiently understood and half the cases are not prenatally identified. Our goals were to: a) use high resolution ¹H NMR metabolomics to biochemically profile human placental tissue in FGR compared to normal; b) determine the screening efficacy of potential biomarkers for FGR in placental tissue; c) determine if there are metabolic alterations and disruptions to normal pathways in FGR placental tissues. STUDY DESIGN: 49 human placental tissue samples consisting of n=30 controls and n=19 FGR specimens were freeze-dried and homogenized to a fine powder. Metabolomic analysis of the extracted metabolites was performed using a 600 MHz Bruker Avance III Spectrometer. Logistic regression was used to generate predictive algorithms for FGR. Pathway analysis was used to investigate the biochemical pathways that were dysregulated in FGR. RESULTS: The mean (SD) gestational age (weeks) at delivery for FGR versus controls was 36.4 (≥ 3.8) vs 39.8 (≥ 0.87) (p -value=0.005); and birth weight (kgm) was 2126 (≥ 752) vs 3505 (≥ 381) (p - =0.010) for FGR vs control cases, respectively. Multivariate analysis displayed significant differences between FGR and control specimens based on the accurate quantitated concentrations of 59 metabolites ($p < 0.0001$). Logistic regression analysis of the data revealed that the combination of aspartate, valine, glycine and D-glucose have good accuracy for predicting FGR (AUC = 0.839, CI: 0.709 -0.968). Pathway analysis revealed perturbations to important metabolic pathways including alanine, aspartate and glutamate metabolism ($p = 9.41 \times 10^{-7}$), and ketone body synthesis and degradation ($p=0.02353$) (Table 1). These pathways are involved in glucose metabolism in muscle, neurotransmission, the inhibition of antioxidant defenses and fatty acid metabolism. CONCLUSION: This study demonstrates the

potential of high resolution metabolomics for the study and prediction of FGR. Using this platform, we were able to discriminate between FGR and control placentas. Further, we identified novel disturbances in important pathways involved in energy metabolism and neurotransmission. (Figure Presented).

Bailey JM and **Voorheis-Sargent A** (2017). "MI medical education peer connections program for foundational sciences faculty (iCollaborative)." MedEdPortal Resource ID 4372

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Administration

As new medical schools, Oakland University William Beaumont (OUWB), Central Michigan University (CMU), and Western Michigan University Homer Stryker MD (WMU) employ a large number of junior foundational sciences faculty teaching in the foundational sciences. At CMU and OUWB, these junior faculty have limited mentoring opportunities as they outnumber tenured, senior faculty. It is important to help faculty connect with regional colleagues teaching in similar disciplines to provide research guidance, teaching and learning advice, and scholarship collaboration options. In addition, foundational sciences faculty teaching need opportunities to present their research regionally to meet tenure and promotion requirements. To help faculty make necessary professional connections, faculty developers CMU College of Medicine and Oakland University William Beaumont College of Medicine partnered with WMU Homer Stryker MD School of Medicine to connect foundational sciences faculty to establish a peer coaching network.

Bangiyev JN, Govil N, Sheyn A, **Haupt M** and Thottam PJ (2017). "Novel application of steroid eluting stents in choanal atresia repair: A case series." Annals of Otolaryngology, Rhinology and Laryngology 126(1): 79-82.

[Full-Text](#)

Department of Surgery

Purpose: To describe the application of mometasone furoate eluting sinus stent technology in the treatment of choanal atresia (CA) in the hopes of preventing postsurgical stenosis. Methods: We analyzed 3 consecutive patients aged 4 days to 16 years undergoing repair of CA at a tertiary pediatric hospital. Mometasone furoate eluting sinus stents were placed intraoperatively. Postoperative need for revision surgery as well as routine surveillance endoscopy were used to determine success of surgery. Results: Three patients of varying age and etiology underwent successful repair of choanal atresia/stenosis. The steroid eluting sinus stent was deployed successfully in all 3 cases. There was no identifiable restenosis in any of the 3 patients with 12-month follow-up. There were no complications noted throughout the follow-up period. Conclusions: Choanal atresia is a rare disorder that can prove difficult in postsurgical management. In our case series, mometasone furoate eluting stents were effective and safe for the management of this disease process. Further prospective studies are needed to determine the exact safety profile, long-term consequences, and efficacy of steroid eluting sinus stents in the pediatric population.

Bartley JM, Ramirez V, Killinger KA, **Boura JA**, Gupta P, Gaines N, **Gilleran JP** and **Peters KM** (2017). "Outcomes of sacral neuromodulation in patients with prior surgical treatment of stress urinary incontinence and pelvic organ prolapse." Female Pelvic Medicine and Reconstructive Surgery 23(1): 8-12.

[Full-Text](#)

Department of Surgery

OUWB Medical Student Author

Department of Biomedical Sciences (BHS)

Department of Urology

Objectives: The aim of this study was to evaluate the efficacy of sacral neuromodulation in patients with prior stress urinary incontinence (SUI) or pelvic organ prolapse (POP) surgery. Methods: Women in our prospective neuromodulation database were evaluated. Patients with a history of prior SUI/POP surgery were compared to those without. Medical records at baseline were reviewed, and primary outcome was defined as moderate/marked improvement on Global Response Assessment (GRA) at 3 months. Secondary outcomes were measured using bladder diaries and Overactive Bladder Symptom Severity (OABq-SS)/health-related quality of life (HRQOL). Data were analyzed with Pearson chi(2) test, Fisher exact test, Wilcoxon rank-sum

test, and repeated-measures analyses. Results: Of 210 subjects, 108 (51%) had prior SUI/POP surgery. Patients with SUI/POP surgery had more prior hysterectomies. At 3 months, there was no difference between groups on GRA outcomes. On the bladder diary, both groups had improvement in median voids per 24 hours, urgency severity, and urge incontinence over 2 years. On the GRA, fewer patients in the SUI/POP group were treatment responders at 12 and 24 months. For urinary urgency, a few in this group were moderately/markedly improved at 6 months, and a higher proportion are reported still leaking urine at 6 and 12 months. Similar proportions in each group reported moderate/marked improvement in leaking. Satisfaction was similar between groups. The OABq-SS/HRQOL scores improved, and there was no difference between the groups. Conclusion: Sacral neuromodulation improves bladder symptoms in women with prior SUI/POP surgery, but response may be slightly less in those with prior surgery due to underlying bladder or pelvic floor issues.

Baschnagel AM, Tonlaar N, Eskandari M, Kumar T, Williams L, Hanna A, Pruetz BL and **Wilson GD** (2017). "Combined CD44, c-MET, and EGFR expression in p16-positive and p16-negative head and neck squamous cell carcinomas." Journal of Oral Pathology and Medicine 46(3): 208-213.

[Full-Text](#)

Department of Radiation Oncology

Basir MB, Schreiber TL, **Grines CL, Dixon SR**, Moses JW, Maini BS, Khandelwal AK, Ohman EM and O'Neill WW (2017). "Effect of early initiation of mechanical circulatory support on survival in cardiogenic shock." American Journal of Cardiology 119(6): 845-851.

[Full-Text](#)

Department of Internal Medicine

The role and timing of percutaneous mechanical circulatory support (MCS) devices in the treatment of acute myocardial infarction complicated by cardiogenic shock (AMICS) are not well understood. We sought to evaluate patient characteristics and predictors of outcomes in patients presenting with AMICS supported with an axial flow percutaneous MCS device; 287 consecutive unselected patients enrolled in the catheter-based ventricular assist device registry presenting with AMICS who underwent percutaneous coronary intervention (PCI) were included in this analysis. All patients were supported with either the Impella 2.5 or Impella CP. Mean patient age was 66 +/- 12.5 years, 76% were men, and mean left ventricular ejection fraction was 25 +/- 12%. Before receiving MCS, 80% of patients required inotropes or vasopressors and 40% were supported with intra-aortic balloon pump; 9% of patients were under active cardiopulmonary resuscitation at the time of MCS implantation. Survival to discharge was 44%. In a multivariate analysis, early implantation of a MCS device before PCI ($p = 0.04$) and before requiring inotropes and vasopressors ($p = 0.05$) was associated with increased survival. Survival was 66% when MCS was initiated <1.25 hours from shock onset, 37% when initiated within 1.25 to 4.25 hours, and 26% when initiated after 4.25 hours ($p = 0.017$). Survival was 68%, 46%, 35%, 35%, and 26% for patients requiring 0, 1, 2, 3, and ≥ 4 inotropes before MCS support, respectively ($p < 0.001$). In conclusion, MCS implantation early after shock onset, before initiation of inotropes or vasopressors and before PCI, is independently associated with improved survival in patients presenting with AMICS. (C) 2016 Elsevier Inc. All rights reserved.

Beaudoin FL, Gutman R, Merchant RC, Clark MA, **Swor RA**, Jones JS, Lee DC, Peak DA, Domeier RM, Rathlev NK and McLean SA (2017). "Persistent pain after motor vehicle collision: Comparative effectiveness of opioids vs nonsteroidal antiinflammatory drugs prescribed from the emergency department—a propensity matched analysis." Pain 158(2): 289-295.

[Full-Text](#)

Department of Emergency Medicine

Each year millions of Americans present to the emergency department (ED) for care after a motor vehicle collision (MVC); the majority (> 90%) are discharged to home after evaluation. Acute musculoskeletal pain is the norm in this population, and such patients are typically discharged to home with prescriptions for oral opioid analgesics or nonsteroidal antiinflammatory drugs (NSAIDs). The influence of acute painmanagement on subsequent pain outcomes in this commonEDpopulation is unknown. Weevaluated the effect of opioid

analgesics vs NSAIDs initiated from the ED on the presence of moderate to severe musculoskeletal pain and ongoing opioid use at 6 weeks in a large cohort of adult ED patients presenting to the ED after MVC (n = 948). The effect of opioids vs NSAIDs was evaluated using an innovative quasi-experimental design method using propensity scores to account for covariate imbalances between the 2 treatment groups. No difference in risk for moderate to severe musculoskeletal pain at 6 weeks was observed between those discharged with opioid analgesics vs NSAIDs (risk difference = 7.2% [95% confidence interval: 25.2% to 19.5%]). However, at followup participants prescribed opioids were more likely than those prescribed NSAIDs to report use of prescription opioids medications at week 6 (risk difference = 17.5% [95% confidence interval: 5.8%-29.3%]). These results suggest that analgesic choice at ED discharge does not influence the development of persistent moderate to severe musculoskeletal pain 6 weeks after an MVC, but may result in continued use of prescription opioids. Supported by NIAMS R01AR056328 and AHRQ 5K12HS022998.

Beeravolu N, **Brougham J**, Khan I, McKee C, **Perez-Cruet M** and Chaudhry GR (2017). "Human umbilical cord derivatives regenerate intervertebral disc." Journal of Tissue Engineering and Regenerative Medicine. ePub Ahead of Print.

[Full-Text](#)

OUWB Medical Student Author

Department of Neurosurgery

Intervertebral disc (IVD) degeneration is characterized by the loss of nucleus pulposus (NP), which is a common cause for lower back pain. Although, currently, there is no cure for the degenerative disc disease, stem cell therapy is increasingly being considered for its treatment. In this study, we investigated the feasibility and efficacy of human umbilical cord mesenchymal stem cells (MSCs) and chondroprogenitor cells (CPCs) derived from those cells to regenerate damaged IVD in a rabbit model. Transplanted cells survived, engrafted and dispersed into NP in situ. Significant improvement in the histology, cellularity, extracellular matrix proteins, and water and glycosaminoglycan contents in IVD recipients of CPCs was observed compared to MSCs. In addition, IVDs receiving CPCs exhibited higher expression of NP-specific human markers, SOX9, aggrecan, collagen 2, FOXF1 and KRT19. The novelty of the study is that in vitro differentiated CPCs derived from umbilical cord MSCs, demonstrated far greater capacity to regenerate damaged IVDs, which provides basis and impetus for stem cell based clinical studies to treat degenerative disc disease.

Ben Wilkinson J, Shah C, **Amin M**, **Nadeau L**, Shaitelman SF, **Chen PY**, **Grills IS**, Martinez AA, Mitchell CK, Wallace MF and Vicini FA (2017). "Outcomes according to breast cancer subtype in patients treated with accelerated partial breast irradiation." Clinical Breast Cancer 17(1): 55-60.

[Full-Text](#)

Department of Pathology

Department of Internal Medicine

Department of Radiation Oncology

Using molecular and immunohistochemical- based testing for gene and protein expression patterns, the most commonly studied breast cancer variants are the luminal A, luminal B, HER2, and basal subtypes. Previous reports on outcomes for the breast cancer subtypes have focused on patients treated with traditional breastconserving therapy with whole-breast irradiation. In this analysis, we observed 5-year local control rates in 278 women after treatment with accelerated partial breast irradiation, which is excellent for luminal, HER2, and basal phenotypes of early-stage breast cancer. Background: The purpose of the study was to determine outcomes for patients treated with accelerated partial breast irradiation (APBI) on the basis of breast cancer subtype (BCST). Patients and Methods: Our single-institution, institutional review board-approved APBI database was queried for patients who had complete testing results for the estrogen (ER), progesterone (PR), and HER2/neu receptors to determine outcomes for each BCST. Women were assigned as luminal A (LA), luminal B (LB), HER2, and basal BCST using their ER, PR, and HER2/neu receptor status. Degree of ER expression supplemented the receptor-based luminal BCST assignment. Two hundred seventy-eight patients had results for all 3 receptors (LA = 164 [59%], LB = 81 [29%], HER2 = 5 [2%], basal = 28 [10%]), which were submitted for analysis (ipsilateral breast tumor recurrence [IBTR], regional nodal

failure, distant metastasis [DM], disease-free survival [DFS], cause-specific survival [CSS], and overall survival [OS]). Results: Median follow-up was 5.4 years (range, 0.1-12.4 years). Basal and HER2 subtype patients had higher histologic grades (Grade 3 = 75% vs. 10% LA/LB; $P < .001$), larger tumors (13.0 mm basal vs. 10.7 mm LA/LB; $P = .059$), and were more likely to receive chemotherapy (68% vs. 15% LA/LB; $P < .001$). Margin and nodal status were similar among BCSTs. At 5 years, IBTR rates were similar (1.8%, 2.9%, 0%, and 4.8%) for LA, LB, HER2, and basal subtypes, respectively ($P = .62$). DM was only seen in LA (2.9%) and LB (1.3%) ($P = .83$). DFS (95%-100%), CSS (97%-100%), and OS (80%-100%) were not statistically different ($P = .97, .87, .46$, respectively). Conclusion: Five-year local control rates after breast-conserving surgery, APBI, and appropriate systemic therapy are excellent for luminal, HER2, and basal phenotypes of early-stage breast cancer; however, further study of receptor subtype effect on risk stratification in early-stage breast cancer is needed.

Bergese SD, Uribe AA, Puente EG, Marcus RJL, Krohn RJ, Docsa S, **Soto RG** and Candiotti KA (2017). "A prospective, multicenter, single-blind study assessing indices of SNAP II versus BIS VISTA on surgical patients undergoing general anesthesia." *JMIR Research Protocols* 6(2): e15.

[Full-Text](#)

Department of Anesthesiology

Background: Traditionally, anesthesiologists have relied on nonspecific subjective and objective physical signs to assess patients' comfort level and depth of anesthesia. Commercial development of electrical monitors, which use low- and high-frequency electroencephalogram (EEG) signals, have been developed to enhance the assessment of patients' level of consciousness. Multiple studies have shown that monitoring patients' consciousness levels can help in reducing drug consumption, anesthesia-related adverse events, and recovery time. This clinical study will provide information by simultaneously comparing the performance of the SNAP II (a single-channel EEG device) and the bispectral index (BIS) VISTA (a dual-channel EEG device) by assessing their efficacy in monitoring different anesthetic states in patients undergoing general anesthesia. Objective: The primary objective of this study is to establish the range of index values for the SNAP II corresponding to each anesthetic state (preinduction, loss of response, maintenance, first purposeful response, and extubation). The secondary objectives will assess the range of index values for BIS VISTA corresponding to each anesthetic state compared to published BIS VISTA range information, and estimate the area under the curve, sensitivity, and specificity for both devices. Methods: This is a multicenter, prospective, double-arm, parallel assignment, single-blind study involving patients undergoing elective surgery that requires general anesthesia. The study will include 40 patients and will be conducted at the following sites: The Ohio State University Medical Center (Columbus, OH); Northwestern University Prentice Women's Hospital (Chicago, IL); and University of Miami Jackson Memorial Hospital (Miami, FL). The study will assess the predictive value of SNAP II versus BIS VISTA indices at various anesthetic states in patients undergoing general anesthesia (preinduction, loss of response, maintenance, first purposeful response, and extubation). The SNAP II and BIS VISTA electrode arrays will be placed on the patient's forehead on opposite sides. The hemisphere location for both devices' electrodes will be equally alternated among the patient population. The index values for both devices will be recorded and correlated with the scorings received by performing the Modified Observer's Assessment of Alertness and Sedation and the American Society of Anesthesiologists Continuum of Depth of Sedation, at different stages of anesthesia. Results: Enrollment for this study has been completed and statistical data analyses are currently underway. Conclusions: The results of this trial will provide information that will simultaneously compare the performance of SNAP II and BIS VISTA devices, with regards to monitoring different anesthesia states among patients.

Berra K, **Franklin B** and Jennings C (2017). "Community-based healthy living interventions." *Progress in Cardiovascular Diseases* 59(5): 430-439.

[Full-Text](#)

Department of Internal Medicine

Bhatt M and **Krishnan A** (2017). "Spinal cord mimics of multiple sclerosis: Imaging techniques and pearls." Multiple Sclerosis Journal 23(1): 66.

[Request Form](#)

Department of Diagnostic Radiology and Molecular Imaging

Bisoski L, Malone E, **Smith M** and King A (2017). "If it is not a toxic alcohol, what is it?" Journal of Medical Toxicology 13(1): 40.

[Full-Text](#)

Department of Pathology

Background: Toxic alcohol ingestion is often suspected in patients with an elevated anion gap metabolic acidosis. The corresponding differential is large and toxic alcohols and glycols are often considered, but our clinical experience is that incidence of exposure remains low. Reference texts do not offer an evidence-based ranked differential diagnosis for alternative causes of an elevated anion gap. Hypothesis: There will be a small number of common alternative diagnosis in patients with an elevated anion gap in which serum ethylene glycol and methanol levels are negative. Methods: This was a single center retrospective chart review. All ethylene glycol and methanol concentrations sent to a single reference laboratory over a 7-month time period were reviewed. Cases excluded from analysis included those in which the toxic alcohol panel was drawn as part of a nonspecific initial work-up, patients without an elevated anion gap, patients with no data available other than a toxic alcohol panel, and patients with confirmed toxic alcohol ingestions. The final diagnosis for the elevated anion gap was determined by the physician diagnosis in the medical record or interpretation of available data. Results: One hundred fifty patients were reviewed, and 76 were excluded based on above criteria. Of the 76 excluded cases, a total of four patients (4/76, 2.7%) had a detectable methanol or ethylene glycol level. The most common alternative diagnoses were within four categories. These categories included lactate-associated acidosis (30/74, 40.5%), ketoacidosis (22/74, 29.8%), uremia (14/74, 18.9%), and unknown (8/74, 10.8%). Within these categories, more specific differentiation of acidosis included ketoacidosis without hyperglycemia (15/74, 20.3%) and lactate-associated acidosis secondary to seizure (9/74, 12.1%). Additional sources of lactate-associated acidosis included mesenteric ischemia, ibuprofen toxicity, and hepatorenal syndrome. Discussion: Toxic alcohol ingestion remains a relatively rare cause of an elevated anion gap metabolic acidosis. Physicians should be aware of the most common alternative diagnoses and focus diagnostic testing and management on those etiologies. Conclusion: Lactate-associated acidosis due to seizure and alcoholic ketoacidosis are the most common alternative etiologies in patients with an elevated anion gap acidosis. This data supports the development of an evidence-based ranked differential diagnosis for elevated anion gaps.

Burks FN, Hu JC, Telang D, Liu A, Hawken S, Montgomery Z, Linsell S, Montie JE, Miller DC and Ghani KR (2017). "Repeat prostate biopsy practice patterns in a statewide quality improvement collaborative." Journal of Urology. ePub Ahead of Print.

[Full-Text](#)

Department of Urology

OUIB Medical Student Author

PURPOSE: To understand adherence to guidelines recommending repeat prostate biopsy in patients with multifocal high-grade prostatic intraepithelial neoplasia (MF-HGPIN) or atypical small acinar proliferation (ASAP), we examined re-biopsies within the Michigan Urological Surgery Improvement Collaborative (MUSIC). METHODS: We analyzed data of men undergoing repeat biopsy, practice patterns and cancer detection rates. Multivariate regression model was used to calculate the proportion of patients undergoing re-biopsy. We used claims data to validate treatment classification in MUSIC. To understand reasons for not undergoing re-biopsy, we reviewed records of a sample of patients with ASAP. RESULTS: We identified 5,375 men with a negative biopsy, of which 411 (7.6%) had a repeat biopsy. Men with HGPIN (n=718), ASAP (n=350) or MF-HGPIN and ASAP, or ASAP alone (n=587) at initial biopsy had re-biopsy rates of 20.7%, 42.5% and 55.6%, respectively. The adjusted proportion of patients undergoing re-biopsy in each practice ranged from 0% to 17.2% (p<0.001). Overall cancer detection at re-biopsy was 39.3%, and highest after ASAP (adjusted probability 0.39; 95% CI:0.30-0.48), or both MF- HGPIN and ASAP (adjusted probability 0.50; 95%

CI:0.35-0.65). Gleason ≥ 7 detection was greatest in patients with MF-HGPIN and ASAP (41.1%). Chart review revealed that 45.5% of ASAP patients underwent PSA testing instead of re-biopsy, while 36% failed to undergo re-biopsy despite a recommendation. CONCLUSION: Re-biopsy rates vary in Michigan practices with relatively low utilization in men with MF-HGPIN and ASAP, or ASAP alone. Quality improvement strategies should target patients with ASAP and MF-HGPIN, as these have the highest likelihood of cancer detection.

Butala S and **Berman B** (2017). "Middle eastern adolescent with macrocytic anemia." Global Pediatric Health 4: 1-3.

[Full-Text](#)

OUWB Medical Student Author

Department of Pediatrics

Cappell MS (2017). "Evaluating the safety of endoscopy during pregnancy: The robust statistical power vs limitations of a national registry study." Gastroenterology 152(3): 475-479.

[Full-Text](#)

Department of Internal Medicine

Carbonell AM, Warren JA, Prabhu AS, Ballecer CD, **Janczyk RJ**, Herrera J, Huang LC, Phillips S, Rosen MJ and Poulouse BK (2017). "Reducing length of stay using a robotic-assisted approach for retromuscular ventral hernia repair: A comparative analysis from the Americas Hernia Society Quality Collaborative." Annals of Surgery. ePub Ahead of Print.

[Full-Text](#)

Department of Surgery

OBJECTIVE:: The aim of this study was to compare length of stay (LOS) after robotic-assisted and open retromuscular ventral hernia repair (RVHR). BACKGROUND:: RVHR has traditionally been performed by open techniques. Robotic-assisted surgery enables surgeons to perform minimally invasive RVHR, but with unknown benefit. Using real-world evidence, this study compared LOS after open (o-RVHR) and robotic-assisted (r-RVHR) approach. METHODS:: Multi-institutional data from patients undergoing elective RVHR in the Americas Hernia Society Quality Collaborative between 2013 and 2016 were analyzed. Propensity score matching was used to compare median LOS between o-RVHR and r-RVHR groups. This work was supported by an unrestricted grant from Intuitive Surgical, and all clinical authors have declared direct or indirect relationships with Intuitive Surgical. RESULTS:: In all, 333 patients met inclusion criteria for a 2:1 match performed on 111 r-RVHR patients using propensity scores, with 222 o-RVHR patients having similar characteristics as the robotic-assisted group. Median LOS [interquartile range (IQR)] was significantly decreased for r-RVHR patients [2 days (IQR 2)] compared with o-RVHR patients [3 days (IQR 3), $P < 0.001$]. No differences in 30-day readmissions or surgical site infections were observed. Higher surgical site occurrences were noted with r-RVHR, consisting mostly of seromas not requiring intervention. CONCLUSIONS:: Using real-world evidence, a robotic-assisted approach to RVHR offers the clinical benefit of reduced postoperative LOS. Ongoing monitoring of this technique should be employed through continuous quality improvement to determine the long-term effect on hernia recurrence, complications, patient satisfaction, and overall cost.

Carr L, Tu LM, Robert M, Quinlan D, Carlson KV, Herschorn S, Dmochowski RR, Jankowski R and **Chancellor MB** (2017). "A randomized, double-blind, multicenter, placebo-controlled study of autologous muscle derived cells for urinary sphincter repair (AMDC-USR)." Neurourology and Urodynamics 36(Sup 1): S35-S36.

[Full-Text](#)

Department of Urology

Introduction: The safety and efficacy of 150×10^6 AMDC-USR for treatment of stress urinary incontinence (SUI) in women was assessed (NCT01382602). Methods: Women with predominant SUI who experienced ≥ 3 stress incontinence episodes over three days were randomized 2:1 to receive intrasphincteric injection of AMDC-USR or placebo and 1:1 to receive one or two treatments. Second treatments were administered six months after the first treatment. SUI was monitored by three-day diaries of stress incontinence episode frequency (IEF), 24-hour pad tests, in-office pad tests, and quality of life (QOL) questionnaires at baseline and

follow-up. The primary composite efficacy endpoint was the percentage of patients with $\geq 50\%$ IEF reduction or $\geq 50\%$ reduction in either pad test at 12 months. Patients were unblinded after completing 12-month visits, but were followed for two years post-treatment. Results: There were 143 patients treated (50 with placebo; 93 with AMDC-USR) and 141 patients completed 12-month visits. Both placebo and AMDC-USR groups had similar baseline characteristics. No safety signals related to AMDC-USR were identified and no urinary retention was reported. Due to an unexpectedly high placebo responder rate with the composite endpoint, which included pad tests, enrollment was halted at 61% of the planned study size. However, post hoc analyses correlating QOL score improvement with IEF suggest that $\geq 50\%$ IEF reduction, $\geq 75\%$ IEF reduction, and ≤ 1 leak per three days may be clinically meaningful endpoints. With increased IEF thresholds, placebo rates are reduced and a potential treatment effect is detected (figure). Further, in the subset of patients treated for recurrent or persistent SUI after continence surgery, a higher percentage of AMDC-USR patients had $\geq 50\%$ IEF reduction (73%, 8/11 vs. 50%, 3/6), had $\geq 75\%$ IEF reduction (64%, 7/11 vs. 17%, 1/6), and reported ≤ 1 leak per three days (36%, 4/11 vs. 17%, 1/6) compared to placebo. Conclusion: These data support safety of AMDC-USR through 12 months and beyond, and suggest efficacy with regard to IEF reduction. AMDC-USR may benefit both a general SUI population and a difficult-to-treat population with recurrent or persistent SUI after continence surgery.

Carty J, Ziadni M, Lumley M, Holmes H, Tomakowsky J, Schubiner H, Dove-Medows E and **Peters KM** (2017). "The effects of a stress and emotion interview for women with urogenital pain: A randomized trial." Neurourology and Urodynamics 36(Sup 1): S52.

[Full-Text](#)

Department of Urology

Introduction: Women with urogenital pain conditions (interstitial cystitis, pelvic floor dysfunction, etc.) have elevated rates of lifetime trauma and mood disorders, which appear to trigger or exacerbate their pain, disability, and distress. Unfortunately, little research exists on procedures for assessing and intervening with stress and emotional processes in medical settings with women with urogenital pain conditions. Thus, our objective was first, to develop a comprehensive life-stress interview for women with urogenital pain that increases awareness of the links between stress, emotions, and physical symptoms through the use of experiential techniques, and second, to test whether it improves physical and psychological health. Methods: There were 62 women (M = 46.03 years old) diagnosed with chronic urogenital pain recruited in a multidisciplinary women's urology center and randomized to a life-stress interview condition or treatment as usual (TAU) condition. Questionnaires were administered at intake and at six-week follow up, including Pelvic Floor Disorder Inventory (PFDI; Ubersax et al., 1995), Brief Pain Inventory (BPI; Cleeland & Ryan, 1994), and Brief Symptom Inventory (BSI; Derogatis, 1993) for depression and anxiety. Patients in the interview condition had a single 90-minute intensive interview, which aimed to help patients examine the relationship between stress, emotional conflict, and symptoms and encouraged adaptive expression of inhibited emotions. Results: ANCOVAs, controlling for baseline level of the DV and baseline depression, tested differences between Interview and TAU conditions at six weeks (See Table 1). The lifestress interview improved pelvic floor symptom distress and pain severity more than TAU. No effects, however, were found on symptoms of depression and anxiety, or pain interference. Conclusion: It appears that this novel, emotional awareness and expression interview improves physical health but not psychological symptoms, among women with chronic urogenital pain within tertiary care women's urology centers. This trial suggests that for this complex patient group, emotion-focused interviews can be a useful alternative to cognitive-behavioral interviews.

Castillo E, Castillo R, Vinogradskiy Y and **Guerrero T** (2017). "The numerical stability of transformation-based CT ventilation." International Journal of Computer Assisted Radiology and Surgery 12(4): 569-580.

[Full-Text](#)

Department of Radiation Oncology

Catanescu I, **Long G, Bove P**, Khoury M, **Brown O**, Rimar S, Rizk Y, **Uzieblo M** and Hans S (2017). "Rupture of abdominal aortic aneurysm in patients with and without antecedent endovascular repair." Annals of Vascular Surgery 39(Feb): 99-104.

[Full-Text](#)

Department of Surgery

Chaddha A, Jackson EA, Richardson CR and **Franklin BA** (2017). "Technology to help promote physical activity." American Journal of Cardiology 119(1): 149-152.

