

University of Dayton & Miami Valley Hospital
Fifth Annual Healthcare Symposium
Poster Session Abstracts
April 5, 2014

Bench to Bedside (Translational Research)

BB-1-D

Timothy Cutler, Michael Moran, Andrew Steffensmeier, Oorvashi Roy Puli, Greg Mancini

Clinical Application Alzheimer's Research in Drosophila melanogaster

Research using *Drosophila melanogaster* can be used as valuable groundwork for eventual clinical treatments in humans. Some promising results in the study of Alzheimer's disease have been found using *Drosophila*, a great model organism for research due to its short life cycle, appendages that grow from imaginal discs, and the simple but diverse genetic tools we can employ. We can also misexpress a gene in a specific part of the fly which otherwise could be fatal if it were misexpressed everywhere. Using these tools, we have misexpressed the human Amyloid Beta 42 protein in the *Drosophila* eye, causing neurodegeneration and an Alzheimer's disease model. We have seen that the CREBs Binding Protein (CBP) has a neuroprotective function in cases of neurodegeneration. Alzheimer's Disease has no known cure or treatments. The studies performed in *Drosophila* can be applied to higher organisms and eventually to humans, since both genomes are highly conserved, making it relatively easy to apply our studies to humans through further study.

BB-2-D

Michael Moran

Homeotic gene teashirt (tsh) has a neuroprotective function in amyloid-beta 42 mediated neurodegeneration

The neurodegeneration that results from Alzheimer's disease (AD) is caused by the improper cleavage of APP to form the polypeptide amyloid beta 42 (A β 42). Being hydrophobic, A β 42 clumps together forming plaques which in turn accumulate around the neurons of the brain causing many cellular disturbances and, eventually, neuronal death. The characteristically slow degeneration of neurons in AD has been accredited to this accumulation of A β 42 in the brain. However, the exact mechanisms of how and why this accumulation happens are not yet fully understood. Using the A β 42 misexpression model where we misexpress A β 42 in the differentiating neurons of the eye using GMR-Gal4 driver, we carried out a screen to look for downstream modifiers of neurodegenerative phenotype of A β 42 accumulation. Here we present the results of the