[Full-Text](#)

Department of Internal Medicine

Chang PW, Newman TB and **Maisels MJ** (2017). "Update on predicting severe hyperbilirubinemia and bilirubin neurotoxicity risks in neonates." Current Pediatric Reviews. ePub Ahead of Print.

[Request Form](#)

Department of Pediatrics

Extreme hyperbilirubinemia and kernicterus, though rare, continue to occur despite the adoption of universal screening. Unless they are known to have glucose-6-phosphate dehydrogenase deficiency, infants who currently develop kernicterus in high resource countries are often otherwise healthy newborns discharged from the well-baby nursery. In this review, we highlight risk factors that increase the risk of a newborn ≥ 35 weeks gestational age developing severe hyperbilirubinemia, as well as the risk factors that increase the hyperbilirubinemic infant's risk of kernicterus.

Chelliah A, Walejko J, Ho M, Keller-Wood M, **Bahado-Singh RO**, Edison A and Gregg AR (2017). "Metabolomic alterations in pregestational diabetic placentas at term." American Journal of Obstetrics and Gynecology 216(1): S356.

[Full-Text](#)

Department of Obstetrics and Gynecology

OBJECTIVE: Diabetic mothers have altered metabolism during pregnancy. They are predisposed to variations in glycolysis, gluconeogenesis and fatty acid metabolism compared to their non-diabetic counterparts. To date little is known about the placental metabolic alterations which take place during the intrapartum period in diabetic patients. The objective of this study was to evaluate the metabolomic profile of the term placenta in women with diabetes compared to controls and to determine if these metabolomic alterations can be observed in urine samples collected before birth. **STUDY DESIGN:** This is a prospective case control study in which patients with pregestational diabetes and non-diabetic controls were recruited on admission (n=12). All patients with diabetes were insulin dependent. Urine and serum specimens were obtained on admission. Placental specimens were collected within 20 minutes of cesarean delivery at various locations on maternal and fetal sides. Proton nuclear magnetic resonance spectroscopy (H-NMR) was used to gain global metabolic profiles of specimens. Multivariate and univariate statistics were used to compare metabolites between groups. Global metabolomic profiles were obtained of 12 urine and 20 placental specimens. **RESULTS:** Principal component analysis revealed Taurine was increased by 22% ($p < 0.05$) in control placentas. Placental tissue from diabetics revealed a 49% elevation in acetate ($p < 0.05$). Citrate and ketone bodies ($p < 0.05$) were increased 2.7 and 4.3 fold respectively in urine of diabetic patients. Taurine was not excreted differentially in urine between groups. **CONCLUSION:** Taurine is increased in control term placental tissue compared to placentas of diabetic patients. Taurine is known to buffer oxidative stress in mitochondria. The placenta is a tissue rich in mitochondria. Taurine has also been described in the prevention of apoptosis in placental tissue. A relationship between our findings and the roles of Taurine as a protective metabolite in placental tissue deserve further exploration. Our data suggest metabolic alterations, in the placenta of diabetic patients at term, which can also be detected non-invasively in urine before birth.

Cheung AY, **David JA** and **Ober MD** (2017). "Spontaneous bilateral hemorrhagic choroidal detachments associated with malignant hypertension." Retinal Cases and Brief Reports 11(2): 175-179.

[Full-Text](#)

OUWB Medical Student Author

Department of Pediatrics

Purpose: To report the details of a patient with bilateral spontaneous suprachoroidal hemorrhages related to malignant hypertension. Methods: Observational case report with review of relevant literature. Results: A 62-year-old man with a history of hypertension was referred secondary to bilateral temporal scotomas and persistent headache for 3 days. Symptoms began during an inpatient admission for malignant hypertension. Examination revealed bilateral 360° hemorrhagic choroidal detachments without retinal hemorrhage or detachment. Choroidal hemorrhages underwent prompt resolution with blood pressure control. Conclusion: Spontaneous suprachoroidal hemorrhage is a rare event and should prompt a focused systemic workup including the evaluation of blood pressure.

Cheung AY, Yonekawa Y, **Balaraman S**, Thomas BJ, **Xi AM**, **Folberg R**, **Amin M**, Miller KT and **Faia LJ** (2017). "Multimodal imaging and histologic correlation of isolated metastasis of prostate adenocarcinoma to the choroid." Retinal Cases and Brief Reports 11(2): 166-170.

[Full-Text](#)

Department of Internal Medicine

OUWB Medical Student Author

Administration

Department of Pathology

Department of Ophthalmology

Purpose: To provide correlative clinical-multimodal imaging-histopathologic findings of isolated prostatic choroidal metastasis. Methods: Ophthalmologic examination, fluorescein angiogram, spectral-domain optical coherence tomography, fundus autofluorescence, computerized tomography, magnetic resonance imaging, positive emission tomography, CSF analysis, serologies, tissue pathology with immunohistochemistry, and examination of relevant literature. Results: A 76-year-old man with a history of prostate adenocarcinoma was referred for 2 months of unilateral blurry vision. Fundus examination revealed elevated deep orange choroidal lesions in the macula with overlying retinal pigment epithelium mottling and subretinal fluid. Fluorescein angiogram demonstrated alternating areas of hypofluorescence and hyperfluorescence (staining) without leakage. Optical coherence tomography revealed dome-shaped and lumpy choroidal lesions with surrounding undulating "lumpy bumpy" and "rippled/seasick" patterns. Workup for a primary or additional metastatic lesion including computerized tomography of head/chest/abdomen/pelvis, lumbar puncture, magnetic resonance imaging brain, and whole-body positive emission tomography scan was negative. Full-thickness excisional chorioretinal biopsy was obtained through pars plana vitrectomy with diathermy and vertical scissors. Histologic examination revealed adenocarcinoma with weak positive staining for prostate specific antigen, moderate positive staining for P501S (prostein), and strong positive staining for prostatic acid phosphatase, consistent with metastasis from a prostate primary. Treatment consisted of local radiation with regression of the metastatic tumor. The patient is also on concomitant androgen deprivation treatment because there is a very high incidence of systemic recurrence due to hematogenous involvement. The patient's vision has continued to improve 6 months past treatment. Conclusion: The authors present a unique case to highlight the multimodal imaging and histology of a rare presentation of biopsy-proven, isolated metastasis of prostate adenocarcinoma to the choroid. Systemic workup is required, and if unrevealing of a primary or metastatic lesion, full-thickness chorioretinal biopsy and histopathology can provide a definitive diagnosis, allowing optimal treatment. Chorioretinal biopsy is a useful technique and may allow for visual preservation while also giving superior histologic quality.

Chinnaiyan KM, Akasaka T, Amano T, Bax JJ, Blanke P, De Bruyne B, Kawasaki T, Leipsic J, Matsuo H, Morino Y, Nieman K, Norgaard BL, Patel MR, Pontone G, Rabbat M, Rogers C, Sand NP and **Raff G** (2017). "Rationale, design and goals of the HeartFlow Assessing Diagnostic Value of Non-invasive FFRCT in Coronary Care (ADVANCE) registry." Journal of Cardiovascular Computed Tomography 11(1): 62-67.

[Full-Text](#)

Department of Internal Medicine

Chinnaiyan KM and Weiner RB (2017). "Trials of quality improvement in imaging." JACC: Cardiovascular Imaging 10(3): 368-378.

[Full-Text](#)

Department of Internal Medicine

Citil Dogan A, Wayne S, **Bauer S**, **Ogunyemi D**, Kulkarni SK, Maulik D, **Carpenter CF** and **Bahado-Singh RO** (2017). "The Zika virus and pregnancy: evidence, management, and prevention." Journal of Maternal-Fetal and Neonatal Medicine 30(4): 386-396.

[Request Form](#)

Department of Obstetrics and Gynecology

Department of Internal Medicine

Clohisy JC, Ackerman J, Baca G, Baty J, Beaulé PE, Kim YJ, Millis MB, Podeszwa DA, Schoenecker PL, Sierra RJ, Sink EL, Sucato DJ, Trousdale RT and **Zaltz I** (2017). "Patient-reported outcomes of periacetabular osteotomy from the prospective ANCHOR cohort study." Journal of Bone and Joint Surgery - American Volume 99(1): 33-41.

[Full-Text](#)

Department of Orthopedic Surgery

Background: Current literature describing the periacetabular osteotomy (PAO) is mostly limited to retrospective case series. Larger, prospective cohort studies are needed to provide better clinical evidence regarding this procedure. The goals of the current study were to (1) report minimum 2-year patient-reported outcomes (pain, hip function, activity, overall health, and quality of life), (2) investigate preoperative clinical and disease characteristics as predictors of clinical outcomes, and (3) report the rate of early failures and reoperations in patients undergoing contemporary PAO surgery. Methods: A large, prospective, multicenter cohort of PAO procedures was established, and outcomes at a minimum of 2 years were analyzed. A total of 391 hips were included for analysis (79% of the patients were female, and the average patient age was 25.4 years). Patient-reported outcomes, conversion to total hip replacement, reoperations, and major complications were documented. Variables with a p value of ≤ 0.10 in the univariate linear regressions were included in the multivariate linear regression. The backward stepwise selection method was used to determine the final risk factors of clinical outcomes. Results: Clinical outcome analysis demonstrated major clinically important improvements in pain, function, quality of life, overall health, and activity level. Increasing age and a body mass index status of overweight or obese were predictive of improved results for certain outcome metrics. Male sex and mild acetabular dysplasia were predictive of lesser improvements in certain outcome measures. Three (0.8%) of the hips underwent early conversion to total hip arthroplasty, 12 (3%) required reoperation, and 26 (7%) experienced a major complication. Conclusions: This large, prospective cohort study demonstrated the clinical success of contemporary PAO surgery for the treatment of symptomatic acetabular dysplasia. Patient and disease characteristics demonstrated predictive value that should be considered in surgical decision-making. Level of Evidence: Therapeutic Level IV. See Instructions for Authors for a complete description of levels of evidence.

Coppler PJ, **Sawyer KN**, Youn CS, Choi SP, Park KN, Kim YM, Reynolds JC, Gaieski DF, Lee BK, Oh JS, Kim WY, Moon HJ, Abella BS, Elmer J, Callaway CW and Rittenberger JC (2017). "Variability of post-cardiac arrest care practices among cardiac arrest centers: United States and South Korean dual network survey of emergency physician research principal investigators." Therapeutic Hypothermia and Temperature Management 7(1): 30-35.

[Request Form](#)

Department of Emergency Medicine

Cousineau C, **Zhang PL, Li W** and Kanaan HD (2017). "High sensitivity and specificity exists between frozen and permanent sections in renal transplant biopsies." Modern Pathology 30(Sup 2): 503A-504A.

[Full-Text](#)

Department of Pathology

Cousineau C, **Zhang PL, Li W** and Kanaan HD (2017). "High sensitivity and specificity exists between frozen and permanent sections in renal transplant biopsies." Laboratory Investigation 97(Sup 1): 503A-504A.

[Full-Text](#)

Department of Pathology

Background: Frozen sections are used to evaluate tumors and margins as daily practice in Pathology with high specificity and sensitivity (>90 % for both indices at the national level and in our department). The correlation between frozen section tissue for immunofluorescent (IF) studies and permanent sections for light microscopy, along with electron microscopy, is critical for determining a final diagnosis in renal pathology. Therefore, we studied the correlation between the frozen sections for IF studies and separate fragments of tissue for permanent sections in our renal transplant biopsies for quality control purposes. Design: We gathered a total of 122 renal transplant biopsy cases for analysis. The frozen sections of renal transplant biopsies were divided into two categories: group 1 - no inflammation (n = 63), and group 2 - with inflammation (n = 59). Subsequently, the permanent sections were categorized as either having no inflammation (such as is seen in acute tubular injury) or with inflammation (such as is seen in acute cellular rejection or BK virus infection). Finally, the findings between the frozen and permanent sections were correlated to calculate sensitivity and specificity. Results: For group 1 (no inflammation), the correlation between the frozen and permanent section diagnoses was 92.1 % (58/63); the five non-correlated cases showed either borderline changes or mild acute cellular rejection on the permanent sections. For group 2 (with inflammation), the correlation between the frozen and permanent sections diagnoses was 94.9 % (56/59); the 3 non-correlated cases showed no significant inflammation on the permanent sections. Using frozen section technique as a "new test" to detect inflammation while taking permanent sections as the gold standard gives a sensitivity and specificity of 91.8 and 95.1%, respectively. Conclusions: Our data suggests that renal biopsy tissue dissected into sections to freeze for IF studies and sections for light microscopy was adequately correlated, based on the high sensitivity and specificity identified in the renal transplant biopsies.

Cousineau C, **Zhang PL** and **Qu Z** (2017). "Reduced androgen receptor expression supports the diagnosis of hepatocellular carcinoma." Laboratory Investigation 97(Sup 1): 415A.

[Full-Text](#)

Department of Pathology

Background: Arginase and Hep-Par 1 immunostains are markers used to confirm hepatic differentiation in hepatocellular carcinoma (HCC); however, their cytoplasmic expression can be weak in poorly differentiated HCC. Additional markers would be valuable in diagnosing HCC. To assess the potential utilization of androgen receptor (AR) as a marker in support of a diagnosis of HCC, we examined whether cells in HCC display altered expression of AR using tissue microarray (TMA). Design: We collected 82 cases of HCC, including both male and female patients. TMA blocks were constructed with each case represented in triplet, then stained for AR by immunohistochemistry using an autostainer. The nuclear staining of AR was graded from 0 to 3+; the distribution was recorded as focal (<50% positivity) or diffuse (>50% positivity). Additionally, 5 benign liver core biopsies from male and female patients were stained for AR. Prostate tissue was also used as a positive control. Results: All examined benign biopsies showed 3+ nuclear staining with diffuse positivity in all hepatocytes. In contrast, 78/82 (95%) of HCC cases were negative for AR, and only 3 cases (5%) were positive. Two of the positive cases demonstrated focal 1+ nuclear staining, while the third positive case displayed diffuse 2+ nuclear staining. Prostate tissue was diffusely AR-positive. Conclusions: The role of androgens and their receptors in HCC pathogenesis remains incompletely understood, and our observation of expression of AR in HCC by immunohistochemistry has not been previously reported. The absence of AR expression in the majority of examined HCC cases suggests that reduced AR expression may be used as a supportive marker for confirming the diagnosis of HCC. Subsequently, staining for AR in full

sections of HCC is necessary to validate our current findings. (Figure Presented) .

Cousineau C, **Zhang PL** and **Qu ZH** (2017). "Reduced androgen receptor expression supports the diagnosis of hepatocellular carcinoma." Modern Pathology 30(Sup 2): 415A.

[Full-Text](#)

Department of Pathology

Coyne KS, Currie BM, Donevan S, **Brodsky M**, Asmus MJ, Krichbaum DW, Cappelleri JC, Hegeman-Dingle R, Sadosky A, Whipple SZ, Burbridge C, **Mulhem E** and **Hillenberg JB** (2017). "Psychometric validation of the Electronic Chronic Pain Questions (eCPQ) in a primary care setting." Current Medical Research and Opinion 33(1): 137-148.

[Request Form](#)

Department of Internal Medicine

Department of Family Medicine

Department of Anesthesiology

Objective: Collecting data that helps evaluate different types of pain may improve physicians' decision-making with regard to treatment selection and on-going monitoring of patients. To date, no chronic pain assessments have been widely implemented in primary care. The aim of this study was to psychometrically validate the electronic Chronic Pain Questions (eCPQ) in a primary care setting. Research design and methods: All men and women ≥ 18 years arriving at two similar primary care clinics in southeastern Michigan were invited to participate. Clinic staff verbally administered the eCPQ to patients and recorded their answers into the electronic medical record (EMR) prior to physician consultation with results available for physician review. Concurrent validity was assessed using Spearman correlations between eCPQ and patient-completed ancillary measures. Known-group validity was assessed by stratifying patients on self-reported chronic pain as well as by pain diagnosis (i.e. ICD-9 codes). To compare patients with chronic pain versus no chronic pain t-tests and chi-square tests were performed. Reproducibility was assessed between interviewer- and self-administration over time. Results: A total of 534 patients were invited to participate and 455 patients consented to take part in the study (85.2% response rate); 395 patients had analyzable eCPQ data; 70.1% were Caucasian; 68.1% female; mean age was 43.4; 52.7% (n = 208) self-reported chronic pain. Correlations between eCPQ and ancillary measures supported concurrent validity. Excellent discrimination between groups was evidenced based on self-reported chronic pain and ICD-9 diagnosis. Patients with self-reported chronic pain reported significantly ($p < .0001$) higher pain ratings and greater interference with usual activities, sleep, and mood than those without chronic pain. Test retest reliability between modes (interviewer vs. self-administration) was excellent as was reproducibility based on self-administration of the eCPQ at two separate time points. Key limitations: Discriminant validity was determined by comparing participants based on ICD codes. Utilizing ICD codes to identify individuals with chronic pain may not be a reliable approach as it is dependent upon providers accurately and consistently entering chronic pain diagnoses in the EMR. Conclusions: The eCPQ has sound psychometric measurement properties, including concurrent validity, discriminant validity, and reproducibility. The eCPQ appears to be useful to identify patients with chronic pain and to assess and monitor symptoms over time.

Dave CN, **Seifman B**, Chennamsetty A, Frontera R, **Faraj K**, Nelson R, Lucido C and Schervish EW (2017). "Office-based ultrasound-guided renal core biopsy is safe and efficacious in the management of small renal masses." Urology 102: 26-30. ePub Ahead of Print.

[Full-Text](#)

Department of Urology

OUIWB Medical Student Author

Davila-Grijalva H, Troya AH, Kring E, DeRidder J and **Maisels MJ** (2017). "How much do formula-fed infants take in the first 2 days?" Clinical Pediatrics 56(1): 46-48.

[Full-Text](#)

Department of Pediatrics

Objective. To document the intake of exclusively formula-fed newborns during the first 2 days of life.

Methods. We enrolled a cohort of 50 healthy newborns ≥ 37 weeks' gestation and documented their daily formula intake until discharge. We surveyed pediatricians regarding their assessment of the intake of formula fed infants. Results. In all, 37 of 50 newborns stayed for at least 48 hours. The mean \pm SD gestational age was 39.5 \pm 0.88 weeks. Mean \pm SD formula intake for the first 48 hours ($n = 37$) was 57.2 \pm 20.4 mL/kg/d and mean weight loss at 45.7 \pm 8.8 hours, was 2.7% of birth weight. Pediatricians underestimated the amounts taken by these infants. Conclusions. In the first 2 days, healthy term newborns, fed formula ad lib, consume about 115 mL/kg, about 2 to 3 times as much as breastfed infants, and they lose only 2.7% of their birthweight by 48 hours. Most pediatricians underestimate the intake of formula-fed infants.

Davis BJ, Taira AV, Nguyen PL, Assimios DG, D'Amico AV, Gottschalk AR, **Gustafson GS**, Keole SR, Liauw SL, Lloyd S, McLaughlin PW, Movsas B, Prestidge BR, Showalter TN and Vapiwala N (2017). "ACR appropriateness criteria: Permanent source brachytherapy for prostate cancer." *Brachytherapy* 16(2): 266-276.

[Full-Text](#)

Department of Radiation Oncology

Davis J, **Novotny N**, **Macknis J**, **Alpay-Savasan Z** and **Goncalves LF** (2017). "Diagnosis of neonatal neuroblastoma with postmortem magnetic resonance imaging." *Radiology Case Reports* 12(1): 191-195.

[Full-Text](#)

Department of Surgery

Department of Pathology

Department of Obstetrics and Gynecology

Postmortem magnetic resonance imaging (MRI) is emerging as a valuable tool to accompany traditional autopsy and has potential for use in cases when traditional autopsy is not possible. This case report will review the use of postmortem MRI with limited tissue sampling to differentiate between metastatic neuroblastoma and hepatoblastoma which could not be clearly differentiated with prenatal ultrasound, prenatal MRI, or emergent postnatal ultrasound. The mother presented to our institution at 27 weeks gestation after an obstetric ultrasound at her obstetrician's office identified a large abdominal mass. Fetal ultrasonography and MRI confirmed the mass but were unable to differentiate between neuroblastoma and multifocal hepatoblastoma. The baby was delivered by cesarean section after nonreassuring heart tones led to an emergent cesarean section. The baby underwent decompressive laparotomy to relieve an abdominal compartment syndrome; however, the family eventually decided to withdraw life support. At this time, we performed a whole body postmortem MRI which further characterized the mass as an adrenal neuroblastoma which was confirmed with limited tissue sampling. Postmortem MRI was especially helpful in this case, as the patient's family declined traditional autopsy.

Dawidek MT, **Roach VA**, Ott MC and Wilson TD (2017). "Changing the learning curve in novice laparoscopists: Incorporating direct visualization into the simulation training program." *Journal of Surgical Education* 74(1): 30-36.

[Full-Text](#)

Department of Biomedical Sciences (OU)

OBJECTIVE: A major challenge in laparoscopic surgery is the lack of depth perception. With the development and continued improvement of 3D video technology, the potential benefit of restoring 3D vision to laparoscopy has received substantial attention from the surgical community. Despite this, procedures conducted under 2D vision remain the standard of care, and trainees must become proficient in 2D laparoscopy. This study aims to determine whether incorporating 3D vision into a 2D laparoscopic simulation curriculum accelerates skill acquisition in novices. DESIGN: Postgraduate year-1 surgical specialty residents ($n = 15$) at the Schulich School of Medicine and Dentistry, at Western University were randomized into 1 of 2 groups. The control group practiced the Fundamentals of Laparoscopic Surgery peg-transfer task to proficiency exclusively under standard 2D laparoscopy conditions. The experimental group first practiced peg transfer under 3D direct visualization, with direct visualization of the working field. Upon reaching proficiency, this group underwent a perceptual switch, changing to standard 2D laparoscopy conditions, and once again trained to proficiency. RESULTS: Incorporating 3D direct visualization before training under standard 2D conditions significantly ($p < 0.05$) reduced the total training time to proficiency by 10.9 minutes

or 32.4%. There was no difference in total number of repetitions to proficiency. Data were also used to generate learning curves for each respective training protocol. CONCLUSIONS: An adaptive learning approach, which incorporates 3D direct visualization into a 2D laparoscopic simulation curriculum, accelerates skill acquisition. This is in contrast to previous work, possibly owing to the proficiency-based methodology employed, and has implications for resource savings in surgical training. (Crown Copyright (C) 2016 Published by Elsevier Inc. on behalf of the Association of Program Directors in Surgery. All rights reserved.)

DeBaets AM (2017). "From birth plan to birth partnership: Enhancing communication in childbirth." *American Journal of Obstetrics and Gynecology* 216(1): 31.e31-31.e34.

[Full-Text](#)

Department of Biomedical Sciences (OU)

Birth plans were developed with the intention of enhancing a woman's prepared decision-making in the labor and delivery process and to offer obstetric care providers with important details about those decisions. Through the use of birth plans, women can reflect on their values and choices regarding what care practices and interventions they do and do not want in birth; they can communicate these values in advance to their care providers. However, birth plans are often ineffective at accomplishing their goals for a number of reasons. They may reflect outdated concerns about routine practices or overly emphasize minor matters. Many popular pregnancy websites offer birth plans that use checklist formats, and women who use these are not counseled about which options may require or preclude other options. Some women may have inappropriately rosy expectations of how their labor and delivery processes will progress or have received poor advice. The use of a birth plan may invoke hostility from hospital staff members who may disregard the plans and look down on the women who make them. An alternative approach to the use of birth plans to enhance a woman's participation and informed consent in the birth process is the birth partnership, in which women and their obstetric care providers take time to discuss thoroughly the choices to be made in birth in advance to have those choices best reflect the values of the woman giving birth. Meeting to discuss values and choices before labor offers the opportunity for mutual education between provider and patient about the choices to be made and the values that inform those choices. Effective communication and working to build mutual trust can serve as preventive measures to avoid many conflicts that arise in the birth process.

Deseive S, Shaw LJ, Min JK, Achenbach S, Andreini D, Al-Mallah MH, Berman DS, Budoff MJ, Callister TQ, Cademartiri F, Chang HJ, **Chinnaiyan K**, Chow BJW, Cury RC, DeLago A, Dunning AM, Feuchtner G, Kaufmann PA, Kim YJ, Leipsic J, Marques H, Maffei E, Pontone G, **Raff G**, Rubinshtein R, Villines TC, Hausleiter J and Hadamitzky M (2017). "Improved 5-year prediction of all- cause mortality by coronary CT angiography applying the CONFIRM score." *European Heart Journal-Cardiovascular Imaging* 18(3): 286-293.

[Full-Text](#)

Department of Internal Medicine

Aims To investigate the long-term performance of the CONFIRM score for prediction of all-cause mortality in a large patient cohort undergoing coronary computed tomography angiography (CCTA). Methods and results Patients with a 5-year follow-up from the international multicentreCONFIRM registry were included. The primary endpoint was all-cause mortality. The predictive value of the CONFIRM score over clinical risk scores (Morise, Framingham, and NCEP ATP III score) was studied in the entire patient population as well as in subgroups. Improvement in risk prediction and patient reclassification were assessed using categorical net reclassification index (NRI) and integrated discrimination improvement (IDI). During a median follow-up period of 5.3 years, 982 (6.5%) of 15 219 patients died. The CONFIRM score outperformed the prognostic value of the studied three clinical risk scores (c-indices: CONFIRM score 0.696, NCEP ATP III score 0.675, Framingham score 0.610, Morise score 0.606; c-index for improvement CONFIRM score vs. NCEP ATP III score 0.650, $P < 0.0001$). Application of the CONFIRM score allowed reclassification of 34% of patients when compared with the NCEP ATP III score, which was the best clinical risk score. Reclassification was significant as revealed by categorical NRI (0.06 with 95% CI 0.02 and 0.10, $P = 0.005$) and IDI (0.013 with 95% CI 0.01 and 0.015, $P < 0.001$). Subgroup analysis revealed a comparable performance in a variety of patient subgroups. Conclusions The CONFIRM score permits a significantly improved prediction of mortality over

clinical risk scores for 5 years after CCTA. These findings are consistent in a large variety of patient subgroups.

Dewulf K, Abraham N, **Lamb LE**, Griebing TL, Yoshimura N, Tyagi P, Veerecke A, Bartolone SN, Zwaans BMM, de Ridder D, **Diokno A** and **Chancellor MB** (2017). "Addressing challenges in underactive bladder: Recommendations and insights from the Congress on Underactive Bladder (CURE-UAB)." International Urology and Nephrology: 1-9. ePub Ahead of Print.

[Full-Text](#)

Department of Urology

Dezia AL, Baccus TD, Natavio AM, **Conroy SM** and **Hall LM** (2017). "Implementation of a pharmacist-led patient-controlled analgesia dosing service." Pain Practice. ePub Ahead of Print.

[Full-Text](#)

Department of Anesthesiology

Department of Biomedical Sciences (BHS)

Purpose: The development and implementation of a pharmacist-led patient-controlled analgesia (PCA) dosing service in a large academic institution are described. Summary: To improve pain management at our institution and expand pharmacy clinical services, a pharmacist-led PCA dosing service was developed and implemented. The service is modeled after established antimicrobial and anticoagulation dosing services at our institution. A core group of pharmacists (service leaders) and a pain physician champion developed a policy and guideline and designed electronic medical record (EMR) tools to support the service. Pharmacists were trained by the service leaders to manage acute pain with fentanyl, hydromorphone, or morphine PCA therapy. Cultural and operational barriers to service implementation were identified and resolved.

Conclusion: After implementation of the pharmacist-led PCA dosing service, pharmacists at our institution provide PCA pain management services as part of our pharmacy department's standard practice.

Ding D, Starke RM, Kano H, Mathieu D, Huang PP, Feliciano C, Rodriguez-Mercado R, Almodovar L, **Grills IS**, Silva D, Abbassy M, Missios S, Kondziolka D, Barnett GH, Dade Lunsford L and Sheehan JP (2017). "International multicenter cohort study of pediatric brain arteriovenous malformations. Part 1: Predictors of hemorrhagic presentation." Journal of Neurosurgery: Pediatrics 19(2): 127-135.

[Request Form](#)

Department of Radiation Oncology

Ding D, Starke RM, Kano H, Mathieu D, Huang PP, Kondziolka D, Feliciano C, Rodriguez-Mercado R, Almodovar L, **Grills IS**, Silva D, Abbassy M, Missios S, Barnett GH, Lunsford LD and Sheehan JP (2017). "Stereotactic radiosurgery for a randomized trial of unruptured brain arteriovenous malformations (ARUBA)-eligible spetzler-martin grade I and II arteriovenous malformations: A multicenter study." World Neurosurgery. ePub Ahead of Print.

[Full-Text](#)

Department of Radiation Oncology

OBJECTIVE: A Randomized Trial of Unruptured Brain Arteriovenous Malformations (ARUBA) found better short-term outcomes after conservative management compared to intervention for unruptured arteriovenous malformations (AVM). However, since Spetzler-Martin (SM) grade I-II AVMs have the lowest treatment morbidity, sufficient follow-up of these lesions may demonstrate a long-term benefit from intervention. The aim of this multicenter, retrospective cohort study is to assess the outcomes after stereotactic radiosurgery (SRS) for ARUBA-eligible SM grade I-II AVMs. METHODS: We pooled SRS data for AVM patients from seven institutions, and selected ARUBA-eligible SM grade I-II AVMs with ≥ 12 months follow-up for analysis. Favorable outcome was defined as AVM obliteration, no post-SRS hemorrhage, and no permanently symptomatic radiation-induced changes (RIC). RESULTS: The ARUBA-eligible SM grade I-II AVM cohort comprised 232 patients (mean age 42 years). The mean nidus volume, SRS margin dose, and follow-up duration were 2.1 cm³, 22.5 Gy, and 90.5 months, respectively. The actuarial obliteration rates at 5 and 10 years were 72% and 87%, respectively; annual post-SRS hemorrhage rate was 1.0%; symptomatic and permanent RIC occurred in 8% and 1%, respectively; and favorable outcome was achieved in 76%. Favorable

outcome was significantly more likely in patients treated with a margin dose >20 Gy (83%) vs. ≤20 Gy (62%; P<0.001). Stroke or death occurred in 10% after SRS. CONCLUSIONS: For ARUBA-eligible SM grade I-II AVMs, long-term SRS outcomes compare favorably with the natural history. SRS should be considered for adult patients harboring unruptured, previously untreated low-grade AVMs with a minimum life expectancy of a decade.

Ding DL, Starke RM, Kano H, Lee JYK, Mathieu D, Pierce J, Huang PP, Feliciano C, Rodriguez-Mercado R, Almodovar L, **Grills IS**, Silva D, Abbassy M, Missios S, Kondziolka D, Barnett GH, Lunsford LD and Sheehan JP (2017). "Stereotactic radiosurgery for Spetzler-Martin Grade III arteriovenous malformations: An international multicenter study." Journal of Neurosurgery 126(3): 859-871.

[Request Form](#)

Department of Radiation Oncology

OBJECTIVE Because of the angioarchitectural diversity of Spetzler-Martin (SM) Grade III arteriovenous malformations (AVMs), the management of these lesions is incompletely defined. The aims of this multicenter, retrospective cohort study were to evaluate the outcomes after stereotactic radiosurgery (SRS) for SM Grade III AVMs and to determine the factors predicting these outcomes. METHODS The authors analyzed and pooled data from patients with SM Grade III AVMs treated with SRS at 8 institutions participating in the International Gamma Knife Research Foundation. Patients with these AVMs and a minimum follow-up length of 12 months were included in the study cohort. An optimal outcome was defined as AVM obliteration, no post-SRS hemorrhage, and no permanently symptomatic radiation-induced changes (RICs). Data were analyzed by univariate and multivariate regression analyses. RESULTS The SM Grade III AVM cohort comprised 891 patients with a mean age of 34 years at the time of SRS. The mean nidus volume, radiosurgical margin dose, and follow-up length were 4.5 cm³, 20 Gy, and 89 months, respectively. The actuarial obliteration rates at 5 and 10 years were 63% and 78%, respectively. The annual postradiosurgery hemorrhage rate was 1.2%. Symptomatic and permanent RICs were observed in 11% and 4% of the patients, respectively. Optimal outcome was achieved in 56% of the patients and was significantly more frequent in cases of unruptured AVMs (OR 2.3, p < 0.001). The lack of a previous hemorrhage (p = 0.037), absence of previous AVM embolization (p = 0.002), smaller nidus volume (p = 0.014), absence of AVM-associated arterial aneurysms (p = 0.023), and higher margin dose (p < 0.001) were statistically significant independent predictors of optimal outcome in a multivariate analysis. CONCLUSIONS Stereotactic radiosurgery provided better outcomes for patients with small, unruptured SM Grade III AVMs than for large or ruptured SM Grade III nidi. A prospective trial or registry that facilitates a comparison of SRS with conservative AVM management might further clarify the authors' observations for these often high-risk AVMs.

Dogan AC, Wayne S, **Bauer S**, **Ogunyemi D**, Kulkarni SK, Maulik D, **Carpenter CF** and **Bahado-Singh RO** (2017). "The Zika virus and pregnancy: Evidence, management, and prevention." Journal of Maternal-Fetal & Neonatal Medicine 30(4): 386-396.

[Request Form](#)

Department of Obstetrics and Gynecology

Objective: To comprehensively review the available evidence and existing consensus reports and guidelines regarding the pregnancy and reproductive implications of the mosquito-transmitted Zika virus (ZIKV) infection. A primary focus was to provide pertinent information to aid clinicians in the management of pregnancies at risk for, exposed to, or with confirmed ZIKV infection. Method: An extensive literature review was performed using Pubmed. Practice guidelines and consensus reports were accessed from international, national, and professional organizations' websites. The clinical articles for ZIKV infection testing varied from case reports to small epidemiologic studies. Results: A ZIKV epidemic has been declared in several countries in the Americas. Fifty-two travel-associated ZIKV infection cases have been reported throughout the USA (as of February 10, 2016). The consequences of congenital fetal/newborn ZIKV infection could potentially have devastating consequences including miscarriage, fetal death, and major anomalies such as microcephaly, brain and brain-stem defects, and long-term neurologic sequelae. While not definitive, current evidence suggests the existence of nonvector-borne transmission through sexual activity with an infected male

partner. For women at risk for sexual transmission, condom use is advised, especially during pregnancy. Conclusion: While ZIKV infection appears to be a mild disease in the general population the potential consequences to the fetus and newborn could be profound. Management guidelines are currently evolving and will be significantly impacted as new evidence develops. It is therefore imperative that obstetric health-care providers keep abreast of this rapidly evolving information landscape that has so far characterized this outbreak.

Dubovoy A, Chang P, Persad C, **Lau W**, Jewell E, Cox D and Engoren M (2017). "Forbidden word entropy of cerebral oximetric values predicts postoperative neurocognitive decline in patients undergoing aortic arch surgery under deep hypothermic circulatory arrest." *Annals of Cardiac Anaesthesia* 20(2): 135-140.

[Full-Text](#)

Department of Anesthesiology

PURPOSE: Up to 53% of cardiac surgery patients experience postoperative neurocognitive decline. Cerebral oximetry is designed to detect changes in cerebral tissue saturation and therefore may be useful to predict which patients are at risk of developing neurocognitive decline. METHODS: This is a retrospective analysis of a prospective study originally designed to determine if treatment of cerebral oximetry desaturation is associated with improvement in postoperative cognitive dysfunction in patients undergoing aortic reconstruction under deep hypothermic circulatory arrest. Cognitive function was measured, preoperatively and 3 months postoperatively, with 15 neuropsychologic tests administered by a psychologist; the individual test scores were summed and normalized. Bilateral cerebral oximetry data were stored and analyzed using measures of entropy. Cognitive decline was defined as any decrease in the summed normalized score from baseline to 3 months. RESULTS: Seven of 17 (41%) patients suffered cognitive decline. There was no association between baseline cerebral oximetry and postoperative cognitive dysfunction. Nor were changes in oximetry values associated with cognitive decline. However, cognitive decline was associated with loss of forbidden word entropy (FwEn) (correlation: Rho rho = 0.51, P = 0.037 for left cerebral oximetry FwEn and rho = 0.54, P = 0.025 for right cerebral oximetry FwEn). CONCLUSION: Postoperative cognitive decline was associated with loss of complexity of the time series as shown by a decrease in FwEn from beginning to end of the case. This suggests that regulation of cerebral oximetry is different between those who do and those who do not develop cognitive decline.

Eastwood JL, Koppelman-White E, **Mi M**, **Wasserman JA**, Krug EF and **Joyce B** (2017). "Epistemic cognition in medical education: A literature review." *International Journal of Medical Education* 8: 1-12. ePub Ahead of Print.

[Full-Text](#)

Medical Library

Department of Biomedical Sciences (OU)

Objective: To review the research literature on epistemic cognition in medical education. Methods: We conducted database searches using keywords related to epistemic cognition and medical education or practice. In duplicate, authors selected and reviewed empirical studies with a central focus on epistemic cognition and participant samples including medical students or physicians. Independent thematic analysis and consensus procedures were used to identify major findings about epistemic cognition and implications for research and medical education. Results: Twenty-seven articles were selected. Themes from the findings of selected studies included developmental frameworks of epistemic cognition revealing simple epistemological positions of medical learners, increasing epistemological sophistication with experience, relationships between epistemic cognition and context, patterns in epistemic orientations to clinical practice, and reactions to ambiguity and uncertainty. Many studies identified the need for new instruments and methodologies to study epistemic cognition in medical education settings and its relationship to clinical outcomes. Relationships between epistemological beliefs and humanistic patient care and influences of medical education practices were commonly cited implications for medical education. Conclusions: Epistemic cognition is conceptualized and operationalized in a variety of ways in the medical research literature. Advancing theoretical frameworks and developing new methodological approaches to examine epistemic cognition are important areas for future research. Also, examination of the relationship between the contexts of medical learning and practice and epistemic cognition has potential for improving medical education. This

work also establishes a need for further investigation into the implications of epistemic cognition for humanistic orientations and ultimately for patient care.

Engwall KD (2017). "Anne O'Tate." Journal of the Medical Library Association 105(2): 200-202.

[Full-Text](#)

Medical Library

Ezekwudo DE, Ogunleye F, Gbadamosi B, Blankenship LM, Kinoyan M, **Krauss D, Hollander M**, Haberichter K and **Jaiyesimi I** (2017). "Primary extranodal diffuse large B-cell lymphoma of the prostate: A case report." Case Reports in Oncology 10(1): 199-204.

[Full-Text](#)

Department of Radiation Oncology

Department of Urology

Department of Internal Medicine

We report a case of primary diffuse large B-cell lymphoma of the prostate in a 54-year-old Caucasian male who presented with urinary retention and benign prostatic hyperplasia. We discuss the rare presentation of this disease and its clinicopathologic features and review the literature for up-to-date information on the diagnosis and clinical management. Despite the low incidence of lymphoma involving the prostate gland, it should always be considered as part of the differential diagnosis in cases of prostate gland enlargement with urinary tract obstructive symptoms resistant to medical therapy. Treatment modalities for this rare disease are also discussed.

Falatko JM, **Dalal B** and Qu L (2017). "Impact of anticoagulation in elderly patients with pulmonary embolism that undergo IVC filter placement: A retrospective cohort study." Heart Lung and Circulation. ePub Ahead of Print.

[Full-Text](#)

Department of Internal Medicine

Background: Anticoagulation is the primary treatment for pulmonary embolism (PE). Inferior vena cava (IVC) filters are an adjunctive intervention to prevent recurrent pulmonary embolism. Long-term outcomes in elderly patients with contraindications to anticoagulation after IVC filter placement for prevention of recurrent pulmonary embolism have yet to be assessed. Materials and Methods: Patients \geq 60 years of age, that had an IVC filter placed between January 1st, 2008 and February 2nd, 2013, with a primary diagnosis of pulmonary embolism, were included. Patients that died during index hospitalisation, were discharged to hospice, or had active malignancy were excluded. The primary endpoint was overall survival. Patients were divided depending on whether they were treated with an approved anticoagulant for VTE or had no anticoagulant. Results: Of the 152 patients identified, 55 were not anti-coagulated after IVC filter placement. The incidence of death was 0.4 per 1000 filter days and 0.7 per 1000 filter days in the anti-coagulated and untreated groups respectively (p -value = 0.06). After statistical correction for co-morbid conditions, the effect of anticoagulation was not significant (HR 0.82 CI 0.49-1.37, p -value 0.46). Age was a significant confounder that was associated with death. Increased BMI was protective. Indications for IVC filter placement were numerous, but similar between the two groups. Conclusion: Treatment with an approved anticoagulant is recommended after IVC filter placement for prevention of recurrent PE, however its effect may be attenuated by advanced age. In elderly patients that have undergone IVC filter placement for prevention of recurrent PE, survival may be more dependent on age and co-morbid conditions than exposure to anticoagulation.

Feinberg RK, Hu J, Weaver MA, Fillingim RB, **Swor RA**, Peak DA, Jones JS, Rathlev NK, Lee DC, Domeier RM, Hendry PL, Liberzon I and McLean SA (2017). "Stress-related psychological symptoms contribute to axial pain persistence after motor vehicle collision: Path analysis results from a prospective longitudinal study." Pain 158(4): 682-690.

[Full-Text](#)

Department of Emergency Medicine

Posttraumatic stress disorder (PTSD) symptoms and pain after traumatic events such as motor vehicle collision (MVC) have been proposed to be mutually promoting. We performed a prospective multicenter

study that enrolled 948 individuals who presented to the emergency department within 24 hours of MVC and were discharged home after evaluation. Follow-up evaluations were completed 6 weeks, 6 months, and 1 year after MVC. Path analysis results supported the hypothesis that axial pain after MVC consistently promotes the maintenance of hyperarousal and intrusive symptoms, from the early weeks after injury through 1 year. In addition, path analysis results supported the hypothesis that one or more PTSD symptom clusters had an influence on axial pain outcomes throughout the year after MVC, with hyperarousal symptoms most influencing axial pain persistence in the initial months after MVC. The influence of hyperarousal symptoms on pain persistence was only present among individuals with genetic vulnerability to stress-induced pain, suggesting specific mechanisms by which hyperarousal symptoms may lead to hyperalgesia and allodynia. Further studies are needed to better understand the specific mechanisms by which pain and PTSD symptoms enhance one another after trauma, and how such mechanisms vary among specific patient subgroups, to better inform the development of secondary preventive interventions.

Fergus J, Chehab M, **Ciacci J**, **Handel J**, **Vartanian S**, **Campbell J** and **Savin M** (2017). "Abstract No. 505 - Etiology of hepatocellular carcinoma and overall survival of patients treated with yttrium-90 microspheres." *Journal of Vascular and Interventional Radiology* 28(Sup 1): S215.

[Full-Text](#)

OUWB Medical Student Author

Department of Diagnostic Radiology and Molecular Imaging

Fong A, Chau CT, Quant C, Duffy J, Pan D and **Ogunyemi DA** (2017). "Multiple sclerosis in pregnancy: prevalence, sociodemographic features, and obstetrical outcomes." *Journal of Maternal-Fetal and Neonatal Medicine*: 1-6. ePub Ahead of Print.

[Request Form](#)

Department of Obstetrics and Gynecology

Objective: We sought to describe the prevalence, sociodemographic features, and antenatal/peripartum outcomes of multiple sclerosis (MS) in pregnancy. Study design: A retrospective cohort study was performed using deliveries in California from 2001 to 2009. Cases of MS as well as other morbidities were identified via ICD-9-CM code. Logistic regression was performed to adjust for potential confounders. Results: About 1185 out of 4,424,049 deliveries were complicated by MS. MS prevalence increased with maternal age, with Caucasians comprising a higher proportion of MS subjects. MS subjects were older and more likely to have private insurance. Women with MS were more likely to have preexisting medical conditions such as asthma, chronic hypertension, thyroid disease, or cardiac disease. However, no significant antepartum and peripartum morbidities were found to be increased in patients with MS. Urinary tract infection, cesarean delivery, and induction of labor were slightly increased in MS patients. Conclusions: MS is a rare condition which is more likely to affect older Caucasian women of higher socioeconomic status and is associated with several preexisting medical conditions. MS, however, does not appear to pose significant increases in adverse pregnancy outcome. This suggests that pregnant patients with MS may likely experience an uneventful pregnancy.

Fong A, Simon-Freeman R, Westermann M, Pan D and **Ogunyemi DA** (2017). "Maternal depression in pregnancy and its association with adverse perinatal outcomes." *American Journal of Obstetrics and Gynecology* 216(1): S439.

[Full-Text](#)

Department of Obstetrics and Gynecology

OBJECTIVE: To describe sociodemographic features and perinatal outcomes of pregnancies affected by maternal depressive disorder. STUDY DESIGN: A retrospective cross-sectional study was performed using all deliveries from 2001-2009 in California. Pregnancies affected by depression, as well as medical and obstetrical co-morbidities, were identified using ICD-9-CM. Logistic regression was used to adjust for potential confounders. RESULTS: Maternal depression complicated 2.4% of pregnancies (107,208 cases in 4,424,049 deliveries). African Americans (5.9%) and Native Americans (6.7%) had the highest age-adjusted prevalence of depression, while Asians (0.8%) and Hispanics (1.3%) had the lowest prevalence. Mothers with depression had higher rates of pre-existing medical conditions such as asthma, chronic hypertension,

diabetes and cardiac disease. They also demonstrated a 9- fold higher risk of poor prenatal care (OR 9.34, 95% CI 9.15-9.52) and a more than 16-fold higher risk of both tobacco use (OR 16.1, 95% CI 15.6-16.6) and drug dependence (OR 16.5, 95% CI 15.7- 17.3). After adjustment for age, race, payer status and medical comorbidities, numerous adverse pregnancy outcomes were increased in patients with depression including preeclampsia/ eclampsia (OR 1.4, 95% CI 1.4-1.5), preterm delivery (OR 2.0, 95% CI 1.9-2.0), fetal growth restriction (OR 1.6, OR 1.5-1.7), fetal demise (OR 2.0, 95% CI 1.9-2.1) and abruption (OR 2.4, 95% CI 2.3-2.5). Postpartum endometritis (OR 1.6, 95% CI 1.5-1.7) and postpartum hemorrhage (OR 1.4, 1.4-1.5) were also increased. CONCLUSION: The negative impact which maternal depression imposes on numerous pregnancy outcomes is not widely recognized. Our data demonstrate that mothers with depression have certain ethnic predilections, insufficient prenatal care, higher risks of substance abuse, and increased maternal and fetal risks. Mothers with depression comprise an extremely vulnerable population; it is thus imperative to ensure access to quality prenatal care, provide appropriate counseling, and to be vigilant for adverse perinatal outcomes. (Table Presented).

Francis JH, Kim J, Lin A, **Folberg R**, Iyer S and Abramson DH (2017). "Growth of uveal melanoma following intravitreal bevacizumab." Ocular Oncology and Pathology 3(2): 117-121.

[Request Form](#)

Administration

Purpose: Typically treatment of large melanomas (by Collaborative Ocular Melanoma Study criteria) is restricted to enucleation, due to size constraints for plaque brachytherapy. Because primary and metastatic uveal melanoma cells are inhibited by bevacizumab (an anti-vascular endothelial growth factor), this prospective study evaluated the impact of intravitreal bevacizumab on large uveal melanomas that were destined for enucleation. Size reduction by bevacizumab would potentially salvage these eyes by making them eligible for treatment with plaque brachytherapy. Procedures: Two patients with large uveal melanoma were each treated with one intravitreal injection of bevacizumab (1.25 mg/0.05 mL). Results: Both tumors displayed paradoxical growth 1 week following the injection, with confirmed growth 1 week later (increase from baseline of 1.1 mm in one eye and 3.1 mm in the other eye). Both eyes were enucleated and monosomy 3 and vasculogenic mimicry patterns were identified in both tumors. At 9 years follow-up, both patients were alive and metastasis free. Conclusion: These patients demonstrate that neoadjuvant intravitreal bevacizumab does not decrease the size of large uveal melanomas and may, in fact, result in their paradoxical growth. This observation supports a cautious approach in the use of intravitreal bevacizumab for uveal melanoma, particularly in the neoadjuvant setting.

Frisch NB, Nahm NJ, **Khalil JG**, Les CM, Guthrie ST and Charters MA (2017). "Short versus long cephalomedullary nails for pertrochanteric hip fracture." Orthopedics 40(2): 83-88.

[Request Form](#)

Department of Orthopedic Surgery

Fu L, Shi J, Liu A, Zhou L, Jiang M, Fu H, Xu K, Li D, Deng A, Zhang Q, Pang Y, Guo Y, Hu K, **Zhou J**, Wang Y, Huang W, Jing Y, Dou L, Wang L, Xu K, Ke X, Nervi C, Li Y and Yu L (2017). "A minicircuitry of microRNA-9-1 and RUNX1-RUNX1T1 contributes to leukemogenesis in t(8;21) acute myeloid leukemia." International Journal of Cancer 140(3): 653-661.

[Full-Text](#)

Department of Radiation Oncology

Garber AJ, Abrahamson MJ, Barzilay JI, Blonde L, Bloomgarden ZT, Bush MA, Dagogo-Jack S, DeFronzo RA, Einhorn D, Fonseca VA, Garber JR, Garvey WT, **Grunberger G**, Handelsman Y, Hirsch IB, Jellinger PS, McGill JB, Mechanick JI, Rosenblit PD and Umpierrez GE (2017). "Consensus Statement by the American Association of Clinical Endocrinologists and American College of Endocrinology on the Comprehensive Type 2 Diabetes Management Algorithm-2017 Executive Summary." Endocrine Practice 23(2): 207-238.

[Request Form](#)

Department of Internal Medicine

This document represents the official position of the American Association of Clinical Endocrinologists and American College of Endocrinology. Where there were no randomized controlled trials or specific U.S. FDA labeling for issues in clinical practice, the participating clinical experts utilized their judgment and experience. Every effort was made to achieve consensus among the committee members. Position statements are meant to provide guidance, but they are not to be considered prescriptive for any individual patient and cannot replace the judgment of a clinician.

Garg L, Agrawal S, Pew T, **Hanzel GS, Abbas AE, Gallagher MJ, Shannon FL** and Hanson ID (2017). "Psoas muscle area as a predictor of outcomes in transcatheter aortic valve implantation." [American Journal of Cardiology](#) 119(3): 457-460.

[Full-Text](#)

Department of Internal Medicine

Department of Surgery

Garg L, Akbar G, Agrawal S, Agarwal M, Khaddour L, Handa R, Garg A, Shah M, Patel B and **Dalal BD** (2017). "Drug-induced pulmonary arterial hypertension: A review." [Heart Failure Reviews](#): 1-9. ePub Ahead of Print.

[Full-Text](#)

Department of Internal Medicine

Pulmonary arterial hypertension (PAH) is a subgroup of PH patients characterized hemodynamically by the presence of pre-capillary PH, defined by a pulmonary artery wedge pressure (PAWP) ≤ 15 mmHg and a PVR > 3 Wood units (WU) in the absence of other causes of pre-capillary PH. According to the current classification, PAH can be associated with exposure to certain drugs or toxins such as anorectic agents, amphetamines, or selective serotonin reuptake inhibitors. With the improvement in awareness and recognition of the drug-induced PAH, it allowed the identification of additional drugs associated with an increased risk for the development of PAH. The supposed mechanism is an increase in the serotonin levels or activation of serotonin receptors that has been demonstrated to act as a growth factor for the pulmonary artery smooth muscle cells and cause progressive obliteration of the pulmonary vasculature. PAH remains a rare complication of several drugs, suggesting possible individual susceptibility, and further studies are needed to identify patients at risk of drug-induced PAH.

George J, Abdulla RK, **Yeow R**, Aggarwal A, **Boura J**, Wegner J and **Franklin BA** (2017). "Daily energy expenditure and its relation to health care costs in patients undergoing ambulatory electrocardiographic monitoring." [American Journal of Cardiology](#) 119(4): 658-663.

[Full-Text](#)

OUWB Medical Student Author

Department of Biomedical Sciences (BHS)

Department of Internal Medicine

Our increasingly sedentary lifestyle is associated with a heightened risk of obesity, diabetes, heart disease, and cardiovascular mortality. Using the recently developed heart rate index formula in 843 patients (mean \pm SD age 62.3 \pm 15.7 years) who underwent 24-hour ambulatory electrocardiographic (ECG) monitoring, we estimated average and peak daily energy expenditure, expressed as metabolic equivalents (METs), and related these data to subsequent hospital encounters and health care costs. In this cohort, estimated daily average and peak METs were 1.7 \pm 0.7 and 5.5 \pm 2.1, respectively. Patients who achieved daily bouts of peak energy expenditure ≥ 5 METs had fewer hospital encounters ($p = 0.006$) and median health care costs that were nearly 50% lower ($p < 0.001$) than their counterparts who attained < 5 METs. In patients whose body mass index was ≥ 30 kg/m², there were significant differences in health care costs depending on whether they achieved < 5 or ≥ 5 METs estimated by ambulatory ECG monitoring ($p = 0.005$). Interestingly, patients who achieved ≥ 5 METs had lower and no significant difference in their health care costs, regardless of their body mass index ($p = 0.46$). Patients with previous percutaneous coronary intervention who achieved ≥ 5 METs had lower health care costs ($p = 0.044$) and fewer hospital encounters ($p = 0.004$) than those who achieved < 5 METs. In conclusion, average and peak daily energy expenditures estimated from ambulatory ECG monitoring may provide useful information regarding health care utilization in patients

with and without previous percutaneous coronary intervention, irrespective of body habitus. Our findings are the first to link lower intensities of peak daily energy expenditure, estimated from ambulatory ECG monitoring, with increased health care utilization. (C) 2016 Elsevier Inc. All rights reserved.

Ghanim MT and **Berman B** (2017). "Immune hemolytic anemia (paroxysmal cold hemoglobinuria) preceding Burkitt lymphoma in a 12-year-old child." Journal of Pediatric Hematology Oncology 39(1): E25-E26.

[Full-Text](#)

Department of Pediatrics

Autoimmune hemolytic anemia (AIHA) in childhood, including paroxysmal cold hemoglobinuria, is an uncommon, potentially life-threatening disorder. AIHA is a recognized complication of several varieties of lymphoproliferative disorders, including high-grade B-cell lymphoma, but it has not been associated with Burkitt lymphoma in people without an underlying immunodeficiency. When AIHA occurs in association with lymphoproliferative disorders, it may precede or accompany the diagnosis of malignant disease or herald relapse. We report a novel case of a previously healthy child diagnosed with paroxysmal cold hemoglobinuria 14 months preceding the development of Burkitt lymphoma.

Gillera JP, Killinger K, **Bartley JM**, Gaines NP, Nguyen L, **Boura J** and **Peters KM** (2017). "Characteristics associated with neuromodulation device explantation for declining efficacy." Neurourology and Urodynamics 36(Sup 1): S144.

[Full-Text](#)

Department of Urology

Department of Biomedical Sciences (BHS)

Introduction: Patients with implanted neurostimulation devices for bladder symptoms may undergo explantation for a variety of reasons. We explored whether explantation for declining efficacy is associated with symptom severity or other patient characteristics. Methods: We reviewed patients in our prospective database that had an implantable pulse generator (IPG) placed. Those that were eventually explanted for declining symptoms were propensity matched 1:2 with non-explanted controls on age, gender, lead location, primary indication for implant, and length of follow up. History, baseline voiding diaries, and Interstitial Cystitis Symptom/Problem Index (ICSUPI) and Overactive Bladder symptom severity (OABq ss)/health related quality of life (HRQOL) at baseline and 3 months were compared between groups with Pearson's Chi-square, Fisher's Exact, and Wilcoxon rank sum tests. Results: Fifty-two explanted patients were matched with 104 controls. Explants were performed at years 1-6 in 19, 29, 39, 44, 49 and 52, respectively. Most in both groups had overactive bladder with urge incontinence. When compared, a lower proportion in the explanted group reported marked/moderate improvement in symptoms after lead placement and just prior to IPG implant (13/19; 68.5% vs. 58/63; 92.1%; $p = 0.016$). After implant, more explanted patients had a complication (18/52; 34.6% vs. 3/104; 2.9%; $p = 0.0001$). Explanted patients had more reprogrammings within the first year (median 2 vs. 0.5; $p < 0.0001$). Baseline voiding diaries, and baseline and three-month ICSUPI scores, did not differ between groups. Although the explanted group overall had better HRQOL scores at baseline, in just those patients that completed both baseline and three-month measures there were no statistically significant differences at either time point between groups. In addition, the explanted group had fewer with hypertension (40.4% vs. 58.7%, $p = 0.031$), fewer comorbidities (median 1 vs. 2, $p = 0.026$), higher income ($p = 0.019$), and more women on hormone replacement therapy (34.9% vs. 10.2%; $p = 0.0006$) even though the proportions that were postmenopausal were similar. Conclusion: Explanted patients had more comorbidities, complications, and lower rate of marked/moderate improvement after lead placement. Baseline and follow up symptom measures were similar indicating that symptoms are not associated with explanation.

Gillera JP, **Yunker A**, Gaines NP, **Peters KM**, Nguyen L, Killinger KA, **Bartley JM**, **Boura JA** and **Sirls LT** (2017). "Adverse events after intradetrusor onabotulinumtoxin A injection in idiopathic detrusor overactivity." Neurourology and Urodynamics 36(Sup 1): S66-S67.

[Full-Text](#)

Department of Urology

OUWB Medical Student Author

Department of Biomedical Sciences (BHS)

Introduction: The literature reports rates of transient urinary retention requiring catheter use after intradetrusor onabotulinumtoxinA ranging from 4 to 43%. We evaluated the rate of and factors predicting catheter use and adverse events after this treatment. Methods: Retrospective review of patients who underwent intradetrusor onabotulinumtoxinA injection from January 1, 2010 to September 1, 2015, excluding patients with a history of neurologic diagnosis. History, procedural details, and postprocedure data were reviewed. Descriptive statistics and Wilcoxon rank sum test were performed. Results: There were 126 patients identified with mean age of 65.6 ± 16.2 yr, 22% had a history of diabetes, and pre-procedure post-void residual was 37mL. 87 patients had urodynamics. Mean follow-up was 236.9 days. 100U of toxin was injected in 110/124 (88.7%) of patients, 150U in 12 (9.7%), and 200U in two (1.6%). Our general algorithm was to initiate catheter use when the PVR was >350 cc or at a lower volume if the patient was symptomatic. Mean post-procedure PVR was 152.7 ± 192 mL (range 20-1000mL). Within two weeks, 20/124 (16.1%) of patients were started on catheterization, 16 for elevated PVR and four for symptoms. Seven had an indwelling catheter and 13 started self-catheterization. All patients requiring catheterization received 100U. No relationship was found between urodynamic detrusor overactivity (DO), mean cystometric capacity, or Qmax and the need for catheterization. Adverse events included 8/124 (6.5%) with gross hematuria (GH) and 13/124 (10.5%) with a UTI. Patients with GH received a mean of 138 ± 52 U vs. 111 ± 37 U in those without GH ($p = 0.023$). Increased risk of catheterization was seen with history of previous Interstim (10/20 patients catheterized had prior Interstim vs. 22/101 not requiring catheter had prior Interstim, $p = 0.009$) as well as having a functioning, "on" Interstim (4/14 (28.6%) "on" pts catheterized vs. 8/86 (9.3%) "off" pts, $p = 0.06$). Conclusion: Our catheterization rate after intradetrusor onabotulinumtoxinA in neurologically normal patients with idiopathic overactive bladder was 16%. Need for catheter was associated with history of prior Interstim and with Interstim "on" vs. "off".

Giuliani ME, Hope A, Mangona V, Guckenberger M, Mantel F, Peulen H, Sonke JJ, Belderbos J, Werner-Wasik M, Ye H and **Grills IS** (2017). "Predictors and patterns of regional recurrence following lung SBRT: A report from the Elekta Lung Research Group." Clinical Lung Cancer 18(2): 162-168.

[Full-Text](#)

Department of Radiation Oncology

Goble M, Avula S, Duquette D, Gillary R, Fosse G, **Swor RA**, Bowers M, Russell M and **Cutler N** (2017). "Sudden cardiac arrest preparedness in Michigan: Partnering with project ADAM to develop a HEARTSafe schools state model." Progress in Pediatric Cardiology. ePub Ahead of Print.

[Full-Text](#)

Department of Emergency Medicine

Department of Pediatrics

Goldstein JA (2017). "Radiation attenuating hand cream: Better than bare." Catheterization and Cardiovascular Interventions 89(4): 716-717.

[Full-Text](#)

Department of Internal Medicine

Goncalves LF, Berger JA, **Macknis JK**, **Bauer ST** and **Bloom DA** (2017). "Grebe dysplasia - prenatal diagnosis based on rendered 3-D ultrasound images of fetal limbs." Pediatric Radiology 47(1): 108-112.

[Full-Text](#)

Department of Obstetrics and Gynecology

Department of Pathology

Department of Diagnostic Radiology and Molecular Imaging

Grebe dysplasia is a rare skeletal dysplasia characterized by severe acromesomelic shortening of the long bones in a proximal to distal gradient of severity, with bones of the hands and feet more severely affected than those of the forearms and legs, which in turn are more severely affected than the humeri and femora. In addition, the bones of the lower extremities tend to be more severely affected than the bones of the upper extremities. Despite the severe skeletal deformities, the condition is not lethal and surviving individuals can

have normal intelligence. Herein we report a case of Grebe dysplasia diagnosed at 20 weeks of gestation. Rendered 3-D ultrasound images of the fetal limbs, particularly of the characteristic tiny and globular-looking fingers and toes, were instrumental in accurately characterizing the phenotype prenatally.

Gordon NF, Salmon RD, Sperling LS, Wright BS, Faircloth GC, Gordon TL, Berk MR, Rubenfire M and **Franklin BA** (2017). "Multicenter study of temporal trends in the achievement of atherosclerotic cardiovascular disease risk factor goals during cardiac rehabilitation." Journal of Cardiopulmonary Rehabilitation and Prevention 37(1): 11-21.

[Full-Text](#)

Department of Internal Medicine

Graham SF, Chevallier OP, Kumar P, Turkoglu O and **Bahado-Singh RO** (2017). "Metabolomic profiling of brain from infants who died from Sudden Infant Death Syndrome reveals novel predictive biomarkers." Journal of Perinatology 37(1): 91-97.

[Request Form](#)

Department of Obstetrics and Gynecology

OBJECTIVE: Sudden Infant Death Syndrome (SIDS) is defined as the sudden death of an infant < 1 year of age that cannot be explained following a thorough investigation. Currently, no reliable clinical biomarkers are available for the prediction of infants who will die of SIDS. STUDY DESIGN: This study aimed to profile the medulla oblongata from postmortem human brain from SIDS victims (n=16) and compare their profiles with that of age-matched controls (n=7). RESULTS: Using LC-Orbitrap-MS, we detected 12 710 features in electrospray ionization' positive (ESI+) mode and 8243 in ESI mode from polar extracts of brain. Five features acquired in ESI+ mode produced a predictive model for SIDS with an area under the receiver operating characteristic curve (AUC) of 1 (confidence interval (CI): 0.995-1) and a predictive power of 97.4%. Three biomarkers acquired in ESI-mode produced a predictive model with an AUC of 0.866 (CI: 0.767-0.942) and a predictive power of 77.6%. We confidently identified 5 of these features (I-(+)-ergothioneine, nicotinic acid, succinic acid, adenosine monophosphate and azelaic acid) and putatively identify another 4 out of the 15 in total. CONCLUSIONS: This study underscores the potential value of metabolomics for studying SIDS. Further characterization of the metabolome of postmortem SIDS brains could lead to the identification of potential antemortem biomarkers for novel prevention strategies for SIDS.

Grover FL, Vemulapalli S, Carroll JD, Edwards FH, Mack MJ, Thourani VH, Brindis RG, Shahian DM, Ruiz CE, Jacobs JP, **Hanzel G**, Bavaria JE, Tuzcu EM, Peterson ED, Fitzgerald S, Kourtis M, Michaels J, Christensen B, Seward WF, Hewitt K, Holmes DR and Registry S-AT (2017). "2016 annual report of the Society of Thoracic Surgeons/American College of Cardiology Transcatheter Valve Therapy Registry." Journal of the American College of Cardiology 69(10): 1215-1230.

[Full-Text](#)

Department of Internal Medicine

BACKGROUND The Society of Thoracic Surgeons (STS)/ American College of Cardiology Transcatheter Valve Therapy (TVT) Registry captures all procedures with Food and Drug Administration-approved transcatheter valve devices performed in the United States, and is mandated as a condition of reimbursement by the Centers for Medicaid & Medicare Services. OBJECTIVES This annual report focuses on patient characteristics, trends, and outcomes of transcatheter aortic and mitral valve catheter-based valve procedures in the United States. METHODS We reviewed data for all patients receiving commercially approved devices from 2012 through December 31, 2015, that are entered in the TVT Registry. RESULTS The 54,782 patients with transcatheter aortic valve replacement demonstrated decreases in expected risk of 30-day operative mortality (STS Predicted Risk of Mortality [PROM]) of 7% to 6% and transcatheter aortic valve replacement PROM (TVT PROM) of 4% to 3% (both $p < 0.0001$) from 2012 to 2015. Observed in-hospital mortality decreased from 5.7% to 2.9%, and 1-year mortality decreased from 25.8% to 21.6%. However, 30-day post-procedure pacemaker insertion increased from 8.8% in 2013 to 12.0% in 2015. The 2,556 patients who underwent transcatheter mitral leaflet clip in 2015 were similar to patients from 2013 to 2014, with hospital mortality of 2% and with mitral regurgitation reduced to grade # 2 in 87% of patients ($p < 0.0001$). The 349 patients who underwent mitral valve-in-valve and mitral valve-in-ring procedures were high risk, with an STS PROM for mitral valve replacement of 11%. The observed hospital mortality was 7.2%, and 30-day

post-procedure mortality was 8.5%. CONCLUSIONS The TVT Registry is an innovative registry that that monitors quality, patient safety and trends for these rapidly evolving new technologies. (J Am Coll Cardiol 2017; 69: 1215-30) c 2017 by the American College of Cardiology Foundation and The Society of Thoracic Surgeons. Published by Elsevier Inc. on behalf of the American College of Cardiology Foundation. All rights reserved.

Grunberger G (2017). "Should side effects influence the selection of antidiabetic therapies in type 2 diabetes?" Current Diabetes Reports 17(4): 21.

[Full-Text](#)

Department of Internal Medicine

Purpose of Review There are currently over 40 different drugs in 12 distinct classes approved in the USA to treat patients with type 2 diabetes mellitus. This review summarizes our current knowledge about potential side effects of antidiabetic therapy and attempts to apply it to a clinical practice setting. **Recent Findings** Given the heterogeneity of both the patients and the disease, it is mathematically impossible to test every available drug combination in long-term outcome, prospective, randomized blinded fashion before a clinician decides which agent(s) to prescribe to a specific patient in a given situation. To complicate the clinician's dilemma, there is lack of available tests to predict an individual's response or propensity to side effects. Further, the data available are derived from small, short-term registration trials and typically focus on relative rather than absolute risks of any given drug and do not address the potential adverse outcomes if a patient's diabetes remains untreated. **Summary** Clinicians have to personalize their choice of antidiabetic therapy based both on the specific characteristics of the patient in front of them (stage of diabetes and its complications, overall health status, socioeconomic situation, other medications present, desire to improve control of diabetes, etc.) and the current knowledge about the relative and absolute balance of benefits and risks of any individual medication in that specific patient. It has to be recognized that this requires constant re-evaluation as database of our experience with antidiabetic therapy expands.

Gupta P, Ehlert M, **Sirls LT** and **Peters K** (2017). "Transvaginal pelvic floor muscle injection technique: A cadaver study." Female Pelvic Medicine and Reconstructive Surgery 23(1): 61-63.

[Full-Text](#)

Department of Urology

Habashy JR, **Ghiam B** and Ram R (2017). "The Ram Relaxation Technique: A painless biopsy method. A shave biopsy approach without injectable anesthesia or needles." Dermatologic Surgery 43(4): 521-525.

[Full-Text](#)

OUIWB Medical Student Author

BACKGROUND Shave skin biopsies are essential procedures wherein physicians diagnose dermatologic lesions. The protocol for skin biopsies entails a lidocaine/epinephrine injection. This study suggests an alternative, novel method of performing a shave biopsy that avoids pain, needles, and injectable anesthesia, termed the Ram Relaxation Technique (RRT). **OBJECTIVE** To present a new technique that physicians may chose to form when faced with dermatological biopsies that are painless and needle free. **PATIENTS AND METHODS** Randomly selected, patients were presented to the authors' offices with abnormal skin lesions that required a shave biopsy. The patients were offered the choice of having an anesthetic injection (1% lidocaine, 1:100, 000 epinephrine) or the alternative method (RRT) before the biopsy. Twenty patients (n = 20, 10 men, 10 women) chose the alternative method (RRT) and were the focus of this study. These patients who chose RRT were asked to scale their pain on a scale of 0 to 10 (0 = no pain, 1-3 = mild, 4-6 = moderate, and 7-10 = severe pain). **RESULTS** Fourteen of the 20 patients stated that they experienced no pain (0), 5 experienced mild pain, and 1 patient experienced moderate pain. **CONCLUSION** This study demonstrates an alternative and nearly pain-free method for superficial shave biopsies of the skin for certain patients in the appropriate clinical setting with the appropriate, superficial papule lesions. Dermis lesions, melanocytic lesions, and macular lesions are not ideal candidates given the risk for misdiagnosis, and more pain, respectively.

Haberichter KL and **Crisan D** (2017). "Green neutrophilic inclusions and acute hepatic failure: Clinical significance and brief review of the literature." Annals of Clinical and Laboratory Science 47(1): 58-61.

[Request Form](#)

Department of Pathology

Hakim S, **Bortman J**, Orosey M and **Cappell MS** (2017). "Case report and systematic literature review of a novel etiology of sinistral portal hypertension presenting with UGI bleeding: Left gastric artery pseudoaneurysm compressing the splenic vein treated by embolization of the pseudoaneurysm." Medicine (United States) 96(13): 1-11.

[Full-Text](#)

Department of Internal Medicine

Hakim S, Orosey M, **Amin M** and **Cappell M** (2017). "Startling case of behcet syndrome with atypical presentation and initial EGD and microscopic features overlapping with Crohn's Disease." Inflammatory Bowel Diseases 23(Sup 1): S14.

[Full-Text](#)

Department of Pathology

Department of Internal Medicine

Hale ZD, Kong X, Haymart B, Gu X, Kline-Rogers E, **Almany S**, Kozlowski J, Krol GD, Kaatz S, Froehlich JB and Barnes GD (2017). "Prescribing trends of atrial fibrillation patients who switched from warfarin to a direct oral anticoagulant." Journal of Thrombosis and Thrombolysis 43(2): 283-288.

[Full-Text](#)

Department of Internal Medicine

Hanba C, Svider PF, **Shkoukani MA**, Sheyn A, Jacob JT, Eloy JA and Folbe AJ (2017). "Pediatric pituitary resection: characterizing surgical approaches and complications." International Forum of Allergy and Rhinology 7(1): 72-79.

[Full-Text](#)

Department of Surgery

Harber MP, Kaminsky LA, Arena R, Blair SN, **Franklin BA**, Myers J and Ross R (2017). "Impact of cardiorespiratory fitness on all-cause and disease-specific mortality: Advances since 2009." Progress in Cardiovascular Diseases. ePub Ahead of Print.

[Full-Text](#)

Department of Internal Medicine

Hartley Z and Guimaraes M (2017). "Abstract No. 530 - Walk in clinic: In-hospital or off campus?" Journal of Vascular and Interventional Radiology 28(2): S226.

[Full-Text](#)

OUIWB Medical Student Author

Hauck CR, Ye H, **Chen PY**, **Gustafson GS**, Limbacher A and **Krauss DJ** (2017). "Increasing fractional doses increases the probability of benign PSA bounce in patients undergoing definitive HDR brachytherapy for prostate cancer." International Journal of Radiation Oncology Biology Physics 98(1): 108-114.

[Full-Text](#)

Department of Radiation Oncology

Hothem Z, Baker D, Jenkins CS, Douglas J, Callahan RE, Shuell CC, **Long GW** and **Welsh RJ** (2017). "Predictors of readmission in nonagenarians: Analysis of the American College of Surgeons National Surgical Quality Improvement Project dataset." Journal of Surgical Research 213(Jun): 32-38.

[Full-Text](#)

Department of Surgery

Background Increased longevity has led to more nonagenarians undergoing elective surgery. Development

of predictive models for hospital readmission may identify patients who benefit from preoperative optimization and postoperative transition of care intervention. Our goal was to identify significant predictors of 30-d readmission in nonagenarians undergoing elective surgery. Methods Nonagenarians undergoing elective surgery from January 2011 to December 2012 were identified using the American College of Surgeons National Surgical Quality Improvement Project participant use data files. This population was randomly divided into a 70% derivation cohort for model development and 30% validation cohort. Using multivariate step-down regression, predictive models were developed for 30-d readmission. Results Of 7092 nonagenarians undergoing elective surgery, 798 (11.3%) were readmitted within 30 d. Factors significant in univariate analysis were used to develop predictive models for 30-d readmissions. Diabetes (odds ratio [OR]: 1.51, 95% confidence interval [CI]: 1.24-1.84), dialysis dependence (OR: 2.97, CI: 1.77-4.99), functional status (OR: 1.52, CI: 1.29-1.79), American Society of Anesthesiologists class II or higher (American Society of Anesthesiologist physical status classification system; OR: 1.80, CI: 1.42-2.28), operative time (OR: 1.05, CI: 1.02-1.08), myocardial infarction (OR: 5.17, CI: 3.38-7.90), organ space surgical site infection (OR: 8.63, CI: 4.04-18.4), wound disruption (OR: 14.3, CI: 4.80-42.9), pneumonia (OR: 8.59, CI: 6.17-12.0), urinary tract infection (OR: 3.88, CI: 3.02-4.99), stroke (OR: 6.37, CI: 3.47-11.7), deep venous thrombosis (OR: 5.96, CI: 3.70-9.60), pulmonary embolism (OR: 20.3, CI: 9.7-42.5), and sepsis (OR: 13.1, CI: 8.57-20.1), septic shock (OR: 43.8, CI: 18.2-105.0), were included in the final model. This model had a c-statistic of 0.73, indicating a fair association of predicted probabilities with observed outcomes. However, when applied to the validation cohort, the c-statistic dropped to 0.69, and six variables lost significance. Conclusions A reliable predictive model for readmission in nonagenarians undergoing elective surgery remains elusive. Investigation into other determinants of surgical outcomes, including social factors and access to skilled home care, might improve model predictability, identify areas for intervention to prevent readmission, and improve quality of care.

Hothem Z, Bayci A, Thibodeau BJ, Ketelsen BE, Fortier LE, **Uzieblo AF**, Cosner D, **Totoraitis K**, **Keidan RD** and **Wilson GD** (2017). "Using global gene expression to discriminate thin melanomas with poor outcomes." [Molecular & Cellular Oncology](#) 4(1): e1253527.

[Request Form](#)

Department of Pathology

OUWB Medical Student Author

Department of Surgery

Department of Radiation Oncology

Most melanomas present as thin lesions (≤ 1.0 mm) with a good prognosis; however, a small percentage of patients with thin lesions experience recurrence or metastasis. The aim of our study was to identify a distinct pattern of gene expression within thin melanomas known to have eventually metastasized to regional lymph nodes or distant sites compared with those that followed the typical course with good response to wide local excision alone. Patients who were disease-free for a minimum of 10 y served as controls ($n = 10$) to the experimental group who developed metastasis ($n = 9$). Laser capture microdissection was used to specifically isolate cancer cells from formalin-fixed paraffin-embedded tissue with subsequent gene expression analysis on Affymetrix Human Transcriptome Array 2.0 Arrays. Although gene expression differences were observed between the patients with thin melanoma with poor clinical outcome and those with good clinical outcome, neither the number of genes nor the magnitude of the fold difference was very substantial or significant. Cluster analysis with this subset of genes could definitively separate a subset of the poor responders from the good responders, but there remained a mixed group of tumors that could not be predicted from gene expression alone. Pathway analysis identified cellular processes that were regulated based on the response, including categories commonly associated with melanoma progression. Ultimately, we concluded that there were very few differences between these groups. Future research will be required and investigation of the mutational landscape may be another strategy to uncover genomic changes that drive recurrence and metastasis in thin melanoma.

Hussain RM, Abbey AM, Shah AR, **Drenser KA, Trese MT** and **Capone A** (2017). "Chorioretinal coloboma complications: Retinal detachment and choroidal neovascular membrane." Journal of Ophthalmic & Vision Research 12(1): 3-10.

[Full-Text](#)

Department of Ophthalmology

Jae SY, Kurl S, Laukkanen JA, Yoon ES, Choi YH, Fernhall B and **Franklin BA** (2017). "Relation of heart rate recovery after exercise testing to coronary artery calcification." Annals of Medicine: 1-7. ePub Ahead of Print.

[Request Form](#)

Department of Internal Medicine

Jhang JF, Birder LA, **Chancellor MB** and Kuo HC (2017). "Patient characteristics for different therapeutic strategies in the management ketamine cystitis." Neurourology and Urodynamics 36(3): 687-691.

[Full-Text](#)

Department of Urology

Aims Long-term ketamine abuse results in severely inflamed bladder and intractable bladder pain. Currently there is no guideline for clinician to follow how to manage patients with ketamine cystitis (KC). This study analyzed the KC patient characteristics between who received conservative management and augmentation enterocystoplasty (AE). Methods A total of 53 patients with chronic ketamine abuse and lower urinary tract symptoms were included in this study. All of the patients have been initially treated conservatively but fail. They were admitted for detailed urological examinations. Patients were classified according to their maximal bladder capacity (MBC). The patients with extremely small MBC (<100ml) with or without upper urinary tract damage and very small MBC with upper urinary tract damage were recommended to receive AE. The patient characteristics and treatment outcome are compared between patients with AE and conservative treatment. Results Among them, 28 patients underwent AE and 25 were managed with conservative treatment. The only significant difference between groups was more patients with urgency urinary incontinence underwent AE. Patients underwent AE had significantly smaller MBC, thicker bladder wall, and higher incidence of vesicoureteral reflux. Patients underwent AE reported a good outcome. Most of patients received conservative treatment had a fair result. Conclusions KC patients who already developed a contracted bladder with extremely small bladder capacity (<300ml) with irreversible urinary tract change, partial cystectomy, and AE seems necessary for early restoration of a normal lower urinary tract function. The treatment outcome of AE is better than patients with conservative treatment. (C)2016 Wiley Periodicals, Inc.

Johnson MD, Stone B, Thibodeau BJ, Baschnagel AM, Galoforo S, Fortier LE, Ketelsen B, Ahmed S, Kelley Z, Hana A, Wilson TG, **Robertson JM, Jury RP** and **Wilson GD** (2017). "The significance of TRK receptors in pancreatic cancer." Tumour biology: The Journal of the International Society for Oncodevelopmental Biology and Medicine 39(2): 101042831769225.

[Request Form](#)

Department of Radiation Oncology

Department of Surgery

Johnson MD, Sura K, Mangona VS, Glick A, Wallace M, Ye H and **Grills IS** (2017). "Matched-pair analysis of high dose versus standard dose definitive chemoradiation for locally advanced non-small-cell lung cancer." Clinical Lung Cancer 18(2): 149-155.

[Full-Text](#)

Department of Radiation Oncology

Johnston WK, Linsell S, Miller D and Ghani KR (2017). "Survey of abdominal access and associated morbidity for robot-assisted radical prostatectomy: Does Palmer's point warrant further awareness and study?" Journal of Endourology 31(3): 283-288.

[Request Form](#)

Department of Surgery

Introduction: Laparoscopic access for robot-assisted radical prostatectomy (RARP) is often initiated in the periumbilical location. Palmer's point, located in the left upper quadrant, has been reported as an alternative access site for pelvic laparoscopy to reduce morbidity, but not widely reported among urologists. To better understand surgeons' preferences for access and its associated morbidity during RARP, we surveyed surgeons from two urologic organizations. Methods: An anonymous online questionnaire (SurveyMonkey) consisting of 17 questions that assessed training, experience, and preferences for RARP was emailed in December 2014 and collected until February 2015 to members performing RARP of the Endourology Society (ES) and the Michigan Urological Society Improvement Collaborative (MUSIC). Surgeons were also asked to share their personal experience with a vascular, death or life-threatening event (DOLTE), or bowel injury during RARP. Results: Questionnaires were answered by 111 surgeons in total (ES, n = 71 and MUSIC, n = 40) with an estimated total response rate of 5.5%. In total, 77% reported prior experience with the Veress needle method before exposure to RARP and 71% of respondents primarily use the Veress needle for RARP, with 73% reporting access primarily at the periumbilical location. A personal experience with a vascular or a bowel injury during Veress needle insertion was reported in 18% and 9% of surgeons, respectively; furthermore, 26% of respondents were personally aware of at least 1 DOLTE among colleagues (5% reported 3 or more). The majority (56%) of respondents were unaware of Palmer's point, while among the minority aware of Palmer's point, only 33% reported ever using this location. Conclusion: In this survey, surgeons most commonly access the abdomen at the periumbilical location with a Veress needle for RARP with the majority not aware or utilizing Palmer's point. Nearly one in five surgeons reported a personal experience with a vascular injury during access for RARP. Palmer's point, located away from major vasculature, may reduce the morbidity of access for RARP and warrants further awareness and study.

Kassier A, Makki I and **Haines D** (2017). "Paroxysmal or persistent: A tale of two flutters." Journal of the American College of Cardiology 69(11): 414.

[Full-Text](#)

Department of Internal Medicine

Kataruka A, Kong X, Haymart B, Kline-Rogers E, **Almany S**, Kozlowski J, Krol GD, Kaatz S, McNamara MW, Froehlich JB and Barnes GD (2017). "SAME-TT2R2 predicts quality of anticoagulation in patients with acute venous thromboembolism: The MAQI2 experience." Vascular Medicine. ePub Ahead of Print.

[Full-Text](#)

Department of Internal Medicine

A high SAME-TT2R2 score predicted poor warfarin control and adverse events among atrial fibrillation patients. However, the SAME-TT2R2 score has not been well validated in venous thromboembolism (VTE) patients. A cohort of 1943 warfarin-treated patients with acute VTE was analyzed to correlate the SAME-TT2R2 score with time in therapeutic range (TTR) and clinical adverse events. A TTR <60% was more frequent among patients with a high (>2) versus low (0-1) SAME-TT2R2 score (63.4% vs 52.3%, p<0.0001). A high SAME-TT2R2 score (>2) correlated with increased overall adverse events (7.9 vs 4.5 overall adverse events/100 patient years, p=0.002), driven primarily by increased recurrent VTE rates (4.2 vs 1.5 recurrent VTE/100 patient years, p=0.0003). The SAME-TT2R2 score had a modest predictive ability for international normalized ratio (INR) quality and adverse clinical events among warfarin-treated VTE patients. The utility of the SAME-TT2R2 score to guide clinical decision-making remains to be investigated.

Kaufman CS, Cross MJ, Goyal S, Barone J, Devisetty K, **Dekhne NS**, Edmonson D, Gass JS, Graham CL, Hong RL, Patton BJ, Phillips RF, Schonholz SM, Smith LA, Tafra L, Smith AB and Dilworth J (2017). "Use of an absorbable implant to mark the lumpectomy cavity: Initial report of 300 patients in a multi-center registry database." Cancer Research 77(Sup 4): P3.

[Request Form](#)

Department of Surgery

Kaur H, **Seitz J**, Muhleman M, **Cragg D** and **Qing F** (2017). "Aortic root abscess clearly shown on 111In-leukocyte scan but less obvious on transesophageal echocardiogram." Clinical Nuclear Medicine. ePub Ahead of Print.

[Full-Text](#)

Department of Diagnostic Radiology and Molecular Imaging

Department of Internal Medicine

ABSTRACT: A 79-year-old man with history of aortic stenosis, status post bioprosthetic aortic valve replacement, episodes of bacteremia, and endocarditis presented to hospital with fever. Clinical assessment led to suspicion of possible endocarditis. Initial interpretation of transesophageal echocardiogram was inconclusive without vegetation in mitral/aortic valve. An In-leukocyte scan demonstrated increased uptake in the area of aortic valve, suggestive of infection. Further review of the transesophageal echocardiogram showed signs of annular abscess. This case highlights that combination of echocardiography with white blood cell imaging increases the sensitivity to detect endocarditis/perivalvular abscess.

Kennedy AS, Ball D, Cohen SJ, Cohn M, Coldwell DM, Drooz A, Ehrenwald E, Kanani S, Moeslein FM, Nutting CW, Putnam SG, Rose SC, **Savin M**, Schirm S, Sharma NK and Wang E (2017). "Baseline hemoglobin and liver function predict tolerability and overall survival of patients receiving radioembolization for chemotherapy-refractory metastatic colorectal cancer." Journal of Gastrointestinal Oncology 8(1): 70-80.

[Full-Text](#)

Department of Diagnostic Radiology and Molecular Imaging

Background: Patients with liver metastatic colorectal cancer (mCRC) often benefit from receiving 90Y-microsphere radioembolization (RE) administered via the hepatic arteries. Prior to delivery of liverdirected radiation, standard laboratory tests may assist in improving outcome by identifying correctable preradiation abnormalities. Methods: A database containing retrospective review of consecutively treated patients of mCRC from July 2002 to December 2011 at 11 US institutions was used. Data collected included background characteristics, prior chemotherapy, surgery/ablation, radiotherapy, vascular procedures, 90Y treatment, subsequent adverse events and survival. Kaplan-Meier estimates compared the survival of patients across lines of chemotherapy. The following values were obtained within 10 days prior to each RE treatment: haemoglobin (HGB), albumin, alkaline phosphatase (Alk phosph), aspartate aminotransferase (AST), alanine transaminase (ALT), total bilirubin and creatinine. Common Terminology Criteria Adverse Events (CTCAEs) 3.0 grade was assigned to each parameter and analysed for impact on survival by line of chemotherapy. Consensus Guidelines were used to categorize the parameter grades as either within or outside guidelines for treatment. Results: A total of 606 patients (370 male; 236 female) were studied with a median follow-up was 8.5 mo. (IQR 4.3-15.6) after RE. Fewer than 11% of patients were treated outside recommended RE guidelines, with albumin being the most common, 10.5% grade 2 (< 3-2.0 g/dL) at time of RE. All seven parameters showed statistically significant decreased median survivals with any grade > 0 (P < 0.001) across all lines of prior chemotherapy. Compared to grade 0, grade 2 albumin decreased overall survival 67%; for grade 2 total bilirubin a 63% drop occurred, and grade 1 HGB resulted in 66% lower median survival. Conclusions: Review of pre-RE laboratory parameters may aid in improving median survivals if correctable grade > 0 values are addressed prior to radiation delivery. HGB < 10 g/dL is a well-known negative factor in radiation response and is easily corrected. Improving other parameters is more challenging. These efforts are important in optimizing treatment response to liver radiotherapy.

Khalili H, Gentry RE, **Stevens MA**, **Almany SL**, Banerjee S, **Haines DE** and **Hanzel GS** (2017). "Rapid and affordable 3-dimensional prototyping for left atrial appendage closure planning." Circulation: Cardiovascular Interventions 10(2): 1-2.

[Full-Text](#)

Department of Internal Medicine

Khourdaji IS, **Jafri SM**, **Faraj K**, **Raofi V** and Bernacki K (2017). "Melanotic Xp11 translocation renal cancer managed with radical nephrectomy and IVC tumor thrombectomy." [Urology Case Reports](#) 10(Jan): 42-44.

[Full-Text](#)

Department of Urology

OUWB Medical Student Author

Department of Surgery

Killing KA, Gupta P, **Gilleran JP**, **Bartley J**, Ehlert M, **Boura JA** and **Peters KM** (2017). "The impact of baseline functional bladder capacity on short-term neuromodulation outcomes." [Urology](#) 102(Apr): 68-72. ePub Ahead of Print.

[Full-Text](#)

Department of Urology

Department of Biomedical Sciences (BHS)

Kowalenko T, Heller BN, Strauss RW, Counselman FL, Mallory MNS, Joldersma KB, Coombs AB, Harvey AL and Reisdorff EJ (2017). "Initial validity analysis of the American Board of Emergency Medicine enhanced oral examination." [Academic Emergency Medicine](#) 24(1): 125-129.

[Full-Text](#)

Department of Emergency Medicine

Krauss DJ, Ye H, Martinez AA, Mitchell B, Sebastian E, Limbacher A and **Gustafson GS** (2017). "Favorable preliminary outcomes for men with low- and intermediate-risk prostate cancer treated with 19-Gy single-fraction high-dose-rate brachytherapy." [International Journal of Radiation Oncology Biology Physics](#) 97(1): 98-106.

[Full-Text](#)

Department of Radiation Oncology

Purpose To report the toxicity and preliminary clinical outcomes of a prospective trial evaluating 19-Gy, single-fraction high-dose-rate (HDR) brachytherapy for men with low- and intermediate-risk prostate cancer. Methods and Materials A total of 63 patients were treated according to an institutional review board-approved prospective study of single-fraction HDR brachytherapy. Eligible patients had tumor stage \leq T2a, prostate-specific antigen level \leq 15 ng/mL, and Gleason score \leq 7. Patients with a prostate gland volume $>$ 50 cm³ and baseline American Urologic Association symptom score $>$ 12 were ineligible. Patients underwent transrectal ultrasound-guided transperineal implantation of the prostate, followed by single-fraction HDR brachytherapy. Treatment was delivered using ¹⁹²Ir to a dose of 19 Gy prescribed to the prostate, with no additional margin applied. Results Of the 63 patients, 58 had data available for analysis. Five patients had withdrawn consent during the follow-up period. The median follow-up period was 2.9 years (range 0.3-5.2). The median age was 61.4 years. The median gland volume at treatment was 34.8 cm³. Of the 58 patients, 91% had T1 disease, 71% had Gleason score \leq 6 (29% with Gleason score 7), and the median pretreatment prostate-specific antigen level was 5.1 ng/mL. The acute and chronic grade 2 genitourinary toxicity incidence was 12.1% and 10.3%, respectively. No grade 3 urinary toxicity occurred. No patients experienced acute rectal toxicity grade \geq 2, and 2 experienced grade \geq 2 chronic gastrointestinal toxicity. Three patients experienced biochemical failure, yielding a 3-year cumulative incidence estimate of 6.8%. Conclusions Single-fraction HDR brachytherapy is well-tolerated, with favorable preliminary biochemical and clinical disease control rates.

Kuo S, **Boura J** and **Chinnaiyan K** (2017). "Are there sex differences in management of coronary artery disease after coronary CT angiography?" [Journal of the American College of Cardiology](#) 69(11): 1511.

[Full-Text](#)

Department of Biomedical Sciences (BHS)

Department of Internal Medicine

Laban MM (2017). "An intercostal muscular hernia as a consequence of intercostal nerve root compromise after trauma to the thoracic spine." [American Journal of Physical Medicine and Rehabilitation](#) 96(4): e68-e69.

[Full-Text](#)

Department of Physical Medicine and Rehabilitation

LaBan MM and **Weir SK** (2017). "Regarding Özcakar L, Önat SS, Gürcay E, Kara M: Are blind injections ethical or historical? Think twice with ultrasound. Am J Phys Med Rehabil 2016;95:158-60." [American Journal of Physical Medicine and Rehabilitation](#) 96(3): e52.

[Full-Text](#)

Department of Physical Medicine and Rehabilitation

Lakshmanadoss U, **Wong WS**, **Kutinsky I**, Khalid MR, **Williamson B** and **Haines DE** (2017). "Figure-of-eight suture for venous hemostasis in fully anticoagulated patients after atrial fibrillation catheter ablation." [Indian Pacing and Electrophysiology Journal](#). ePub Ahead of Print.

[Request Form](#)

Department of Internal Medicine

Introduction: Limited data exists for types of venous closure and its associated complications in patients after atrial fibrillation (AF) catheter ablation. We evaluated the subcutaneous figure-of-eight closure (FO8) for achieving venous hemostasis after AF catheter ablation compared to manual pressure. Methods: 209 consecutive patients that underwent AF catheter ablation by two operators were included. All patients received continuous therapeutic warfarin or interrupted novel oral anticoagulants (NOAC) and heparin (ACT300-400 s) without reversal. Patients were divided into two groups: 1) sheaths were left in place and pulled once ACT <180 s, with hemostasis being achieved with manual pressure (MP); and 2) a subcutaneous FO8 suture closed the venous access site immediately after the ablation on each groin site and sheaths were removed immediately after the ablation despite full anticoagulation with heparin and warfarin or interrupted NOAC. Sutures were removed after four hours, and the patients laid flat for an additional two hours. Results: The MP group (n = 105) was similar to the FO8 group (n = 104). Time in bed was 573 ± 80 min for MP group vs. 366 ± 35 min for FO8 group (p < 0.0001). Eleven hematomas were seen in the MP group compared to four in the FO8 group (P = 0.04). Conclusions: In fully anticoagulated patients undergoing AF catheter ablation, excellent hemostasis was achieved with figure-of-eight sutures, with no major vascular complications, a lower hematoma rate, and a significantly shorter flat-time-in-bed compared to manual pressure.

Langabeer SE, Ogunleye F, **Huang J**, **Ibrahim M**, Allen E, Brennan N, Zhou Y, **Huben M** and **Jaiyesimi I** (2017). "In Response to "BCR-ABL Testing by Polymerase Chain Reaction in Patients With Neutrophilia: The William Beaumont Hospital Experience and the Case for Rational Laboratory Test Requests"...Ogunleye F, Ibrahim M, Allen E, et al: BCR-ABL testing by polymerase chain reaction in patients with neutrophilia: The William Beaumont Hospital experience and the case for rational laboratory test requests. J Oncol Pract 12:e1001-e1005, 2016." [Journal of Oncology Practice](#) 13(4): 283-287.

[Full-Text](#)

Department of Pathology

Department of Internal Medicine

Lau W, **Shannon F**, **Hanzel GS**, **Sakwa M**, **Abbas AE**, **Safian R**, Hanson I, **Almany S** and Vivacqua A (2017). "Outcome-based cost analysis of transfemoral transcatheter aortic valve replacement using fascia iliaca compartment block and minimalist conscious sedation approach versus general anesthesia." [Journal of the American College of Cardiology](#) 69(11): 1330.

[Full-Text](#)

Department of Anesthesiology

Department of Surgery

Department of Internal Medicine

Lauter CB (2017). "Adult immunizations and the corner drugstore." *Infectious Diseases in Clinical Practice* 25(1): 3-4.

[Full-Text](#)

Department of Internal Medicine

Lehman NL, Hattab EM, Mobley BC, Usubaliev A, Schniederjan MJ, McLendon RE, Paulus W, Rushing EJ, Georgescu MM, Couce M, **Dulai MS**, Cohen ML, Pierson CR, Raisanen JM, Martin SE, Lehman TD, Lipp ES, Bonnin JM, Al-Abbadi MA, Kenworthy K, Zhao K, Mohamed N, Zhang GJ and Zhao WQ (2017). "Morphological and molecular features of astroblastoma, including BRAF(V600E) mutations, suggest an ontological relationship to other cortical-based gliomas of children and young adults." *Neuro-Oncology* 19(1): 31-42.

[Full-Text](#)

Department of Pathology

Background. Astroblastomas (ABs) are rare glial tumors showing overlapping features with astrocytomas, ependymomas, and sometimes other glial neoplasms, and may be challenging to diagnose. Methods. We examined clinical, histopathological, and molecular features in 28 archival formalin-fixed, paraffin-embedded AB cases and performed survival analyses using Cox proportional hazards and Kaplan-Meier methods. Results. Unlike ependymomas and angiocentric gliomas, ABs demonstrate abundant distinctive astroblastic pseudorosettes and are usually Olig2 immunopositive. They also frequently exhibit rhabdoid cells, multinucleated cells, and eosinophilic granular material. They retain immunoreactivity to alpha thalassemia/mental retardation syndrome X-linked, are immunonegative to isocitrate dehydrogenase-1 R132H mutation, and only occasionally show MGMT promoter hypermethylation differentiating them from many diffuse gliomas. Like pleomorphic xanthoastrocytoma, ganglioglioma, supratentorial pilocytic astrocytoma, and other predominantly cortical-based glial tumors, ABs often harbor the BRAF(V600E) mutation, present in 38% of cases tested (n = 21), further distinguishing those tumors from ependymomas and angiocentric gliomas. Factors correlating with longer patient survival included age less than 30 years, female gender, absent BRAF(V600E), and mitotic index less than 5 mitoses/10 high-power fields; however, only the latter was significant by Cox and Kaplan-Meier analyses (n = 24; P = .024 and .012, respectively). This mitotic cutoff is therefore currently the best criterion to stratify tumors into low-grade ABs and higher-grade anaplastic ABs. Conclusions. In addition to their own characteristic histological features, ABs share some molecular and histological findings with other, possibly ontologically related, cortical-based gliomas of mostly children and young adults. Importantly, the presence of BRAF(V600E) mutations in a subset of ABs suggests potential clinical utility of targeted anti-BRAF therapy.

Levasseur K and **Turner-Lawrence D** (2017). "Difficulty breathing with a rash: A pediatric simulation case for residents and fellows (Peer Reviewed)." MedEdPortal Publication No. 10556

[Full-Text](#)

Department of Emergency Medicine

Introduction: The purpose of the case is to teach health care professionals to recognize Henoch-Schönlein purpura (HSP), including rare and serious complications. The case includes a review of epidemiology, classification, clinical manifestations, and treatment of HSP. Methods: Utilizing an adolescent simulation mannequin, we present the case of an 11-year-old female who presents to a pediatric emergency department with HSP and respiratory symptoms requiring intubation. This case reinforces the appearance of the characteristic rash and helps learners develop an algorithm for HSP management that includes the identification and management of abdominal pain associated with HSP, as well as the rare and serious complication of pulmonary vasculitis. We focus learners on managing severe respiratory distress in the HSP patient. Learners are assessed using standardized forms, and the learner outcome measurements include the recognition of HSP and successful management of abdominal pain and respiratory failure in this unique setting. Results: This module has been used with pediatric residents, emergency medicine residents, pediatric emergency medicine fellows, and pediatric emergency medicine nurse practitioners. Approximately 30 learners have completed this module during seven separate sessions. All learners felt the case provided the opportunity to identify HSP as well as to manage a serious and rare complication of the disease. Discussion: Overall, we have had positive feedback from the learners about this case, and it provides them the opportunity to see more rare complications during their training period. Learners leave the session with

enhanced knowledge of HSP, as well as a review of respiratory failure and intubation.

Li M, Castillo SJ, Castillo R, Castillo E, **Guerrero T**, Xiao L and Zheng X (2017). "Automated identification and reduction of artifacts in cine four-Dimensional Computed Tomography (4DCT) images using respiratory motion model." International Journal of Computer Assisted Radiology and Surgery: 1-12. ePub Ahead of Print.

[Full-Text](#)

Department of Radiation Oncology

Linnstaedt SD, Walker MG, Riker KD, Nyland JE, Hu JM, Rossi C, **Swor RA**, Jones JS, Diatchenko L, Bortsov AV, Peak DA and McLean SA (2017). "Genetic variant rs3750625 in the 3' UTR of ADRA2A affects stress-dependent acute pain severity after trauma and alters a microRNA-34a regulatory site." Pain 158(2): 230-239.

[Full-Text](#)

Department of Emergency Medicine

alpha 2A adrenergic receptor (alpha 2A-AR) activation has been shown in animal models to play an important role in regulating the balance of acute pain inhibition vs facilitation after both physical and psychological stress. To our knowledge, the influence of genetic variants in the gene encoding alpha 2A-AR, ADRA2A, on acute pain outcomes in humans experiencing traumatic stress has not been assessed. In this study, we tested whether a genetic variant in the 3' UTR of ADRA2A, rs3750625, is associated with acute musculoskeletal pain (MSP) severity following motor vehicle collision (MVC, n = 948) and sexual assault (n = 84), and whether this influence was affected by stress severity. We evaluated rs3750625 because it is located in the seed binding region of miR-34a, a microRNA (miRNA) known to regulate pain and stress responses. In both cohorts, the minor allele at rs3750625 was associated with increased musculoskeletal pain in distressed individuals (stress rs3750625 P = 0.043 for MVC cohort and P = 0.007 for sexual assault cohort). We further found that (1) miR-34a binds the 3' UTR of ADRA2A, (2) the amount of repression is greater when the minor (risk) allele is present, (3) miR-34a in the IMR-32 adrenergic neuroblastoma cell line affects ADRA2A expression, (4) miR-34a and ADRA2A are expressed in tissues known to play a role in pain and stress, (5) following forced swim stress exposure, rat peripheral nerve tissue expression changes are consistent with miR-34a regulation of ADRA2A. Together, these results suggest that ADRA2A rs3750625 contributes to poststress musculoskeletal pain severity by modulating miR-34a regulation.

Loftus S and Tasker D (2017). "Community-based healthcare," In Tasker D, Higgs J and **Loftus S** (ed). Community-Based Healthcare: The Search for Mindful Dialogues. The Netherlands: Sense Publishers. pp: 1-6.

[Request Form](#)

Department of Biomedical Sciences (OU)

Loftus S and Tasker D (2017). "A final word," In Tasker D, Higgs J and **Loftus S** (ed). Community-Based Healthcare: The Search for Mindful Dialogues. The Netherlands: Sense Publishers. pp: 197-203.

[Request Form](#)

Department of Biomedical Sciences (OU)

Lombardo DJ, Jelsema T, Gambone A, **Weisman M**, Petersen-Fitts G, Whaley JD and Sabesan VJ (2017). "Extremity fractures associated with ATVs and dirt bikes: A 10-year national epidemiologic study." Musculoskeletal Surgery. ePub Ahead of Print.

[Full-Text](#)

Department of Family Medicine

BACKGROUND: Morbidity and mortality of all-terrain vehicles and dirt bikes have been studied, as well as the association of helmet use and head injury. HYPOTHESIS/PURPOSE: The purpose of this study is to compare and contrast the patterns of extremity fractures associated with ATVs and dirt bikes. We believe there will be unique and potentially preventable injury patterns associated with dirt bikes and three-wheeled ATVs due to the poor stability of these vehicles. STUDY DESIGN: Descriptive epidemiology study. METHODS: The National Electronic Injury Surveillance System (NEISS) was used to acquire data for extremity fractures related to ATV (three wheels, four wheels, and number of wheels undefined) and dirt bike use from 2007 to 2012.

Nationwide estimation of injury incidence was determined using NEISS weight calculations. RESULTS: The database yielded an estimate of 229,362 extremity fractures from 2007 to 2012. The incidence rates of extremity fractures associated with ATV and dirt bike use were 3.87 and 6.85 per 1000 participant-years. The largest proportion of all fractures occurred in the shoulder (27.2%), followed by the wrist and lower leg (13.8 and 12.4%, respectively). There were no differences in the distribution of the location of fractures among four-wheeled or unspecified ATVs. However, three-wheeled ATVs and dirt bikes had much larger proportion of lower leg, foot, and ankle fractures compared to the other vehicle types. CONCLUSIONS: While upper extremity fractures were the most commonly observed in this database, three-wheeled ATVs and dirt bikes showed increased proportions of lower extremity fractures. Several organizations have previously advocated for better regulation of the sale and use of these specific vehicles due to increased risks. These findings help illustrate some of the specific risks associated with these commonly used vehicles.

Luckenbaugh AN, Auffenberg GB, Hawken SR, Dhir A, Linsell S, **Kaul S** and Miller DC (2017). "Variation in guideline concordant active surveillance followup in diverse urology practices." *Journal of Urology* 197(3): 621-626.

[Full-Text](#)

Department of Urology

Maerz T, Fleischer M, Newton MD, Davidson A, Salisbury M, Altman P, **Kurdziel MD**, **Anderson K**, Bedi A and **Baker KC** (2017). "Acute mobilization and migration of bone marrow-derived stem cells following anterior cruciate ligament rupture." *Osteoarthritis and Cartilage*. ePub Ahead of Print.

[Full-Text](#)

Department of Surgery

Department of Orthopedic Surgery

Objective: Little is known regarding acute local and systemic processes following anterior cruciate ligament (ACL) rupture. No study has elucidated whether bone marrow-derived mesenchymal stem cells (MSCs) are mobilized into circulation and recruited to the injured joint. Methods: In Part 1, Lewis rats were randomized to noninvasive ACL rupture (Rupture) or non-injured (Control) (n = 6/group). After 72 h, whole blood MSC concentration was assessed using flow cytometry. Synovial fluid and serum were assayed for stromal cell-derived factor (SDF)-1 α and cartilage degeneration biomarkers, respectively. In Part 2, 12 additional rats were randomized and intravenously-injected with fluorescently-labeled allogenic MSCs. Cell tracking was performed using longitudinal, in vivo and ex vivo near-infrared (NIR) imaging and histology. Synovium SDF-1 α and interleukin (IL)-17A immunostaining was performed. Serum was assayed for SDF-1 α and 29 other cytokines. Results: In Part 1, there was a significant increase in MSC concentration and synovial fluid SDF-1 α in Rupture. No differences in cartilage biomarkers were observed. In Part 2, Rupture had significantly higher NIR signal at 24, 48, and 72 h, indicating active recruitment of MSCs to the injured joint. Ex vivo cell tracking demonstrated MSC localization in the synovium and myotendinous junction (MTJ) of the quadriceps. Injured synovia exhibited increased synovitis grade and higher degree of IL-17A and SDF-1 α immunostaining. Conclusion: ACL rupture induced peripheral blood mobilization of MSCs and migration of intravenously-injected allogenic MSCs to the injured joint, where they localized in the synovium and quadriceps MTJ.

Malone E, Bisoski L, **Smith M**, Aaron C and King A (2017). "An assessment of the diagnostic utility of pediatric methanol and ethylene glycol levels (Why is it always a gatorade® bottle?)." *Journal of Medical Toxicology* 13(1): 10.

[Request Form](#)

Department of Pathology

Background: Methanol and ethylene glycol ingestions in pediatric patients are commonly accidental and unintentional. These ingestions are typically a "sip" or "swallow." Although potential toxicity of methanol and ethylene glycol is well-known, clinical thresholds for diagnostic testing and treatment can vary widely among medical toxicologists. There is little supporting data in this age group to provide an accurate assessment of pre-test probability. Hypothesis: Innocent pediatric ingestions of methanol and ethylene glycol are usually benign, infrequently actionable, and rarely require antidotal treatment. Methods: This was a retrospective chart review of all pediatric patients age 12 or less in whom serum methanol or ethylene glycol levels were

obtained from a single reference laboratory during a 4-year time period. Serum levels were categorized as treatable or non-treatable based on serum level alone. Results: Throughout the reviewed time period, there were 32 serum methanol concentrations obtained from 29 unique patient encounters. There were 37 serum ethylene glycol concentrations obtained from 31 unique patient encounters. Three (3/32) methanol concentrations were positive and the highest was 9.8 mg/dL. All three positive values were from a single patient hospitalization. One (1/37) ethylene glycol concentration was positive at a level of 18.6 mg/dL. In total, none of the serum methanol or ethylene glycol concentrations was potentially toxic based on previously described treatment thresholds. Discussion: Innocent pediatric exposures to ethylene glycol and methanol are unlikely to be due to large ingestions with the intention of selfharm or intoxication. Potential treatment options can be highly resource intensive. Data to allow appropriate risk stratification of these patients is not currently available, but our experience suggests that these exposures are rarely actionable. Conclusions: This single center, retrospective chart review is consistent with the clinical observation that the majority of pediatric ethylene glycol and methanol exposures do not require treatment. Additional multi-center studies are required to confirm these findings and to develop standardized treatment guidelines for such exposures.

Marshall AL, Setty P, Hnatiuk M and Pieper DR (2017). "Repair of frontoethmoidal encephalocele in the Philippines: An account of 30 cases between 2008-2013." World Neurosurgery. ePub Ahead of Print.

[Full-Text](#)

OUIB Medical Student Author

BACKGROUND: Frontoethmoidal encephalocele is a congenital abnormality of the anterior skull base involving herniation of cranial contents through a midline skull defect. Patency of the foramen cecum, along with other multifactorial variables, contribute to the development of frontoethmoidal encephaloceles. Due to limited resources, financial constraints, and lack of surgical expertise, repair of frontoethmoidal encephaloceles are limited in developing countries. **METHODS:** Between 2008-2013 an interdisciplinary team composed of neurosurgeons, craniofacial surgeons, otolaryngologists, plastic surgeons and nursing personnel, conducted surgical mission trips to Davao City in Mindanao, Philippines. All patients underwent a combined extracranial/intracranial surgical approach, performed in tandem by a neurosurgeon and a craniofacial surgeon, to detach and remove the encephalocele. This was followed by reconstruction of the craniofacial defects. **RESULTS:** A total of 30 cases of frontoethmoidal encephalocele were repaired between 2008-2013 (20 male: 10 female). The average age at operation was 8.7 years, with seven patients over the age of 17 years. Of the three sub-types, the following breakdown was observed in patients: 18 nasoethmoidal; 9 nasofrontal; and 3 naso-orbital. Several patients demonstrated concurrent including enlarged ventricles, arachnoid cysts (both unilateral and bilateral), gliotic changes, as well as orbit and bulbus oculi (globe) deformities. There were no operative-associated mortalities or neurological deficits, infections or hydrocephalus on follow up during subsequent trips. **CONCLUSIONS:** Despite the limitations of performing advanced surgery in a developing country, the combined interdisciplinary surgical approach has offered effective treatment to improve physical appearance and psychological well-being in afflicted patients.

Marty FM, Vidal-Puigserver J, **Clark C**, Gupta SK, Merino E, Garot D, Chapman MJ, Jacobs F, Rodriguez-Noriega E, Husa P, Shortino D, Watson HA, Yates PJ and Peppercorn AF (2017). "Intravenous zanamivir or oral oseltamivir for hospitalised patients with influenza: An international, randomised, double-blind, double-dummy, phase 3 trial." The Lancet Respiratory Medicine 5(2): 135-146.

[Full-Text](#)

Department of Emergency Medicine

McLaughlin PW, Liss AL, Nguyen PL, Assimos DG, D'Amico AV, Gottschalk AR, **Gustafson GS**, Keole SR, Liauw SL, Lloyd S, Movsas B, Prestidge BR, Showalter TN, Taira AV, Vapiwala N and Davis BJ (2017). "ACR Appropriateness Criteria® locally advanced, high-risk prostate cancer." American Journal of Clinical Oncology: Cancer Clinical Trials 40(1): 1-10.

[Full-Text](#)

Department of Radiation Oncology

Mehta NS, Yannuzzi NA, Young R, McClellan AJ, Read SP and Berrocal AM (2017). "Retinal detachment in a combined case of Stickler Syndrome and X-linked retinoschisis." Ophthalmic Surgery Lasers and Imaging Retina 48(1): 83-86.

[Request Form](#)

OUWB Medical Student Author

A 12-year-old boy presented with a total rhegmatogenous retinal detachment and a giant retinal tear in the right eye. Clinical examination, optical coherence tomography, and fundus images showed an optically empty vitreous, lattice degeneration, and retinoschisis of the macula. Genetic testing revealed mutations in the COL2A1 and RS1 genes, confirming a dual diagnosis of Stickler syndrome and X-linked retinoschisis, respectively. This represents the first published account of a patient with both Stickler syndrome and X-linked retinoschisis.

Menoch M, Simon HK, Hirsh D, Shim Y, Baxter AL, Clifton M, Kim D and Sturm JJ (2017). "Imaging for suspected appendicitis: variation between academic and private practice models." Pediatric Emergency Care 33(3): 147-151.

[Full-Text](#)

Department of Emergency Medicine

Misa M and Yingting Z (2017). "Culturally competent library services and related factors among health sciences librarians: An exploratory study." Journal of the Medical Library Association 105(2): 132-139.

[Full-Text](#)

Medical Library

Mont L, Pelliccia A, Sharma S, Biffi A, Borjesson M, Brugada Terradellas J, Carré F, Guasch E, Heidbuchel H, La Gerche A, Lampert R, McKenna W, Papadakis M, Priori SG, Scanavacca M, Thompson P, Sticherling C, Viskin S, Wilson M, Corrado D, Lip GYH, Gorenek B, Blomström Lundqvist C, Merkely B, Hindricks G, Hernández-Madrid A, Lane D, Boriani G, Narasimhan C, Marquez MF, **Haines D**, Mackall J, Manuel Marques-Vidal P, Corra U, Halle M, Tiberi M, Niebauer J and Piepoli M (2017). "Pre-participation cardiovascular evaluation for athletic participants to prevent sudden death: Position paper from the EHRA and the EACPR, branches of the ESC. Endorsed by APHRS, HRS, and SOLAECE." European Journal of Preventive Cardiology 24(1): 41-69.

[Full-Text](#)

Department of Internal Medicine

Mont L, Pelliccia A, Sharma S, Biffi A, Borjesson M, Terradellas JB, Carre F, Guasch E, Heidbuchel H, La Gerche A, Lampert R, McKenna W, Papadakis M, Priori SG, Scanavacca M, Thompson P, Sticherling C, Viskin S, Wilson M, Corrado D, Gregory LYH, Gorenek B, Lundqvist CB, Merkely B, Hindricks G, Hernandez-Madrid A, Lane D, Boriani G, Narasimhan C, Marquez MF, **Haines D**, Mackall J, Marques-Vidal PM, Corra U, Halle M, Tiberi M, Niebauer J and Piepoli M (2017). "Pre-participation cardiovascular evaluation for athletic participants to prevent sudden death: Position paper from the EHRA and the EACPR, branches of the ESC. Endorsed by APHRS, HRS, and SOLAECE." Europace: European Pacing, Arrhythmias, and Cardiac Electrophysiology 19(1): 139-163.

[Full-Text](#)

Department of Internal Medicine

Motwani M, Dey D, Berman DS, Germano G, Achenbach S, Al-Mallah MH, Andreini D, Budoff MJ, Cademartiri F, Callister TQ, Chang HJ, **Chinnaiyan K**, Chow BJW, Cury RC, Delago A, Gomez M, Gransar H, Hadamitzky M, Hausleiter J, Hindoyan N, Feuchtner G, Kaufmann PA, Kim YJ, Leipsic J, Lin FY, Maffei E, Marques H, Pontone G, **Raff G**, Rubinshtein R, Shaw LJ, Stehli J, Villines TC, Dunning A, Min JK and Slomka PJ (2017). "Machine learning for prediction of all-cause mortality in patients with suspected coronary artery disease: A 5-year multicentre prospective registry analysis." European Heart Journal 38(7): 500-507.

[Full-Text](#)

Department of Internal Medicine

Mulpuri K, Schaeffer EK, Graham HK, Kocher MS, Sanders J and **Zaltz I** (2017). "Evidence-based recommendations for pediatric orthopaedic practice." Journal of Pediatric Orthopedics. ePub Ahead of Print.

[Full-Text](#)

Department of Orthopedic Surgery

BACKGROUND: Evidence-based medicine has become the cornerstone to guide clinical practice decision-making. Evidence-based medicine integrates the strongest available evidence with clinical expertise to make decisions about clinical care. The quality of the evidence depends upon the soundness of the study methodology to allow for meaningful interpretation of the clinical results. The purpose of this review is to analyze the methodological design and clinical findings of published pediatric orthopaedic studies to determine their ability to change or influence clinical practice. **METHODS:** This is the first in a series of evidence-based reviews in pediatric orthopaedics. The pediatric orthopaedic literature was reviewed for randomized controlled trials (RCTs) published in 2013 to 2014. Two RCTs were selected from the Journal of Bone and Joint Surgery for in depth methodological review and analysis. Methodological reviews were performed by 2 orthopaedic surgeons with advanced research degrees. Following this, 2 clinical experts reviewed the articles to rate the clinical impact or value of each study. Methodological and clinical reviews were compiled, and a final recommendation on impact to change clinical practice was made based on both review components at the consensus of the panel. **RESULTS:** The first study reviewed investigated the impact of physical therapy on function following supracondylar humeral fractures in children. The reviewers deemed the superiority study to of sound design, and conclusions appropriate for the methodology used and clinical findings. The results do not compel a recommendation to change clinical practice. The second study investigated the impact of Botulinum Toxin A with casting for the treatment of idiopathic toe-walking in children. Although of relatively sound design, the sample size was too small to appropriately perform some statistical comparisons. No recommendation to change clinical practice could be made. **CONCLUSION:** Both RCTs reviewed were superiority studies with a negative result. No recommendation to change clinical practice could be made. **SIGNIFICANCE:** Interpretation of superiority studies with nonsignificant findings must be done with caution. The findings of both of these RCTs highlight the need for more noninferiority trials in the pediatric orthopaedic literature in order to appropriately demonstrate no difference between 2 treatment options.

Nagasaka M, Zaki M, **Issa M**, Kim H, Abrams J and Sukari A (2017). "Definitive chemoradiotherapy with carboplatin for squamous cell carcinoma of the head and neck." Laryngoscope. ePub Ahead of Print.

[Full-Text](#)

Department of Internal Medicine

Objective: Definitive concurrent chemoradiotherapy (CRT) is considered the standard of care for organ preservation and is the only potentially curative therapy for surgically unresectable patients with stage III to IVb locally advanced squamous cell carcinoma of the head and neck. In patients with high risks for adverse events utilizing cisplatin, carboplatin has been empirically substituted. The objective of this study was to estimate the locoregional control rate, progression-free survival, overall survival, and adverse events in locally advanced squamous cell carcinoma of the head and neck patients treated with CRT utilizing carboplatin. **Study Design:** A retrospective single-arm analysis. **Methods:** Data on consecutive patients who fit the eligibility criteria were collected. Eligible patients were treated with 70 Gy of radiation therapy and at least two cycles of carboplatin (area of curve [AUC] of 5 between January 2007 to December 2013). **Results:** Fifty-four patients were identified. Overall locoregional control rate was 50% (95% confidence interval [CI]

37%-63%). Median progression-free and overall survival were 21 (CI 11-33) and 40 (CI 33-NA) months, respectively. One-, 3-, and 5-year overall survival were 81% (CI 67%-89%), 59% (CI 41%-73%), and 42% (CI 22%-61%), respectively. Stage III/IVa patients (n = 45) had a median survival of 62 (CI 37-NA months) and 3 years of 71% (CI 53%-84%), whereas stage IVb (n = 9) had a median survival of 31 (CI 4-NA) months and none survived to 3 years. Conclusion: Definitive CRT with carboplatin for locally advanced squamous cell carcinoma of the head and neck was well tolerated and demonstrated comparable results to CRT with cisplatin.

Nagle EF, Sanders ME and **Franklin BA** (2017). "Aquatic high intensity interval training for cardiometabolic health: benefits and training design." American Journal of Lifestyle Medicine 11(1): 64-76.

[Full-Text](#)

Department of Internal Medicine

Naoum C, Berman DS, Ahmadi A, Blanke P, Gransar H, Narula J, Shaw LJ, Kritharides L, Achenbach S, Al-Mallah MH, Andreini D, Budoff MJ, Cademartiri F, Callister TQ, Chang HJ, **Chinnaiyan K**, Chow B, Cury RC, DeLago A, Dunning A, Feuchtner G, Hadamitzky M, Hausleiter J, Kaufmann PA, Kim YJ, Maffei E, Marquez H, Pontone G, **Raff G**, Rubinshtein R, Villines TC, Min J and Leipsic J (2017). "Predictive value of age-and sex-specific nomograms of global plaque burden on coronary computed tomography angiography for major cardiac events." Circulation: Cardiovascular Imaging 10(3): e004896.

[Full-Text](#)

Department of Internal Medicine

Narsinh KH, Van Buskirk M, Kennedy AS, Suhail M, Alsaikhan N, Hoh CK, Thurston K, Minocha J, Ball DS, Cohen SJ, Cohn M, Coldwell DM, Drooz A, Ehrenwald E, Kanani S, Nutting CW, Moeslein FM, **Savin MA**, Schirm S, Putnam SG, Sharma NK, Wang EA and Rose SC (2017). "Hepatopulmonary shunting: A prognostic indicator of survival in patients with metastatic colorectal adenocarcinoma treated with 90Y radioembolization." Radiology 282(1): 281-288.

[Request Form](#)

Department of Diagnostic Radiology and Molecular Imaging

Purpose: To determine if high lung shunt fraction (LSF) is an independent prognostic indicator of poor survival in patients who undergo yttrium 90 radioembolization for unresectable liver-dominant metastatic colorectal cancer. Materials and Methods: Retrospective data were analyzed from 606 patients (62% men; mean age, 62 years) who underwent radioembolization to treat liver metastases from colorectal adenocarcinoma between July 2002 and December 2011 at 11 U.S. centers. Institutional review board exemptions were granted prior to the collection of data at each site. Overall survival was estimated by using Kaplan-Meier survival and univariate Cox proportional hazards models to examine the effect of LSF on survival and to compare this to other potential prognostic indicators. Multivariate analysis was also performed to determine whether LSF is an independent risk factor for poor survival. Results: LSF higher than 10% was predictive of significantly decreased survival (median, 6.9 months vs 10.0 months; hazard ratio, 1.60; $P < .001$) and demonstrated a mild but significant correlation to serum carcinoembryonic antigen levels and tumor-to-liver volume ratio (Pearson correlation coefficients, 0.105 and 0.113, respectively; $P < .05$). A progressive decrease in survival was observed as LSF increased from less than 5% to more than 20% ($P < .05$). LSF did not correlate with the presence of extrahepatic metastases or prior administration of bevacizumab. Conclusion: Increased LSF is an independent prognostic indicator of worse survival in patients undergoing radioembolization for liver-dominant metastatic colorectal adenocarcinoma. High LSF correlates poorly to other potential markers of tumor size, such as tumor-to-liver volume ratio or serum carcinoembryonic antigen level, and does not correlate to the presence of extrahepatic metastases.

Narsinh KH, van Buskirk M, **Savin M**, Kennedy AS and Rose SC (2017). "Lung shunting: An indicator of survival, but not necessarily a tool for selecting patients for radioembolization response." Radiology 282(2): 613.

[Request Form](#)

Department of Diagnostic Radiology and Molecular Imaging

Nguyen L, Gaines NP, Gurney-McMaster A, **Fischer MC**, Killinger KA, **Bartley JM**, **Gillera J**, **Boura JA** and **Sirls LT** (2017). "Interventions for stress urinary incontinence after advance male sling." Neurourology and Urodynamics 36(Sup 1): S44-S45.

[Full-Text](#)

Department of Urology

Department of Biomedical Sciences (BHS)

Introduction: The AdVance male sling, used for male postprostatectomy stress urinary incontinence (SUI), has a 62.5% cure rate at two years. Patients who fail may desire additional therapy. Our objective was to evaluate what types of therapies were pursued after sling failure. Methods: A retrospective review was conducted of AdVance male slings placed between January 2006 to May 2016 at a teaching institution and descriptive statistics were performed. Results: There were 44/175 (25%) men who had an AdVance sling placed began to use an external device or had additional surgery after AdVance sling. A total of 56 interventions were performed. Mean age was 68.3 yrs (range 33-87 yrs). In patients who underwent a second intervention for SUI after the AdVance sling, the primary/causative procedure was radical prostatectomy (RRP) in 23 men, radiation therapy (RT) in three, perineal prostatectomy (PP) in 1, RRP + RT in 14, PP + RT in 1, TURP + RT in 1, and 1 unknown. Of the 44 patients who sought additional treatment, many reported cure or improvement immediately after the sling, seven reported cure at their first follow-up visit (0-1 dry pads/day), 17 were improved (1-2 pads/day or >50% improvement), and 16 failed immediately (>2 pads/day or <50% improvement), four had incomplete data. Subsequently, 18 external devices were used, including penile clamp (10) and condom catheter (8). Thirty-eight surgical procedures were performed, including artificial urinary sphincter (AUS, 26), urethral bulking agent (8), second AdVance sling (4). AUS placement occurred at a mean of 836 days after the primary surgery (range, 84 to 2639 days). The second AdVance sling (placed, for example, after a patient reported the sling "popped" post-op) surgery occurred at a mean of 815 days (range, 108 to 1548 days) after the primary sling placement. Two patients who failed injection of a urethral bulking agent progressed to AUS. Conclusion: One in four men who have an AdVance male sling used an external collection device or pursued additional surgery. Radiation therapy was observed in half of the failures. Nearly half of these men progress to an artificial urinary sphincter.

Nguyen L, Gaines NP, Gurney-McMaster A, **Fischer MC**, Killinger KA, **Gillera J**, **Bartley JM**, **Boura JA** and **Sirls LT** (2017). "Are pad weight testing and surgical tunneling of sling associated with advance male sling outcomes?" Neurourology and Urodynamics 36(Sup 1): S44.

[Full-Text](#)

Department of Urology

Department of Biomedical Sciences (BHS)

Introduction: Pad weight testing may be used as a surrogate to quantitate the severity of sphincter damage and distinguish men who may benefit from a sling from men who may require an Artificial Urinary Sphincter (AUS). Furthermore, tunneling of the sling has been suggested to strengthen anchoring and therefore improve outcomes. We evaluate whether either preoperative pad weight testing or intraoperative tunneling are associated with Advance sling outcomes. Methods: A retrospective review was conducted of AdVance male slings placed between January 2006 to May 2016 at a teaching institution and descriptive statistics were performed. Cure was defined as 0-1 dry pad/day or reporting 100% dry. Improvement was defined as 1-2 pads/day and greater than 50% improvement in leakage. Failure was defined as >2 pads daily or less than 50% improvement in leakage. Results: There were 37/175 (21.1%) of men had preoperative 24-hour pad weight testing prior to AdVance male sling, with complete data available on 32 men. Mean pad weight was 206.8 mL (range 11-739 mL). Men who underwent pad weight testing had better outcomes than men who did not. 13/32 (40.6%) men were cured and 17/32 (53.1%) were improved with pad weight testing vs. 66/120 (55%) cured and 32/120 (26.7%) improved with no pad weight testing ($p = 0.012$). There were 147 men who had data available on intraoperative sling tunneling as well as self-reported success at first visit. 69/147 patients had no sling tunneling, and 78 had sling tunneling (35 to the groin, and 43 to the perineum). Tunneling was not associated with cure or improvement (table 1). Conclusion: Twenty-four hour pad weight testing as a surrogate for sphincter function is associated with improved outcomes; however, surgical tunneling of the sling was not associated with outcome.

Nguyen L, Gaines NP, McMaster-Gurney A, **Fischer MC**, Killinger KA, **Gillera JP**, **Bartley JM**, **Boura JA** and **Sirls LT** (2017). "Advance male sling: Are surgical volume and experience associated with outcome?" Neurourology and Urodynamics 36(Sup 1): S90.

[Full-Text](#)

Department of Urology

Department of Biomedical Sciences (BHS)

Introduction: The AdVance male sling has been used since 2006 to treat male post-prostatectomy stress urinary incontinence (SUI). We evaluated surgeon volume and experience on patient-reported outcomes. Methods: A retrospective review was conducted of AdVance male slings placed between 1/1/2006 to 5/16/2016 at a teaching institution and descriptive statistics were performed. Results: There were 175 men identified who had an AdVance sling placed. Mean follow-up was 3.7 years. There were 169 men who had previous prostate surgery at a mean age of 62.7 years: 151 underwent radical retropubic prostatectomy, ten perineal prostatectomy, one simple prostatectomy, and seven transurethral resection of the prostate. Three patients had primary radiation therapy (RT), 38 underwent adjuvant RT, and one had cryotherapy to the prostate. Common treatments prior to sling included pelvic floor physical therapy (36.6%), trial of anticholinergic (57.6%) or mirabegron (3.9%), and use of a clamp (3.9%) or collection device (0.8%). 17 patients underwent a total of 30 procedures prior to AdVance sling. Prior procedures include injection of urethral bulking agent (12), InVance sling (2), AdVance sling (1), and Artificial Urinary Sphincter (15). Mean daily pad use was 2.36 ± 1.8 . Operative data was available on 152 patients. AdVance slings were implanted by 12 surgeons; the five highest volume surgeons placed 132/152 and the seven lower volume surgeons 20/152. Cure was defined as 0 - 1 dry pad /day or report of 100% dry. Improvement was defined as 1-2 pads/ day and greater than 50% improvement in leakage. Failure was defined as >2 pads/day or less than 50% improvement in leakage. 128/152 (84.2%) of patients were cured / improved after surgery. Surgeon volume was not associated with cure / improved rates (high volume 112/132 (84.8%) vs. low volume 16/20 (80%), $p = 0.77$). Increasing surgeon experience based on year of surgery was not associated with patient outcome. First five years of surgical experience (2007-2011, 76/95 (80%) cure/improved) was not different than most recent five years of experience (2012-2016, 52/57 (91.2%) cure/improved, $p = 0.17$). Conclusion: AdVance male sling is effective with 84% of men reporting cure or improvement. Surgeon volume and experience with the surgical procedure was not associated with outcome.

Nguyen LN, Chowdhury ML and **Gillera JP** (2017). "Outcomes for intermittent neuromodulation as a treatment for overactive bladder." Current Bladder Dysfunction Reports 12(1): 66-73.

[Full-Text](#)

Department of Urology

Nicks BA, Shah MN, Adler DH, **Bastani A**, Baugh CW, Caterino JM, **Clark CL**, Diercks DB, Hollander JE, Malveau SE, Nishijima DK, Stiffler KA, Storrow AB, Wilber ST, Yagapen AN and Sun BC (2017). "Minimizing attrition for multisite emergency care research." Academic Emergency Medicine 24(4): 458-466.

[Full-Text](#)

Department of Emergency Medicine

Nudleman E and **Trese M** (2017). "Remote imaging and smart software for ROP screening," In Kychenthal A and Dorta P (ed). Retinopathy of Prematurity. New York, NY: Springer Science.

[Full-Text](#)

Department of Ophthalmology

Ogunyemi D, Friedman P, Jovanovski A, **Shah I**, Hage N and **Whitten A** (2017). "Maternal and neonatal outcomes by parity and second-stage labor duration." American Journal of Obstetrics and Gynecology 216(1): S508-S509.

[Full-Text](#)

Department of Obstetrics and Gynecology

OUIWB Medical Student Author

OBJECTIVE: To examine the relationship between second-stage labor duration and adverse maternal and neonatal outcomes, stratified by parity. **STUDY DESIGN:** This is a retrospective study of 10,487 term, singleton pregnancies in a single hospital system from 2013-2014. Secondstage labor duration was extracted from the electronic record and categorized by length into < 1 hour, 1-2 hours, 2-3 hours, 3-4 hours, and > 4 hours and stratified by parity. Maternal outcomes were cesarean delivery, severe perineal laceration, postpartum hemorrhage, chorioamnionitis, and length of stay > 5 days. A neonatal composite adverse outcome included 5-minute Apgar score < 4, umbilical arterial pH < 7.0, umbilical arterial base excess > -12, respiratory failure, seizure, and encephalopathy. Other neonatal outcomes were meconium staining, neonatal intensive care unit (NICU) admission, birth trauma, and sepsis. Independent associations were ascertained using multinomial logistic regression. **RESULTS:** Cesarean delivery was strongly and dose-dependently associated with labor duration in nulliparas (1.2-37.9%; ORs 12.1- 173.2) and multiparas (0.5-33.3%; ORs 10.6-159.0). For multiparas, labor duration was also consistently associated with severe perineal laceration (ORs 4.5-10.6). There were no significant associations between labor duration and the neonatal composite adverse outcome. There were inconsistent associations with NICU admission in both nulliparas (two groups, ORs 1.5-1.9) and multiparas (three groups, ORs 1.6-2.1). Meconium staining was increased in nulliparas (two groups, ORs 2.0-2.5) but decreased in multiparas (one group, OR 0.25). Among nulliparas, there were additional associations with maternal length of stay > 5 days (one group, OR 5.1), chorioamnionitis (one group, OR 2.6), and birth trauma (one group, OR 5.2). **CONCLUSION:** Despite increasing primary cesarean delivery rates with longer second-stage labor duration, approximately two-thirds of women had safe vaginal deliveries even after 4 hours. Regardless of parity, prolonged second stage of labor does not appear to significantly increase neonatal morbidity. (Table Presented).

Ogunyemi D, McGlynn S, Ronk A, Knudsen P, Andrews-Johnson T, Raczkiwicz A, Jovanovski A, **Kaur S**, **Dykowski M**, **Redman M** and **Bahado-Singh R** (2017). "Using a multifaceted quality improvement initiative to reverse the rising trend of cesarean births." *Journal of Maternal-Fetal and Neonatal Medicine*: 1-13. ePub Ahead of Print.

[Request Form](#)

Department of Obstetrics and Gynecology

Okeagu CN, **Baker EA**, Barreras NA, **Vaupel ZM**, **Fortin PT** and **Baker KC** (2017). "Review of mechanical, processing, and immunologic factors associated with outcomes of fresh osteochondral allograft transplantation of the talus." *Foot and Ankle International*. ePub Ahead of Print.

[Full-Text](#)

Department of Orthopedic Surgery

Osteochondral lesions of the talus (OLTs) are an increasingly implicated cause of ankle pain and instability. Several treatment methods exist with varying clinical outcomes. Due in part to successful osteochondral allografting (OCA) in other joints, such as the knee and shoulder, OCA has gained popularity as a treatment option, especially in the setting of large lesions. The clinical outcomes of talar OCA have been inconsistent relative to the positive results observed in other joints. Current literature regarding OCA failure focuses mainly on 3 factors: the effect of graft storage conditions on chondrocyte viability, graft/lesion size, and operative technique. Several preclinical studies have demonstrated the ability for bone and cartilage tissue to invoke an immune response, and a limited number of clinical studies have suggested that this response may have the potential to influence outcomes after transplantation. Further research is warranted to investigate the role of immunological mechanisms as an etiology of OCA failure. **LEVEL OF EVIDENCE:** Level V, expert opinion.

Orosey M, Desai T, **Amin M** and **Cappell MS** (2017). "Malignant gastrocolic fistula diagnosed by esophagogastroduodenoscopy and colonoscopy." *Minerva Gastroenterologica e Dietologica* 63(2): 165-167.

[Request Form](#)

Department of Pathology

Department of Internal Medicine

Pamplona MD, **Ysunza PA** and Morales S (2017). "Audiovisual materials are effective for enhancing the correction of articulation disorders in children with cleft palate." International Journal of Pediatric Otorhinolaryngology 93(Feb): 17-23.

[Full-Text](#)

Department of Physical Medicine and Rehabilitation

Introduction: Children with cleft palate frequently show speech disorders known as compensatory articulation. Compensatory articulation requires a prolonged period of speech intervention that should include reinforcement at home. However, frequently relatives do not know how to work with their children at home. Objective: To study whether the use of audiovisual materials especially designed for complementing speech pathology treatment in children with compensatory articulation can be effective for stimulating articulation practice at home and consequently enhancing speech normalization in children with cleft palate. Materials and methods: Eighty-two patients with compensatory articulation were studied. Patients were randomly divided into two groups. Both groups received speech pathology treatment aimed to correct articulation placement. In addition, patients from the active group received a set of audiovisual materials to be used at home. Parents were instructed about strategies and ideas about how to use the materials with their children. Severity of compensatory articulation was compared at the onset and at the end of the speech intervention. Results: After the speech therapy period, the group of patients using audiovisual materials at home demonstrated significantly greater improvement in articulation, as compared with the patients receiving speech pathology treatment on site without audiovisual supporting materials. Conclusion: The results of this study suggest that audiovisual materials especially designed for practicing adequate articulation placement at home can be effective for reinforcing and enhancing speech pathology treatment of patients with cleft palate and compensatory articulation. (C) 2016 Elsevier Ireland Ltd. All rights reserved.

Pardal J, **Sundram U**, Selim MA and Hoang MP (2017). "GATA3 and MYB expression in cutaneous adnexal neoplasms." American Journal of Dermatopathology 39(4): 279-286.

[Full-Text](#)

Department of Pathology

Knowledge of staining pattern of certain immunostains might be useful in the classification of cutaneous adnexal tumors that can have clinical importance. We studied GATA3 and MYB expression in archival materials of 220 adnexal tumors comprised of sebaceous carcinomas, follicular tumors, apocrine carcinoma, predominantly apocrine tumors, predominantly eccrine tumors, and others including adenoid cystic carcinomas. Nuclear GATA3 expression was seen in 70% (153/220) of cases, including sebaceous carcinoma (93%), apocrine carcinoma (93%), follicular neoplasms (100%), and predominantly apocrine neoplasms (69%), yet only 38% of predominantly eccrine neoplasms. Nuclear MYB expression was seen in 43% (81/188) of cases, including adenoid cystic carcinoma (90%), predominantly apocrine tumors (66%), follicular neoplasms (49%), apocrine carcinomas (14%), predominantly eccrine tumors (11%), and sebaceous carcinomas (4%). GATA3 and MYB expression were noted in 43% (9/21) and 24% (5/21) of cutaneous metastases, respectively. Expression of both GATA3 and MYB was noted in 33% (60/184) of primary adnexal tumors versus 19% (4/21) of cutaneous metastases. GATA3 preferentially labels tumors with follicular, sebaceous, and apocrine differentiation. MYB is potentially a helpful stain in the distinction of desmoplastic trichoepithelioma versus basal cell carcinoma. The coexpression of GATA3 and MYB might be helpful in the distinction of primary cutaneous adnexal carcinoma versus metastatic breast, salivary gland, or urothelial carcinoma. ©

Paul IM and **Maisels MJ** (2017). "Can I stop phototherapy for this baby?" Pediatrics 139(3): e20163832.

[Full-Text](#)

Department of Pediatrics

Peters KM, Cutie C and Radecki D (2017). "Safety, tolerability and preliminary efficacy of liris® 400 mg in women with ulcerative interstitial cystitis." Neurourology and Urodynamics 36(Sup 1): S103-S104.

[Full-Text](#)

Department of Urology

Introduction: Ulcerative interstitial cystitis (IC) is an inflammatory bladder condition with characteristic lesions

(Hunner's lesions) that are associated with bladder pain and voiding frequency. LiRIS is a passive, nonresorbable, intravesical system designed to provide a continuous, controlled release of lidocaine into the bladder over a two-week period. Methods: This two-center, open-label, Phase 1b study in women ≥ 18 years evaluated the safety, tolerability and preliminary efficacy of LiRIS 400mg over two 14-day treatment periods and up to 12-weeks follow-up (Day 112). Inclusion criteria included a pain Numeric Rating Scale (NRS) score of 3-9.5, ≥ 1 Hunner's lesion at screening, and ≥ 8 daily voids. LiRIS was inserted on Day 0 and removed on Day 14. A second LiRIS was inserted at Day 14 (if Hunner's lesions improved or were unchanged on Day 14) and removed on Day 28. Treatment-emergent adverse events (TEAEs), pain, voiding frequency, and O'Leary-Sant IC Symptom Index (ICSI)/IC Problem Index (ICPI) scores were recorded. Results: Ten patients were enrolled (mean age 57.2 years). Three patients were excluded from the analysis: one had only one LiRIS treatment, one expelled LiRIS before Day 28, and one did not complete follow-up. The per-protocol population included seven patients. By Days 14 and 28, respectively, 6/7 patients (86%) and 7/7 patients (100%) responded to treatment with a decreased Hunner's lesion affected area, lesion number, and/or lesion severity. Pain NRS scores (5.5 at baseline, BL), decreased significantly at all time points ($P < .05$), including 12 weeks following LiRIS removal; decreases from BL on Days 14, 28, and 112 were -2.97 ($P = .004$), -4.27 ($P = .003$), and -4.4 ($P = .029$), respectively. Mean daily voids (18.2 at BL) were reduced significantly from Day 7 through Day 56 ($P < .05$), except on Day 14 ($P = .055$). ICSI/ICPI scores were reduced from BL at Day 20 through at least Day 56 ($P < .05$). No patient discontinued due to TEAEs, which occurred in 6/10 patients (two procedure-related, two device-constituent-related, one dysuria, one pollakiuria). Conclusion: This small proof of concept study of LiRIS 400 mg in women with ulcerative IC and Hunner's lesions demonstrated a favorable safety profile and long lasting improvements in lesions, pain, voiding frequency, and ICSI/ICPI scores. Additional double-blind, placebo-controlled studies will be necessary to confirm the safety and effectiveness of LiRIS in larger numbers of patients.

Peters KM, Fan A, Killinger KA and Boura JA (2017). "Neuromodulation for chronic urogenital pain: A comparison of pudendal and sacral nerve stimulation." *Neurourology and Urodynamics* 36(Sup 1): S143.

[Full-Text](#)

Department of Urology

OUWB Medical Student Author

Department of Biomedical Sciences (BHS)

Introduction: Little evidence exists regarding the effect of chronic neuromodulation on urogenital pain. We evaluated outcomes between pudendal vs. sacral nerve neuromodulation. Methods: Adults in our prospective database with primary/ secondary diagnosis of pelvic pain (excluding interstitial cystitis) and quadripolar lead placed at the pudendal or sacral nerve were reviewed. History, pain scores (0-10; none to severe), Global Response Assessment (GRA), Interstitial Cystitis Symptom/Problem Index (ICSIPI) and Overactive Bladder symptom severity (OABq ss)/health related quality of life (HRQOL) collected at baseline, three and six months, and one and two years were analyzed with descriptive statistics and repeated measures over one year. Results: Of 87 that had a lead placed, 72 (83%) had generator implantation and 65 had complete baseline data. 37/65 had a pudendal (12/37 had failed sacral stimulation) and 28 had a sacral lead. Group characteristics were similar except for pudendal had lower body mass index (median 24.8 vs. 28.6; $p = 0.009$) and fewer with primary urinary urgency/frequency (8.1% vs. 39.3%; $p = 0.003$). Pudendal patients more commonly had a primary diagnosis of pelvic pain that approached but was not statistically significantly (62.2% vs. 38.5%; $p = 0.06$). Median follow up was 1.2 vs. 2.6 years in the pudendal and sacral groups respectively ($p = 0.0011$). Median pelvic pain scores were similar between pudendal and sacral groups at baseline and each follow up, and both improved significantly over one year ($p = 0.0003$ and $p < 0.0001$). The pudendal group had lower ICSIPI and OABq/ss scores at baseline ($p = 0.007$ and $p = 0.035$, respectively), but both groups improved over 1 year on the ICSIPI ($p < 0.0001$ for both groups), OABq/ss ($p = 0.005$ and $p = 0.0002$ respectively), and OABq HRQOL ($p = 0.027$ and $p < 0.0001$, respectively). Similar proportions in the pudendal and sacral groups had pain at each follow up except for at six months (17/19; 90% vs. 8/14; 57%; $p = 0.047$); for those with pain, similar proportions (between 33% and 50%) had moderate/marked improved in pain on the GRA at each time point. Conclusion: Both groups experienced modest but similar improvements in pelvic pain. Pudendal was effective in those who failed sacral

neuromodulation and was used preferentially in patients with a primary diagnosis of pain. Neuromodulation should be considered in the management of chronic pelvic pain.

Peters KM, Killinger KA, **Gilleran JP**, **Bartley J**, Wolfert C and **Boura JA** (2017). "Predictors of reoperation after sacral neuromodulation: A single institution evaluation of over 400 patients." Neurourology and Urodynamics 36(2): 354-359.

[Full-Text](#)

Department of Urology

Department of Biomedical Sciences (BHS)

Peters KM, Sirls E, Killinger KA and **Boura JA** (2017). "A review of over 100 patients undergoing percutaneous tibial nerve stimulation in an office setting: Real world experience." Neurourology and Urodynamics 36(Sup 1): S49-S50.

[Full-Text](#)

Department of Urology

Department of Biomedical Sciences (BHS)

Objectives: Clinical trials have demonstrated the effectiveness of percutaneous tibial nerve stimulation (PTNS) for overactive bladder symptoms, but little data exists regarding outcomes in a real world patient population/setting. We examined patients that had PTNS for overactive bladder symptoms in one large urology practice. Methods: All adult patients that had PTNS between 2012 and 2015 were retrospectively reviewed for demographics, history, symptoms, and treatments used before, concurrently, and after undergoing PTNS. Descriptive statistics were performed. Results: Of 113 patients (mean age 75 years), most were female (65.5%), married (78.1%), and retired/unemployed (81.4%). The most common indication for PTNS was nocturia (93%), with or without urinary urgency/frequency and urge incontinence (75.2%). Prior treatments included anticholinergics in 75.2% of patients (most had tried one to three different medications), mirabegron (41/112; 36.6%), behavioral modification (29.2%), and pelvic floor physical therapy (18.6%). Patients completed a mean of 10.5 ± 3 of 12 planned weekly PTNS treatments. At six and 12 weeks respectively, 101 (89.4%) completed at least six treatments and 71.3% (62/87) were improved, and 82 (75.6%) completed all 12 weekly treatments and 70.6% (60/85) had improved. The most common reason for failure to complete all 12 treatments was too little/no improvement (14 patients) and adverse events (two worsening symptoms, one lower extremity edema, one erythema at needle insertion site). 40/105 (38.1%) used concomitant treatments for their symptoms with the most common being anticholinergic/antimuscarinic therapy. 47/113 (40%) of patients went on to complete a median of three monthly maintenance treatments. Reasons for noncompliance with beginning/continuing maintenance included lack of efficacy (60/78; 77%), happy with current improvements (10/78; 13%), cost (4/78; 5%), and other (4/78; 5%). 72/113 patients had an office visit within the last year. New treatments after PTNS included onabotulinumtoxinA (16%), mirabegron (16%), new anticholinergic/antimuscarinic (8%), behavioral modification (6%), chronic neuromodulation (5%), pelvic floor physical therapy (5%), and other treatments (7%). Conclusion: Although most patients achieve symptom improvement after weekly PTNS, lack of adherence to maintenance therapy may limit long term feasibility of PTNS.

Prayer D, Malinge G, Brugger PC, Cassady C, De Catte L, De Keersmaecker B, Fernandes GL, Glanc P, **Gonçalves LF**, Gruber GM, Laifer-Narin S, Lee W, Millischer AE, Molho M, Neelavalli J, Platt L, Pugash D, Ramaekers P, Salomon LJ, Sanz L, Timor-Tritsch IE, Tutschek B, Twickler D, Weber M, Ximenes R and Raine-Fenning N (2017). "ISUOG practice guidelines: performance of fetal magnetic resonance imaging." Ultrasound in Obstetrics and Gynecology. ePub Ahead of Print.

[Full-Text](#)

Department of Obstetrics and Gynecology

Qu Z, **Micale MA** and **Zhang PL** (2017). "A web-based pathology reporting system enhances efficiency and promote standardization in routine practice." Laboratory Investigation 97(Sup 1): 516A-517A.

[Full-Text](#)

Department of Pathology

Background: Interrogation of a large number (>100,000) of pathology reports shows that a small number (<20%) of diseases accounts for the vast majority (>80%) of daily caseload. Thus pre-formulated reports for the small set of frequently encountered diseases can help pathologists effectively handle daily workload. Pathology reports are highly individualized with variable styles, semantics and formats, contributing to confusion, misunderstanding, medical errors, and difficulties in data-mining. However, standardization of routine pathology reports is believed to be an impossible task. Our decade-long attempts has uncovered three likely obstacles: 1) lack of specific guidelines for reports; 2) the need for report examples/ templates, and 3) lack of a convenient tool to facilitate the efforts. We present a reporting system that addresses these issues. Design: A set of guidelines for formulating reports is created based on cognitive science, linguistic principles, and clinicians' feedbacks. Commonly used report examples/templates for each organ/site are formulated following the guidelines and organized in a database. The reporting system is freely accessible online at: [http:// www.essentialpathology.info/DxWording/index.html](http://www.essentialpathology.info/DxWording/index.html) Results: Users can find appropriate report samples for a specific organ/site in the "Contents" list. Sample reports are organized under expandable headings of common diseases. Conclusions: With hundreds of sample reports and a convenient on-line tool, this system can markedly enhance users' reporting efficiency in daily service. The guidelines can help users formulate pathology reports with consistency as a key step toward standardization.

Radhakrishna U, Jhala D, Al-Ali FM, Ratnamala U, Maiti A, Veerappa AM, Mishra NK, Jemec GBE and **Bahado-Singh RO** (2017). "Epigenetic biomarker and key signaling pathways in Hidradenitis Suppurativa (Acne Inversa)." *Experimental Dermatology* 26(Sup 1): 5-6.

[Request Form](#)

Department of Obstetrics and Gynecology

Raff GL, Hoffmann U and Udelson JE (2017). "Trials of imaging use in the emergency department for acute chest pain." *JACC-Cardiovascular Imaging* 10(3): 338-349.

[Full-Text](#)

Department of Internal Medicine

Over 8 million patients seek emergency department care for acute chest pain annually in the United States alone, and <5% have an acute coronary syndrome. In the absence of overt electrocardiographic or biomarker evidence, expensive and time-consuming diagnostic strategies are frequently required. Beginning in 2000, radionuclide myocardial perfusion, stress echocardiography, cardiac magnetic resonance imaging, and coronary computed tomographic angiography have become increasingly common in evaluating these patients. This review paper focuses on randomized clinical trials that provide the evidence base for these diagnostic strategies. Novel imaging modalities combining high-sensitivity troponin with imaging or combined anatomic-physiological evaluation using fractional flow reserve by computed tomography are also discussed. (C) 2017 by the American College of Cardiology Foundation.

Randhawa S and Ruben J (2017). "Pictures & perspectives: Leukemic Optic Nerve Infiltration." *Ophthalmology* 124(3): 277.

[Full-Text](#)

Department of Ophthalmology

Randhawa S and Sharma M (2017). "A new macular dystrophy secondary to a novel mutation in the prominin 1 (PROM1) gene." *Retinal Cases & Brief Reports* 11(Sup 1): S62-s64.

[Full-Text](#)

Department of Ophthalmology

PURPOSE: To report a case of a new macular dystrophy caused by a novel mutation in the PROM1 gene. METHODS: History and clinical examination, fluorescein angiography, optical coherence tomography, autofluorescence, electrophysiology, and genetics. RESULTS: We report a case of a 51-year-old man with progressive central visual loss in both his eyes. On fundus examination and imaging, there were asymmetric atrophic macular lesions in both his eyes. Electrophysiology revealed a bilateral macular atrophy; genetic testing revealed a novel PROM1 mutation as the probable cause. CONCLUSION: A novel PROM1 mutation as

the cause of a new bilateral macular atrophy is revealed.

Rao P, Yonekawa Y, Thomas BJ and **Drenser KA** (2017). "Spectral versus time-domain OCT in detecting preoperative epiretinal membranes that accompany macular holes." European Journal of Ophthalmology 27(2): 185-189.

[Request Form](#)

Department of Ophthalmology

Raven ML, Ringeisen AL, Yonekawa Y, Stem MS, **Faia LJ** and Gottlieb JL (2017). "Multi-modal imaging and anatomic classification of the white dot syndromes." International Journal of Retina and Vitreous 3(Mar): 12.

[Full-Text](#)

Department of Ophthalmology

The white dot syndromes (WDS) are a diverse group of posterior uveitides that share similar clinical findings but are unique from one another. Multimodal imaging has allowed us to better understand the morphology, the activity and age of lesions, and whether there is CNV associated with these different ocular pathologies. The "white dot syndromes" and their uveitic masqueraders can now be anatomically categorized based on lesion localization. The categories include local uveitic syndromes with choroidal pathology, systemic uveitic syndromes with choroidal pathology, and multifocal choroiditis with outer retinal/choriocapillaris pathology with uveitis and without uveitis. Neoplastic and infectious etiologies are also discussed given their ability to masquerade as WDS.

Renard BM, **Boura J**, Ebner B and **Chinnaiyan K** (2017). "Coronary CT angiography in the emergency department provides an opportune window for initiation of evidence-based medical therapy." Journal of the American College of Cardiology 69(11): 1425.

[Full-Text](#)

Department of Biomedical Sciences (BHS)

Department of Internal Medicine

Renard BM, Hanson ID and **Goldstein JA** (2017). "Severe mitral regurgitation and biventricular heart failure successfully treated with biventricular percutaneous axial flow pumps as a bridge to mitral valve surgery." Catheterization and Cardiovascular Interventions 89(1): 159-162.

[Full-Text](#)

Department of Internal Medicine

Reygaert W (2017). "An update on the health benefits of green tea." Beverages 3(1): 6.

[Full-Text](#)

Department of Biomedical Sciences (OU)

Rivest R, Noiva R, Cameron T and Reed DA (2017). "Perspectives on curriculum management systems best practices (iCollaborative)." MedEdPortal Resource ID 4393

[Full-Text](#)

Department of Medical Education

Administration

For nearly two decades, schools have been developing systems for managing curriculum content and / or contracting with vendors for curriculum management. Schools invest time, finances, energy, committee time, and human resources populating these Curriculum Management Systems. This investment results in more informed curriculum administrators, committees, faculty, staff, and students using reports that inform curriculum decisions, continuous quality improvement, and benchmarking efforts; as well as the tracking of competencies, key terminology, and themes / special emphases. There are multiple methods for leveraging the power of a well-populated curriculum management system. This session will provide examples from three medical schools regarding best practices for collecting and entering data, using curriculum management system reports to inform curriculum committees, and conducting continuous quality

improvement using curriculum management systems.

Roquiz W and **Huang J** (2017). "Rapid diagnosis of aggressive mature B-NHI based on graphic presentation and statistic descriptions of FSC parameters by flow cytometry." Modern Pathology 30(Sup 2): 373A-374A.

[Full-Text](#)

Department of Pathology

Roquiz W and **Huang J** (2017). "Rapid diagnosis of aggressive mature B-NHI based on graphic presentation and statistic descriptions of FSC parameters by flow cytometry." Laboratory Investigation 97(Sup 1): 373A-374A.

[Full-Text](#)

Department of Pathology

Rothschild D, **Goldstein J, Abbas A, Kerner N**, Patel M and **Wong WS** (2017). "Pacemaker-induced tricuspid regurgitation is uncommon immediate post-implant." Journal of the American College of Cardiology 69(11): 513.

[Full-Text](#)

Department of Internal Medicine

Rubin AD (2017). "Unable to say hello from the other side." ENT-Ear Nose & Throat Journal 96(2): 50-51.

[Full-Text](#)

Department of Surgery

Sagner M, Binks M, Yapijakis C, Lavie CJ, Frank E, **Franklin BA**, Forman DE, Arena R, La Vecchia C and Puska P (2017). "Overcoming potential threats to scientific advancements: Conflict of interest, ulterior motives, false innuendos and harassment." Progress in Cardiovascular Diseases 59(5): 522-524.

[Full-Text](#)

Department of Internal Medicine

Sankar WN, Duncan ST, Baca GR, Beaulé PE, Millis MB, Kim YJ, Peters CL, Podeszwa DA, Schoenecker PL, Sierra RJ, Sink EL, Sucato DJ, Trousdale RT, **Zaltz I** and Clohisy JC (2017). "Descriptive epidemiology of acetabular dysplasia: The Academic Network of Conservational Hip Outcomes Research (ANCHOR) periacetabular osteotomy." Journal of the American Academy of Orthopaedic Surgeons 25(2): 150-159.

[Full-Text](#)

Department of Orthopedic Surgery

Schulman-Marcus J, Lin FY, Gransar H, Berman D, Callister T, DeLago A, Hadamitzky M, Hausleiter J, Al-Mallah M, Budoff M, Kaufmann P, Achenbach S, **Raff G, Chinnaiyan K**, Cademartiri F, Maffei E, Villines T, Kim YJ, Leipsic J, Feuchtner G, Rubinshtein R, Pontone G, Andreini D, Marques H, Chang HJ, Chow BJ, Cury RC, Dunning A, Shaw L and Min JK (2017). "Coronary revascularization vs. medical therapy following coronary-computed tomographic angiography in patients with low-, intermediate- and high-risk coronary artery disease: results from the CONFIRM long-term registry." European Heart Journal Cardiovascular Imaging. ePub Ahead of Print.

[Full-Text](#)

Department of Internal Medicine

Aims: To identify the effect of early revascularization on 5-year survival in patients with CAD diagnosed by coronary-computed tomographic angiography (CCTA). Methods and results: We examined 5544 stable patients with suspected CAD undergoing CCTA who were followed a median of 5.5 years in a large international registry. Patients were categorized as having low-, intermediate-, or high-risk CAD based on CCTA findings. Two treatment groups were defined: early revascularization within 90 days of CCTA (n = 1171) and medical therapy (n = 4373). To account for the non-randomized referral to revascularization, we developed a propensity score by logistic regression. This score was incorporated into Cox proportional hazard models to calculate the effect of revascularization on all-cause mortality. Death occurred in 363 (6.6%) patients and was more frequent in medical therapy. In multivariable models, when compared with medical therapy, the mortality benefit of revascularization varied significantly over time and by CAD risk (P

for interaction 0.04). In high-risk CAD, revascularization was significantly associated with lower mortality at 1 year (hazard ratio [HR] 0.22, 95% confidence interval [CI] 0.11-0.47) and 5 years (HR 0.31, 95% CI 0.18-0.54). For intermediate-risk CAD, revascularization was associated with reduced mortality at 1 year (HR 0.45, 95% CI 0.22-0.93) but not 5 years (HR 0.63, 95% CI 0.33-1.20). For low-risk CAD, there was no survival benefit at either time point. Conclusions: Early revascularization was associated with reduced 1-year mortality in intermediate- and high-risk CAD detected by CCTA, but this association only persisted for 5-year mortality in high-risk CAD.

Scola D, Bahoura L, Copelan A, Shirkhoda A and **Sokhandon F** (2017). "Getting the GIST: A pictorial review of the various patterns of presentation of gastrointestinal stromal tumors on imaging." Abdominal Radiology 42(5): 1350-1364.

[Full-Text](#)

Department of Diagnostic Radiology and Molecular Imaging

Gastrointestinal stromal tumors (GISTs), the most common mesenchymal tumors of the gastrointestinal tract, are a relatively recently described entity. Most exhibit a mutated tyrosine kinase receptor gene and in some capacity are treated by tyrosine kinase inhibitors. GISTs can occur across the age spectrum but are more common in patients older than 40 years. They exhibit a wide range of clinical presentations and imaging characteristics. All patterns of enhancement on contrast enhanced computed tomography (CECT) can be seen with GISTs, including hypoenhancing, isoenhancing, and hyperenhancing tumors. They can be large or small, endoluminal or exophytic. Clinical presentations include asymptomatic patients, nonspecific symptoms, obstruction, and bleeding. Bleeding can take the form of slow, intraluminal GI bleeding or massive intraperitoneal bleeding secondary to rupture and can be seen regardless of the enhancement pattern. Some can cavitate, ulcerate, rupture or cause fistulae. The radiologist's knowledge of the variety of combinations of presentations can narrow the differential diagnosis and ultimately lead to faster diagnosis and treatment.

Shen Y, Liu B and **Zhang PL** (2017). "GRP94, a chaperone protein, represents a new target for treating multiple myeloma." Laboratory Investigation 97(Sup 1): 377A.

[Full-Text](#)

Department of Pathology

Background: Our recent study demonstrate that inhibition of grp94, a key protein chaperone, causes significant reduction of multiple myeloma (MM) in vivo (in XBP transgenic mice) and in vitro, partially through suppression of Wnt- β -catenine pathway (Clin Cancer Res 2013,19(22): 6242-51). In human subjects, our flow cytometry study also shows higher expression of grp94 in CD138+ myeloma cells in multiple myeloma (MM) than that of monoclonal gammopathy with undetermined significance (MGUS), smoldering myeloma and polyclonal plasma cells (J Hematol Oncol (2015) 8:77). This study was to investigate the morphologic expression of grp94 in human myeloma cells by immunohistochemistry assay and evaluate a potential therapeutic target for future myeloma management. Design: Totally 48 bone marrow biopsies were divided into 5 groups (G), including G1, benign controls, G2, MGUS, G3, smoldering MM, G4, MM, and G5, recurrent MM. The cell blocks of all bone marrow biopsies were immunohistochemically stained for grp94 (monoclonal antibody at 1:200 dilution) using an autostainer. The staining intensity was graded from 0 to 3+ and the final combined score of grp94 expression was calculated by intensity score multiplying with percent of plasma cells. Results: Mean ages were older than 61 years old in the study sets. Multiple myeloma had significant higher combined grp94 score than all other groups (significance = $P < 0.05$ by ANOVA; * vs G1, # - vs G2, a - vs G3 and b - vs G4), while smoldering MM and recurrent MM also revealed higher expression of grp94 combined scores than control and MGUS groups (Table 1). The grp94 combined scores are highly associated with the levels of serum M proteins ($R = 0.76$, $P = 0.0001$). (Table presented) Conclusions: Taking together with our previous findings, our preliminary data demonstrate that grp94 is a new marker for diagnosing MM and solitary plasmacytoma, and could be a therapeutic target for treating smoldering MM with over 60% plasma cells, MM and recurrent MM.

Shen YL, Liu B and **Zhang PL** (2017). "GRP94, a chaperone protein, represents a new target for treating multiple myeloma." Modern Pathology 30(Sup 2): 377A.

[Full-Text](#)

Department of Pathology

Shields E, Ho A and **Wiater JM** (2017). "Management of the subscapularis tendon during total shoulder arthroplasty." Journal of Shoulder and Elbow Surgery 26(4): 723-731.

[Full-Text](#)

Department of Orthopedic Surgery

Use of total shoulder arthroplasty has significantly increased during the past decade. For anatomic total shoulder arthroplasty, controversy exists regarding the best technique for detachment and repair of the subscapularis tendon. Options include tendon tenotomy, peel, lesser tuberosity osteotomy, and even subscapularis-sparing techniques. Inadequate healing of the subscapularis tendon can lead to postoperative pain, weakness, and instability. This review discusses the subscapularis pathoanatomy, different techniques for releasing and repairing the tendon, and reports biomechanical and clinical outcomes for each technique after total shoulder arthroplasty.

Shneor D, **Folberg R**, Pe'er J, Honigman A and Frenkel S (2017). "Stable knockdown of CREB, HIF-1 and HIF-2 by replication-competent retroviruses abrogates the responses to hypoxia in hepatocellular carcinoma." Cancer Gene Therapy 24(2): 64-74.

[Request Form](#)

Administration

The fast proliferation of tumor cells develops faster than the vasculature, resulting, in most malignant tumors, in generation of hypoxic regions. Hypoxia renders solid tumors resistant to radiation and chemotherapeutics while providing opportunities for tumor-selective therapies targeting tumor hypoxia. Here we exploit two properties of tumors: propagation of tumor cells and ongoing generation of hypoxic regions to construct a system that preferentially leads to the death of tumor cells and thus hinders tumor growth. We constructed murine leukemia virus replication-competent (RCR) viruses that infect only propagating cells. These viruses express small hairpin RNAs (shRNAs) targeting cyclic AMP-response-element binding protein (CREB), hypoxia-inducible factors 1 (HIF)-1 or HIF-2 individually or all three together (X3). These viruses efficiently infected in vitro human hepatocellular carcinoma (HepG2 and FLC4) cells and established persistence of the virus and knocked down the expression of the regulators of the hypoxia-responding genes. Knockdown of either HIF-1 or CREB or both in hypoxia reduced the expression of hypoxia-response elements- and CRE-mediated gene expression, diminished cell proliferation and increased caspase-3 activity. We did not detect any significant effect of the efficiently knocked down HIF-2 on any of the functions tested in vitro. Moreover, severe combined immunodeficiency mice implanted subcutaneously with HepG2 stably infected with recombinant RCRs showed reduction of tumor growth and vascular endothelial growth factor expression, and no hypoxia-guided neovascularization. Combined treatment (RCRs+doxorubicin) improved efficacy in the context of in vitro hypoxia and in vivo (with either vACE-CREB or vACE-X3). This synergistic effect may lead to an improved efficacy and safety profile of the treatment that may result in fewer side effects.

Sirls LT and **Peters KM** (2017). "A cadaver model describing a novel retrograde approach for percutaneous placement of an implantable tibial nerve stimulation lead." Neurourology and Urodynamics 36(Sup 1): S48.

[Full-Text](#)

Department of Urology

Introduction: To aid and clarify the approach for percutaneous lead placement for permanent implantation of tibial nerve stimulation lead electrode. Methods: A cadaver model was developed to guide delivery of permanently implanted tibial nerve leads using bony landmarks, ultrasound and fluoroscopic imaging in below the knee cadaver legs. The tibial artery was identified proximally and a guide wire placed. The tibial nerve leads were placed percutaneously with a standard lead introducer. Both antegrade (proximal to distal) and retrograde approaches (distal to proximal) were explored. Both approaches were evaluated real time

with ultrasound (transverse and longitudinal) and fluoroscopy (lateral and anterior-posterior). Then the cadaver legs were dissected and lead placement was evaluated with respect to depth and orientation to the nerve, whether it was crossing the nerve or lying more parallel to the nerve. Results: Ultrasound easily identified the wire in the artery in both transverse and longitudinal planes, and the nerve posterior to the wire. Fluoroscopy, lateral and anterior-posterior, was effective in identifying the vector of lead placement, whether crossing the tibial nerve vs. placement more parallel to the nerve. The antegrade approach was modified by migrating more proximally up the lower leg, to try to achieve a more parallel vector of lead placement with the nerve. However, antegrade approaches were always crossing the tibial nerve and went deep to the nerve, with only 1-2 electrodes in close proximity to the nerve. The retrograde approach, starting at the level of the medial malleolus, about 1 finger breadth behind (in general about 1/3 the distance from the medial malleolus to Achilles tendon) was easy and effective in placing the lead parallel to the nerve with 3-4 electrodes in close proximity to the nerve. Conclusion: We report a novel, safe retrograde method of percutaneous lead placement parallel to the tibial nerve, avoiding key vascular structures. The retrograde approach, starting posterior to the medial malleolus, was easier and reproducibly placed a more parallel lead that may optimize tibial nerve stimulation. Ultrasound was effective in localizing the tibial artery to aid orientation and depth of placement of the stimulation lead and maximize safety. This minimally invasive retrograde percutaneous approach can place a chronic tibial nerve stimulation lead in the physician's office under local anesthesia.

Sokhandon F (2017). "Oral contrast administration for abdominal and pelvic CT scan in emergency setting: Is there a happy medium?" Abdominal Radiology 42(3): 784-785.

[Full-Text](#)

Department of Diagnostic Radiology and Molecular Imaging

Soto RG, Neves SE, Papadakos PJ and Shapiro FE (2017). "Personal electronic device use in the operating room." European Journal of Anaesthesiology 34(4): 246-247.

[Full-Text](#)

Department of Anesthesiology

Sprague ER (2017). "ORCID." Journal of Medical Library Association 105(2): 207-208.

[Full-Text](#)

Medical Library

Srinivasa DR, Miranda RN, **Kaura A**, Francis AM, Campanale A, Boldrini R, Alexander J, Deva A, Gravina P, Medeiros LJ, Nast K, Butler CE and Clemens MW (2017). "Global adverse event reports of breast implant-associated ALCL: An international review of 40 government authority databases." Plastic and Reconstructive Surgery. ePub Ahead of Print.

[Full-Text](#)

OUIWB Medical Student Author

BACKGROUND: An estimated 200 patients have been reported with breast implant associated anaplastic large cell lymphoma (BI-ALCL), a rare T-cell lymphoma developing around breast prostheses. The purpose of this study was to review federal database submissions relating to BI-ALCL in 37 countries representing the majority of breast implant markets worldwide with available adverse event reporting. **METHODS:** Database queries were performed for Australia, Brazil, Canada, China, Columbia, Japan, Mexico, National Competent Authorities of the European Member States, New Zealand, South Korea, and United States. Demographics, device characteristics, pathology, treatment modalities, and outcomes were assessed when available.

RESULTS: The United States MAUDE database included 459 entries in total for the search terms "Anaplastic" and "ALCL" as of September 2015. Excluding for duplicate entries, the MAUDE database had 258 unique cases of BI-ALCL of which 130 had pathologic markers performed. Implant surface was textured significantly more than smooth (50% vs. 4.2%, $p=0.0001$). Treatment, when reported ($n=136$), included explantation ($n=125$, 91.9%), chemotherapy ($n=42$, 30.8%), radiation ($n=25$, 18.4%), and/or stem cell transplant ($n=9$, 6.6%) and 5 deaths were reported. For the 40 countries queried, 340 unique cases were reported for lymphoma associated with breast implants. **CONCLUSIONS:** Worldwide federal reporting of BI-ALCL has

significant limitations in providing data regarding clinical history, treatment, and oncologic follow up. Country-specific total implant and textured implant sales data is needed in order to determine critical incidence and prevalence analysis. Detailed BI-ALCL patient registries such as American Society of Plastic Surgeon's PROFILE and centralized tissue banking are necessary in acquiring accurate complete data for sound decision making.

Starke RM, Ding D, Kano H, Mathieu D, Huang PP, Feliciano C, Rodriguez-Mercado R, Almodovar L, **Grills IS**, Silva D, Abbassy M, Missios S, Kondziolka D, Barnett GH, Dade Lunsford L and Sheehan JP (2017). "International multicenter cohort study of pediatric brain arteriovenous malformations. Part 2: Outcomes after stereotactic radiosurgery." Journal of Neurosurgery: Pediatrics 19(2): 136-148.

[Request Form](#)

Department of Radiation Oncology

Starke RM, Kano H, Ding D, Lee JYK, Mathieu D, Whitesell J, Pierce JT, Huang PP, Kondziolka D, Yen CP, Feliciano C, Rodriguez-Mercado R, Almodovar L, Pieper DR, **Grills IS**, Silva D, Abbassy M, Missios S, Barnett GH, Lunsford LD and Sheehan JP (2017). "Stereotactic radiosurgery for cerebral arteriovenous malformations: evaluation of long-term outcomes in a multicenter cohort." Journal of Neurosurgery 126(1): 36-44.

[Request Form](#)

Department of Radiation Oncology

OBJECTIVE In this multicenter study, the authors reviewed the results following Gamma Knife radiosurgery (GKRS) of cerebral arteriovenous malformations (AVMs), determined predictors of outcome, and assessed predictive value of commonly used grading scales based upon this large cohort with long-term follow-up. **METHODS** Data from a cohort of 2236 patients undergoing GKRS for cerebral AVMs were compiled from the International Gamma Knife Research Foundation. Favorable outcome was defined as AVM obliteration and no posttreatment hemorrhage or permanent symptomatic radiation-induced complications. Patient and AVM characteristics were assessed to determine predictors of outcome, and commonly used grading scales were assessed. **RESULTS** The mean maximum AVM diameter was 2.3 cm, with a mean volume of 4.3 cm³. A mean margin dose of 20.5 Gy was delivered. Mean follow-up was 7 years (range 1-20 years). Overall obliteration was 64.7%. Post-GRKS hemorrhage occurred in 165 patients (annual risk 1.1%). Radiation-induced imaging changes occurred in 29.2%; 9.7% were symptomatic, and 2.7% had permanent deficits. Favorable outcome was achieved in 60.3% of patients. Patients with prior nidus embolization (OR 2.1, $p < 0.001$), prior AVM hemorrhage (OR 1.3, $p = 0.007$), eloquent location (OR 1.3, $p = 0.029$), higher volume (OR 1.01, $p < 0.001$), lower margin dose (OR 0.9, $p < 0.001$), and more isocenters (OR 1.1, $p = 0.011$) were more likely to have unfavorable outcomes in multivariate analysis. The Spetzler-Martin grade and radiosurgery-based AVM score predicted outcome, but the Virginia Radiosurgery AVM Scale provided the best assessment. **CONCLUSIONS** GKRS for cerebral AVMs achieves obliteration and avoids permanent complications in the majority of patients. Patient, AVM, and treatment parameters can be used to predict long-term outcomes following radiosurgery.

Stem MS, Todorich B, Yonekawa Y, **Capone A, Williams GA** and **Ruby AJ** (2017). "Incidence and visual outcomes of culture-proven endophthalmitis following dexamethasone intravitreal implant." JAMA Ophthalmology 135(4): 379-382.

[Full-Text](#)

Department of Ophthalmology

IMPORTANCE: The rate of endophthalmitis following dexamethasone intravitreal implant (DEX) has varied in large clinical trials. Furthermore, to our knowledge, the optimal management of eyes with endophthalmitis associated with DEX has not been established. **OBJECTIVE:** To report the incidence of culture-proven endophthalmitis in a single vitreoretinal practice over the course of 3 years and describe the clinical outcomes associated with each case of endophthalmitis. **DESIGN, SETTING, AND PARTICIPANTS:** All patients who received DEX between January 14, 2013, and August 31, 2016, were included in this retrospective single-center case series at a private vitreoretinal practice. The patients were identified during a search of the billing records over the period of interest. Cases of endophthalmitis associated with DEX were also identified.

EXPOSURES: Treatment with DEX. MAIN OUTCOMES AND MEASURES: Development of endophthalmitis following DEX and the clinical management and outcomes of each case of endophthalmitis. RESULTS: Of the 1051 participants who collectively received 3593 injections of DEX, 4 patients developed endophthalmitis; all 4 patients were white, female, and 60 years or older (mean [SD] age, 75.6 [13] years). Two patients had culture-proven bacterial endophthalmitis after DEX monoinjections (0.06% of injections and 0.2% of patients). Three other cases of endophthalmitis developed after coinjection with bevacizumab (aggregate rate: 0.14% of injections and 0.38% of patients), of which 2 were culture positive. One patient developed endophthalmitis on 2 separate occasions. Vitrectomy was performed in 2 patients, and in 1 of these patients, the implant was removed. All 4 patients were treated with injection of intravitreal vancomycin and ceftazidime. CONCLUSIONS AND RELEVANCE: These data suggest that endophthalmitis is a rare event following injection of DEX. However, given the rarity of endophthalmitis following DEX and the heterogeneity among our reported cases, it remains unclear whether the DEX endophthalmitis rate approximates that of intravitreal anti-vascular endothelial growth factor therapy. These data also suggest that vitrectomy with removal of DEX may not be necessary in all cases of DEX-associated endophthalmitis.

Sura K, Lischalk JW, Leckie J, **Grills IS** and Vapiwala N (2017). "Applying for radiation oncology residency: Webinar-based medical student mentorship outreach." International Journal of Radiation Oncology Biology Physics 97(1): 11-12.

[Full-Text](#)

Department of Radiation Oncology

Swanberg SM (2017). "Inter-University Consortium for Political and Social Research (ICPSR)." Journal of the Medical Library Association 105(1): 106-107.

[Request Form](#)

Medical Library

Swanberg SM, Mi M and **Engwall K** (2017). "An integrated, case-based approach to teaching medical students how to locate the best available evidence for clinical care (Peer Reviewed)." MedEdPortal Publication No. 10531

[Full-Text](#)

Medical Library

Introduction: A major step of the evidence-based medicine (EBM) process is to locate the most current evidence in support of clinical care. This requires identifying and searching appropriate evidence-based resources. Medical library faculty at the Oakland University William Beaumont School of Medicine teach these skills as part of a dedicated EBM course at the end of the second year of the medical school curriculum. Methods: A 3-hour "Locating the Best Available Evidence" session is divided into two major components: an optional 50-minute didactic lecture followed by a mandatory 2-hour interactive lab. Students formulate a PICO (patient, intervention, comparison, outcome) question from a case, develop search strategies, and gather evidence. Formative feedback is provided to the students to help them prepare for a final case presentation. Results: Session effectiveness is assessed using course evaluations and the case presentation grade. Course evaluations indicate that students find this session structure to be especially helpful in learning the breadth of available EBM resources, preparing for their course case presentations, and acquiring skills for clinical clerkships. Quality of the case presentations also indicates students have acquired the necessary skills to be successful in practicing EBM skills in clerkship rotations and residency. Discussion: Whether institutions have a dedicated EBM course or integrate EBM skills into the medical school curriculum, this session could easily be adapted and implemented. It could also be tailored for graduate or continuing medical education environments in any specialty.

Tasker D, Higgs J and **Loftus S**, Eds. (2017). Community-based healthcare: The search for mindful dialogues. The Netherlands, Sense Publishers.

[Request Form](#)

Department of Biomedical Sciences (OU)

Thanos A, Todorich B, Hypes SM, Yonekawa Y, Thomas B, Randhawa S, **Drenser KA** and **Trese MT** (2017). "Retinal vascular tortuosity and exudative retinopathy in a family with dyskeratosis congenita masquerading as familial exudative vitreoretinopathy." Retinal Cases and Brief Reports 11(1): S187-S190.

[Full-Text](#)

Department of Ophthalmology

Purpose: To report a novel presentation of dyskeratosis congenita masquerading as familial exudative vitreoretinopathy. Methods: Observational case series involving single family and literature review. Results: A brother and sister were diagnosed with familial exudative vitreoretinopathy at ages 4 and 2, respectively. Both patients were managed with laser photocoagulation. Eight years after the initial presentation, both siblings developed pancytopenia secondary to bone marrow failure. Laboratory work-up revealed severely shortened telomere length in both patients, and genetic testing revealed a missense mutation in the gene that encodes the reverse transcriptase component of telomerase, confirming the diagnosis of dyskeratosis congenita. The father of both children was a carrier of the same mutation, who exhibited marked retinal vascular tortuosity of the second-order vessels. Conclusion: Dyskeratosis congenita is a severe multisystem disorder, which should be considered in cases of pediatric exudative retinopathies with concurrent signs and/or symptoms of bone marrow failure.

Thomas BJ, **Mehta N**, Yonekawa Y, Sridhar J, Kuriyan AE, Relhan N, Liang MC, Woodward MA, Witkin AJ, Shah C, Flynn HW, Garg SJ and **Wolfe JD** (2017). "Pars plana vitrectomy for late vitreoretinal sequelae of infectious endophthalmitis: Surgical management and outcomes." Retina 37(4): 651-656.

[Full-Text](#)

OUWB Medical Student Author

Department of Ophthalmology

Todorich B, Thanos A, Yonekawa Y and **Capone A** (2017). "Repair of total tractional retinal detachment in Norrie disease: Report of technique and successful surgical outcome." Ophthalmic Surgery Lasers and Imaging Retina 48(3): 260-262.

[Request Form](#)

Department of Ophthalmology

CASE REPORT: Norrie disease is a rare, but devastating cause of pediatric retinal detachment, universally portending a poor visual prognosis. This paper describes successful surgical management of an infant with total retinal detachment associated with Norrie disease mutation. The infant was a full-term white male who presented with bilateral total funnel retinal detachments (RDs). He underwent genetic testing, which demonstrated single-point mutation 133 G>A transition in exon 2 of the NDP gene. The retinal detachment was managed with translimbal iridectomy, lensectomy, capsulectomy, and vitrectomy. Careful dissection of the retrolental membranes resulted in opening of the funnel. Single-stage surgery in this child's eye achieved re-attachment of the posterior pole with progressive reabsorption of subretinal fluid and cholesterol without the need for external drainage. Fluorescein angiography, performed at 2 months postoperatively, demonstrated perfusion of major vascular arcades, but with significant abnormalities and aneurysmal changes of higher-order vessels, suggestive of retinal and vascular dysplasia. The child has maintained brisk light perception vision. Early surgical intervention with careful dissection of tractional tissues can potentially result in good anatomic outcomes in some patients with Norrie disease-associated retinal detachment.

Tran A, Zhang J, Woods K, Yu V, Nguyen D, **Gustafson G**, Rosen L and Sheng K (2017). "Treatment planning comparison of IMPT, VMAT and 4D radiotherapy for prostate cases." Radiation Oncology 12(1): Article Num 10.

[Full-Text](#)

Department of Radiation Oncology

Trese MGT, Thanos A, Yonekawa Y and Randhawa S (2017). "Optical coherence tomography angiography of paracentral acute middle maculopathy associated with primary antiphospholipid syndrome." [Ophthalmic Surgery, Lasers and Imaging Retina](#) 48(2): 175-178.

[Request Form](#)

Department of Ophthalmology

The authors present the first case of paracentral acute middle maculopathy as a manifestation of primary antiphospholipid syndrome (APS) with multimodal imaging, including optical coherence tomography angiography (OCTA). The association between APS and ophthalmic sequela is well-known. Recent advances in multimodal imaging, specifically OCTA, allow for better characterization of the mechanism and extent by which retinal arterial thrombosis can cause vision loss. Using advanced imaging modalities, the authors provide a comprehensive assessment of retinal ischemia, which showed not only localized capillary occlusion, but also ischemia of the deep retinal capillary plexus.

Trosch RM, Espay AJ, Truong D, Gil R, Singer C, LeWitt PA, Lew MF, Tagliati M, Adler CH, Chen JJ, Marchese D and Comella CL (2017). "Multicenter observational study of abobotulinumtoxinA neurotoxin in cervical dystonia: The ANCHOR-CD registry." [Journal of the Neurological Sciences](#) 376(Feb): 84-90.

[Full-Text](#)

Department of Neurology

Background The ANCHOR-CD prospective observational registry study evaluated the effectiveness of abobotulinumtoxinA in adult idiopathic cervical dystonia (CD) in clinical practice. **Methods** Adults with CD were eligible. Treating physicians determined abobotulinumtoxinA dose and treatment interval. The primary endpoint was patient response rate (Toronto Western Spasmodic Torticollis Rating Scale [TWSTRS] score reduction $\geq 25\%$ and Patient Global Impression of Change [PGIC] score of + 2 or + 3 at Week 4 of Cycle 1). **Results** 350 patients enrolled (75% women; mean age 59 ± 13.6 years; 27.4% botulinum neurotoxin-naïve) and 347 received at least 1 treatment. The median abobotulinumtoxinA dose for Cycle 1 was 500 Units. At Week 4, the responder rate was 30.6% ($n = 304$) and the TWSTRS total score decreased 27.4% from baseline. PGIC of at least "Much improved" was documented in 43.6% of patients and maintained in Cycles 2 through 4 (43.3%, 48.9%, and 52.8%, respectively). A total of 39 adverse events (31 study drug-related) were reported in 17 patients (5%); the most common were dysphagia ($n = 6$), muscle weakness ($n = 4$), and neck pain ($n = 3$). **Conclusion** This study confirmed the beneficial effect of abobotulinumtoxinA on CD in routine clinical practice as measured by improvements in TWSTRS and PGIC. No new safety concerns were identified.

Valina-Toth AL, **Boura J**, **Raff G** and **Chinnaiyan K** (2017). "Is there an association between vitamin D deficiency and disease severity on coronary CT angiography?" [Journal of the American College of Cardiology](#) 69(11): 1433.

[Full-Text](#)

Department of Biomedical Sciences (BHS)

Department of Internal Medicine

Vara AD, Koueiter DM, Pinkas DE, Gowda A, **Wiater BP** and **Wiater JM** (2017). "Intravenous tranexamic acid reduces total blood loss in reverse total shoulder arthroplasty: A prospective, double-blinded, randomized, controlled trial." [Journal of Shoulder and Elbow Surgery](#). ePub Ahead of Print.

[Full-Text](#)

Department of Orthopedic Surgery

Vinogradskiy Y, Jackson M, Schubert L, Jones B, Castillo R, Castillo E, **Guerrero T**, Mitchell J, Rusthoven C, Miften M and Kavanagh B (2017). "Assessing the use of 4DCT-ventilation in pre-operative surgical lung cancer evaluation." [Medical Physics](#) 44(1): 200-208.

[Full-Text](#)

Department of Radiation Oncology

Volz NB, Fringer R, Walters B and Kowalenko T (2017). "Prevalence of horizontal violence among emergency attending physicians, residents, and physician assistants." *Western Journal of Emergency Medicine* 18(2): 213-218.

[Full-Text](#)

OUWB Medical Student Author

Department of Emergency Medicine

Introduction: Horizontal violence (HV) is malicious behavior perpetrated by healthcare workers against each other. These include bullying, verbal or physical threats, purposeful disruptive behavior, and other malicious behaviors. This pilot study investigates the prevalence of HV among emergency department (ED) attending physicians, residents, and mid-level providers (MLPs). Methods: We sent an electronic survey to emergency medicine attending physicians (n=67), residents (n=25), and MLPs (n=24) in three unique EDs within a single multi-hospital medical system. The survey consisted of 18 questions that asked participants to indicate with what frequency (never, once, a few times, monthly, weekly, or daily) they have witnessed or experienced a particular behavior in the previous 12 months. Seven additional questions aimed to elicit the impact of HV on the participant, the work environment, or the patient care. Results: Of the 122 survey invitations 91 were completed, yielding a response rate of 74.6%. Of the respondents 64.8% were male and 35.2% were female. Attending physicians represented 41.8%, residents 37.4%, and MLPs 19.8% of respondents. Prevalence of reported behaviors ranged from 1.1% (Q18: physical assault) to 34.1% (Q4: been shouted at). Fourteen of these behaviors were most prevalent in the attending cohort, six were most prevalent in the MLP cohort, and three of the behaviors were most prevalent in the resident cohort. Conclusion: The HV behaviors investigated in this pilot study were similar to data previously published in nursing cohorts. Furthermore, nearly a quarter of participants (22.2%) indicated that HV has affected care for their patients, suggesting further studies are warranted to assess prevalence and the impact HV has on staff and patients.

Wall M, Thurtell MJ, Banik R, Kedhar S, Levin F, Feistmann J, Tai K, Yang A, Tobias K, Rivas M, Dominguez L, Perez V, Longmuir R, Eden T, Kardon R, Lesser R, O'Neil Y, Heaton S, Gintowt N, Rudich D, Digre K, Warner J, Hart B, Wegner K, Carlstrom B, Allman S, Katz B, Haroldsen A, Lam BL, Pasol J, Rosa PR, Morante A, Verriotto J, Katz D, Asbury T, Gerwin R, Barnett M, Hamilton S, Tongco C, Gangadharan B, May E, Patel A, Farris B, Siatkowsk RM, Miller H, Bergman V, White K, O'Dell S, Andrezik J, Tylte T, Shindler K, Dupont J, Salvo R, Drossner S, Ward S, Lo J, Engelhard S, Windsor E, Khella S, Tamhankar M, van Stavern G, Kambarian J, van Stavern R, Civitelli K, Shepherd JB, Bruce BB, Biousse V, Newman NJ, Brower J, Curtis L, Vaphiades M, Searcey K, Kline L, McDonald R, Givre SJ, Hales T, Bye P, Fuller K, Carnes KM, James K, Ragland M, Chung SM, Govreau DM, Lind JT, Williams Z, O'Gara G, Steinmetz K, Perevich M, Skrine K, Carter E, Ramchandran R, Katz S, Criden M, Coman G, McGregor J, Inman A, Subramanian PS, Hoffman PN, Medura M, Hartnett MM, Siddiqui M, Brown D, Arnold E, Boring J, Miller NR, Quiros P, Ramos S, Padilla M, Cisneros L, Kao A, Chicani CF, Na K, Tang R, Frishman L, Cajavilca P, Newland S, Gantz L, Prieto MG, Pass A, Holdeman NR, Lee MS, Roemhild H, Elasky W, Holleschau A, Fissgus J, Walski J, Harrison A, Falardeau J, Hills W, Bryant C, Kim D, Armour R, Higginbotham L, Newman SA, Holbrook K, Cook LD, Bacon H, Beall J, Goddard T, Hall W, Hamilton D, Lyon A, Fletcher W, Subramaniam S, Reimer J, Nickerson J, Costello F, Rismondo-Stankovich V, Flanagan M, Jensen A, Sibony P, Laverna AM, Mladek M, Tenzler R, Honkanen R, Miller-Horn J, Krupp L, Rizzo J, Cestari D, Snebold N, Vatcher B, Matera C, Miretsky E, Oakley J, Dumser J, Alperen T, Baptista-Pires S, Bator U, Barrett B, Callahan C, Brett S, Zimmerman K, Grillo M, Capaccioli K, Bhatti MT, Greene LT, Santiago-Turla MC, McClain N, El-Dairi M, Schatz M, Carter JE, O'Connor P, Mojica D, Smith J, Trigo Y, Kellogg SS, Martinez A, Comeau P, Sanchez A, McCarthy N, Perez E, Bazan C, Maitland C, Brooks HL, Jr., Gorsica R, Sherman B, Kramer J, Frohman L, Ribeiro A, Boschert K, Tu YF, Rivera S, Turbin R, ten Hove M, Breen A, Simms C, Kemp M, Farmer J, **Granadier R**, Osentoski T, Cumming K, Lewis B, **Stec L**, Kattah JC, Pula J, Buttice MR, Du Page K, Cooley K, Beck J, Bannon L, Guede C, Mejico L, Ko M, Jubelt B, Grosso M, Chilton M, Watson ML, Moore J, Martin T, Everhart C, Fish J, Cooke L, Dickinson JP, Acierno MD, Watts R, Thomassie A, Rao A, Chiasson TM, Rucker JC, Hannigan C, Katz-Sand I, Rajguru D, Kedar S, Vega N, Morris S, Pearson A, Hanson M, Kovacs B, Weil R, Pi-Sunyer X, Feldon S, Fisher W, Castillo D, Davis V, Fagan L, Hollar R, Keenan T, MacDowell P, Keltner J, Plumb K, Leming L, Werner JS, Harvey D, Johnson C, Bausch J, Gao S, Tu X, He H, Watts A, Baker D, Constantinescu R, Helles K, McMullen N, Olsen B, Preston L, Snively V, Stoutenburg A, Friedman D, Ayanru OI, Moss EA, Patel P, Mills R, Maguire M, Hart W, Jr., Katz J, Kaufman D, McCarthy C, Selhorst J and Corbett J (2017). "Optic disc haemorrhages at baseline as a risk factor for poor outcome in the Idiopathic Intracranial Hypertension Treatment Trial." *British Journal of Ophthalmology*. ePub Ahead of Print.

[Request Form](#)

Department of Ophthalmology

Ward ND and **Zhang PL** (2017). "Low Ratio of CD68/Kidney injury molecule-1 (KIM-1) expression in the proximal tubules of renal biopsies is associated with worse renal recovery at 6 month follow-up." Modern Pathology 30(Sup 2): 411A.

[Full-Text](#)

Department of Pathology

Ward ND and **Zhang PL** (2017). "Low Ratio of CD68/Kidney injury molecule-1 (KIM-1) expression in the proximal tubules of renal biopsies is associated with worse renal recovery at 6 month follow-up." Laboratory Investigation 97(Sup 1): 411A.

[Full-Text](#)

Department of Pathology

Waxweiler T, Schubert L, Diot Q, Faught A, Stuhr K, Castillo R, Castillo E, **Guerrero T**, Rusthoven C, Gaspar L, Kavanagh B, Miften M and Vinogradskiy Y (2017). "A complete 4DCT-ventilation functional avoidance virtual trial: Developing strategies for prospective clinical trials." Journal of Applied Clinical Medical Physics. ePub Ahead of Print.

[Request Form](#)

Department of Radiation Oncology

INTRODUCTION: 4DCT-ventilation is an exciting new imaging modality that uses 4DCT data to calculate lung-function maps. Because 4DCTs are acquired as standard of care for lung cancer patients undergoing radiotherapy, 4DCT-ventilation provides functional information at no extra dosimetric or monetary cost to the patient. The development of clinical trials is underway to use 4DCT-ventilation imaging to spare functional lung in patients undergoing radiotherapy. The purpose of this work was to perform a virtual trial using retrospective data to develop the practical aspects of a 4DCT-ventilation functional avoidance clinical trial. METHODS: The study included 96 stage III lung cancer patients. A 4DCT-ventilation map was calculated using the patient's 4DCT-imaging, deformable registration, and a density-change-based algorithm. Clinical trial inclusion assessment used quantitative and qualitative metrics based on the patient's spatial ventilation profile. Clinical and functional plans were generated for 25 patients. The functional plan aimed to reduce dose to functional lung while meeting standard target and critical structure constraints. Standard and dose-function metrics were compared between the clinical and functional plans. RESULTS: Our data showed that 69% and 59% of stage III patients have regional variability in function based on qualitative and quantitative metrics, respectively. Functional planning demonstrated an average reduction of 2.8 Gy (maximum 8.2 Gy) in the mean dose to functional lung. CONCLUSIONS: Our work demonstrated that 60-70% of stage III patients would be eligible for functional planning and that a typical functional lung mean dose reduction of 2.8 Gy can be expected relative to standard clinical plans. These findings provide salient data for the development of functional clinical trials.

Weinberger M and **Doshi D** (2017). "Vocal cord dysfunction: A functional cause of respiratory distress." Breathe 13(1): 15-21.

[Full-Text](#)

Department of Pediatrics

Initially described as hysteria and then Munchausen's stridor, we now recognise vocal cord dysfunction as several disorders. Exercise-induced and spontaneously occurring phenotypes exist that benefit from different treatments. The former appears to respond to pharmacological pre-treatment with an anticholinergic aerosol; vocal cord training is the recommended treatment for the latter. The differential diagnosis includes consideration of neurological and anatomical abnormalities. Recognition and effective treatment is important to avoid misdiagnosis that results in unnecessary and ineffective medical care.

Wilhalme H, Goukasian N, De Leon F, He A, **Hwang KS**, Woo E, Elashoff D, Zhou Y, Ringman JM and Apostolova LG (2017). "A comparison of theoretical and statistically derived indices for predicting cognitive decline." [Alzheimer's and Dementia: Diagnosis, Assessment and Disease Monitoring](#) 6(Jan): 171-181.

[Full-Text](#)

OUWB Medical Student Author

Introduction Both theoretical and statistically derived approaches have been used in research settings for predicting cognitive decline. **Methods** Fifty-eight cognitively normal (NC) and 71 mild cognitive impairment (MCI) subjects completed a comprehensive cognitive battery for up to 5 years of follow-up. Composite indices of cognitive function were derived using a classic theoretical approach and exploratory factor analysis (EFA). Cognitive variables comprising each factor were averaged to form the EFA composite indices. Logistic regression was used to investigate whether these cognitive composites can reliably predict cognitive outcomes. **Results** Neither method predicted decline in NC. The theoretical memory, executive, attention, and language composites and the EFA-derived "attention/executive" and "verbal memory" composites were significant predictors of decline in MCI. The best models achieved an area under the curve of 0.94 in MCI. **Conclusions** The theoretical and the statistically derived cognitive composite approaches are useful in predicting decline in MCI but not in NC.

Wilkinson JB, Shah C, **Amin M, Nadeau L**, Shaitelman SF, **Chen PY, Grills IS**, Martinez AA, Mitchell CK, Wallace MF and Vicini FA (2017). "Outcomes according to breast cancer subtype in patients treated with accelerated partial breast irradiation." [Clinical Breast Cancer](#) 17(1): 55-60.

[Full-Text](#)

Department of Pathology

Department of Internal Medicine

Department of Radiation Oncology

Micro-Abstract Using molecular and immunohistochemical-based testing for gene and protein expression patterns, the most commonly studied breast cancer variants are the luminal A, luminal B, HER2, and basal subtypes. Previous reports on outcomes for the breast cancer subtypes have focused on patients treated with traditional breast-conserving therapy with whole-breast irradiation. In this analysis, we observed 5-year local control rates in 278 women after treatment with accelerated partial breast irradiation, which is excellent for luminal, HER2, and basal phenotypes of early-stage breast cancer.

Wolff M, Johannesen KM, Hedrich UB, Masnada S, Rubboli G, Gardella E, Lesca G, Ville D, Milh M, Villard L, Afenjar A, Chantot-Bastaraud S, Mignot C, Lardinois C, Nava C, Schwarz N, Gerard M, Perrin L, Doummar D, Auvin S, Miranda MJ, Hempel M, Brilstra E, Knoers N, Verbeek N, van Kempen M, Braun KP, Mancini G, Biskup S, Hortnagel K, Docker M, Bast T, Loddenkemper T, Wong-Kisiel L, Baumeister FM, Fazeli W, Striano P, Dilena R, Fontana E, Zara F, Kurlemann G, Klepper J, Thoene JG, **Arndt DH**, Deconinck N, Schmitt-Mechelke T, Maier O, Muhle H, Wical B, Finetti C, Bruckner R, Pietz J, Golla G, Jillella D, Linnet KM, Charles P, Moog U, Oiglane-Shlik E, Mantovani JF, Park K, Deprez M, Lederer D, Mary S, Scalais E, Selim L, Van Coster R, Lagae L, Nikanorova M, Hjalgrim H, Korenke GC, Trivisano M, Specchio N, Ceulemans B, Dorn T, Helbig KL, Hardies K, Stamberger H, de Jonghe P, Weckhuysen S, Lemke JR, Krageloh-Mann I, Helbig I, Kluger G, Lerche H and Moller RS (2017). "Genetic and phenotypic heterogeneity suggest therapeutic implications in SCN2A-related disorders." [Brain](#). ePub Ahead of Print.

[Full-Text](#)

Department of Pediatrics

Mutations in SCN2A, a gene encoding the voltage-gated sodium channel Nav1.2, have been associated with a spectrum of epilepsies and neurodevelopmental disorders. Here, we report the phenotypes of 71 patients and review 130 previously reported patients. We found that (i) encephalopathies with infantile/childhood onset epilepsies (≥ 3 months of age) occur almost as often as those with an early infantile onset (< 3 months), and are thus more frequent than previously reported; (ii) distinct phenotypes can be seen within the late onset group, including myoclonic-atonic epilepsy (two patients), Lennox-Gastaut not emerging from West syndrome (two patients), and focal epilepsies with an electrical status epilepticus during slow sleep-like EEG pattern (six patients); and (iii) West syndrome constitutes a common phenotype with a major recurring mutation (p.Arg853Gln: two new and four previously reported children). Other known phenotypes include

Ohtahara syndrome, epilepsy of infancy with migrating focal seizures, and intellectual disability or autism without epilepsy. To assess the response to antiepileptic therapy, we retrospectively reviewed the treatment regimen and the course of the epilepsy in 66 patients for which well-documented medical information was available. We find that the use of sodium channel blockers was often associated with clinically relevant seizure reduction or seizure freedom in children with early infantile epilepsies (<3 months), whereas other antiepileptic drugs were less effective. In contrast, sodium channel blockers were rarely effective in epilepsies with later onset (>/=3 months) and sometimes induced seizure worsening. Regarding the genetic findings, truncating mutations were exclusively seen in patients with late onset epilepsies and lack of response to sodium channel blockers. Functional characterization of four selected missense mutations using whole cell patch-clamping in tsA201 cells-together with data from the literature-suggest that mutations associated with early infantile epilepsy result in increased sodium channel activity with gain-of-function, characterized by slowing of fast inactivation, acceleration of its recovery or increased persistent sodium current. Further, a good response to sodium channel blockers clinically was found to be associated with a relatively small gain-of-function. In contrast, mutations in patients with late-onset forms and an insufficient response to sodium channel blockers were associated with loss-of-function effects, including a depolarizing shift of voltage-dependent activation or a hyperpolarizing shift of channel availability (steady-state inactivation). Our clinical and experimental data suggest a correlation between age at disease onset, response to sodium channel blockers and the functional properties of mutations in children with SCN2A-related epilepsy.

Xie M, Edupuganti S, Xie C, Wyrzykowski M and Wey E (2017). "Hemorrhagic complication and its laboratory evaluation in patients receiving direct oral anticoagulants." Modern Pathology 30(Sup 2): 386A-387A.

[Full-Text](#)

Department of Pathology

OUWB Medical Student Author

Xie M, Edupuganti S, Xie C, Wyrzykowski M and Wey E (2017). "Hemorrhagic complication and its laboratory evaluation in patients receiving direct oral anticoagulants." Laboratory Investigation 97(Sup 1): 386A-387A.

[Full-Text](#)

Department of Pathology

OUWB Medical Student Author

Yadav S, Kazanji N, Narayan KC, Paudel S, Falatko J, **Shoichet S, Maddens M and Barnes MA** (2017). "Comparison of accuracy of physical examination findings in initial progress notes between paper charts and a newly implemented electronic health record." Journal of the American Medical Informatics Association 24(1): 140-144.

[Full-Text](#)

Department of Internal Medicine

Introduction: There have been several concerns about the quality of documentation in electronic health records (EHRs) when compared to paper charts. This study compares the accuracy of physical examination findings documentation between the two in initial progress notes. Methodology: Initial progress notes from patients with 5 specific diagnoses with invariable physical findings admitted to Beaumont Hospital, Royal Oak, between August 2011 and July 2013 were randomly selected for this study. A total of 500 progress notes were retrospectively reviewed. The paper chart arm consisted of progress notes completed prior to the transition to an EHR on July 1, 2012. The remaining charts were placed in the EHR arm. The primary endpoints were accuracy, inaccuracy, and omission of information. Secondary endpoints were time of initiation of progress note, word count, number of systems documented, and accuracy based on level of training. Results: The rate of inaccurate documentation was significantly higher in the EHRs compared to the paper charts (24.4% vs 4.4%). However, expected physical examination findings were more likely to be omitted in the paper notes compared to EHRs (41.2% vs 17.6%). Resident physicians had a smaller number of inaccuracies (5.3% vs 17.3%) and omissions (16.8% vs 33.9%) compared to attending physicians. Conclusions: During the initial phase of implementation of an EHR, inaccuracies were more common in progress notes in the EHR compared to the paper charts. Residents had a lower rate of inaccuracies and omissions compared to attending physicians. Further research is needed to identify training methods and

incentives that can reduce inaccuracies in EHRs during initial implementation.

Yadav S and **Zakalik D** (2017). "Synchronous bilateral breast cancer compared to unilateral breast cancer: A population based study." Cancer Research 77(Sup 4): Abstract P5-08-14.

[Request Form](#)

Department of Internal Medicine

Yang J, Robbins M, Reilly J, **Maerz T** and **Anderson K** (2017). "The clinical effect of a rotator cuff retear." American Journal of Sports Medicine 45(3): 733-741.

[Full-Text](#)

Department of Surgery

Department of Orthopedic Surgery

Yousif M, Pui JC, Hajjar RT, Haass EA, Kaur H, **Seitz J**, Muhleman M, **Cragg D** and **Qing F** (2017). "Aortic root abscess clearly shown on 111In-leukocyte scan but less obvious on transesophageal echocardiogram." Case Reports in Orthopedics. ePub Ahead of Print.

[Full-Text](#)

Department of Diagnostic Radiology and Molecular Imaging

Department of Internal Medicine

A 79-year-old man with history of aortic stenosis, status post bioprosthetic aortic valve replacement, episodes of bacteremia, and endocarditis presented to hospital with fever. Clinical assessment led to suspicion of possible endocarditis. Initial interpretation of transesophageal echocardiogram was inconclusive without vegetation in mitral/aortic valve. An In-leukocyte scan demonstrated increased uptake in the area of aortic valve, suggestive of infection. Further review of the transesophageal echocardiogram showed signs of annular abscess. This case highlights that combination of echocardiography with white blood cell imaging increases the sensitivity to detect endocarditis/perivalvular abscess.

Yu JL, Nguyen DC, **Chaiyasate K**, Gangopadhyay N, Sachanandani N and Woo AS (2017). "Single Z-plasty versus double-opposing Z-plasty: A cadaveric study of palatal lengthening." Journal of Craniofacial Surgery 28(2): 343-346.

[Full-Text](#)

Department of Surgery

Objective: The double-opposing Z-plasty is an effective method of repairing the cleft palate due to its reorientation of the palatal musculature and lengthening of the soft palate. A technique for lengthening the palate with a single oral Z-plasty has also been described. The authors hypothesize that these 2 techniques have equivalent effects on palate length. Methods: A cadaver study was performed. Ten fresh adult cadaver heads were used. All palates were divided in the midline. In 5 specimens, a modified double-opposing Z-plasty technique was used; 5 other specimens underwent an oral Z-plasty with a straight-line repair of the nasal mucosa. In both groups, the levator veli palatini muscles were separately dissected and reapproximated with an intravelar veloplasty. The velar length, defined in this study as the distance from the posterior nasal spine to the tip of uvula, was measured before and after the surgical procedure. Results: The double-opposing Z-plasty produced a mean increase of 1.0 +/- 0.6 cm in velar length (P = 0.023). The single Z-plasty repair resulted in a mean gain of 1.1 +/- 0.3 cm (P = 0.001). There was no difference in change in palate length between the 2 procedures (P = 0.941), and no difference in the percentage of soft palate lengthening (24% vs 29%, respectively; P = 0.565). Conclusions: A single oral Z-plasty provides palatal lengthening equivalent to that of a double-opposing Z-plasty procedure.

Zaorsky NG, Showalter TN, Ezzell GA, Nguyen PL, Assimos DG, D'Amico AV, Gottschalk AR, **Gustafson GS**, Keole SR, Liauw SL, Lloyd S, McLaughlin PW, Movsas B, Prestidge BR, Taira AV, Vapiwala N and Davis BJ (2017). "ACR Appropriateness Criteria® external beam radiation therapy treatment planning for clinically localized prostate cancer, part I of II." Advances in Radiation Oncology 2(1): 62-84.

[Full-Text](#)

Department of Radiation Oncology

Zazove P, McKee M, Schleicher L, Green L, Kileny P, Rapai M and **Mulhem E** (2017). "To act or not to act: Responses to electronic health record prompts by family medicine clinicians." Journal of the American Medical Informatics Association 24(2): 275-280.

[Request Form](#)

Department of Family Medicine

A major focus of health care today is a strong emphasis on improving the health and quality of care for entire patient populations. One common approach utilizes electronic clinical alerts to prompt clinicians when certain interventions are due for individual patients being seen. However, these alerts have not been consistently effective, particularly for less visible (though important) conditions such as hearing loss (HL) screening. Materials and Methods: We conducted hour-long cognitive task analysis interviews to explore how family medicine clinicians view, perceive, and use electronic clinical alerts, and to utilize this information to design a more effective alert using HL identification and referral as a model diagnosis. Results: Four key direct barriers were identified that impeded alert use: poor standardization and formatting, time pressures in primary care, clinic workflow variations, and mental models of the condition being prompted (in this case, HL). One indirect barrier was identified: electronic health record and institution/government regulations. We identified that clinicians' mental model of the condition being prompted was probably the major barrier, though this was often expressed as time pressure. We discuss solutions to each of the 5 identified barriers, such as addressing physicians' mental models, by focusing on physicians' expertise rather than knowledge to improve their comfort when caring for patients with the conditions being prompted. Conclusions: To unleash the potential of electronic clinical alerts, electronic health record and health care institutions need to address some key barriers. We outline these barriers and propose solutions.

Zhang L, Johnson J, Gottschalk AR, Chang AJ, Hsu IC, Roach M and **Seymour ZA** (2017). "Receiver operating curves and dose-volume analysis of late toxicity with stereotactic body radiation therapy for prostate cancer." Practical Radiation Oncology 7(2): e109-e116.

[Request Form](#)

Department of Radiation Oncology

Purpose The purpose of this study was to evaluate a receiver operating characteristic (ROC) curve method to determine dose thresholds with late genitourinary (GU) toxicity after stereotactic body radiation therapy for prostate cancer. Methods and materials Seventy-eight patients diagnosed with low- to intermediate-risk prostate cancer and treated with stereotactic body radiation therapy alone were reviewed retrospectively. All patients received a total dose of 38 Gy in 4 fractions with a planning target volume expansion of 2 mm. GU toxicity was documented according to the Common Terminology Criteria for Adverse Events, version 4. ROC analysis applied on a logistic regression model was used to determine optimal dosimetric parameters for GU toxicity. Results The median age at treatment was 69 years with a median prostate volume of 46.2 mL. The median prescription isodose line was 67% (interquartile range, 65, 70). The median clinical follow-up was 35.49 months. Late grade 1, 2, and 3 GU toxicity occurred in 21.8%, 19.2%, and 2.6% of cases, respectively. Late grade 2+ GU toxicity was associated with prescription to isodose line ($P = .009$) and normalized volumes for heterogeneity ≥ 46 Gy. The ROC method successfully produced thresholds for dose-volume recommendations for both prostate and urethra, including normalized prostate volumes from 46 to 50 Gy, such as volume of target tissue receiving 46% of the prescribed dose (V46) Gy of 36.7% (sensitivity, 71%; specificity, 61%; area under the curve, 0.67) with an associated probability of late GU grade 2+ toxicity of 21%. Conclusions Intraprostatic heterogeneity should be controlled with potential thresholds at V46 Gy $< 36.7\%$, V48 Gy $< 21\%$, and V50 Gy $< 9.5\%$ of the normalized prostate volume to keep late grade 2+ GU toxicity $\leq 20\%$ with 4-fraction schemes. This may be facilitated with a higher prescription isodose line ($> 69\%$).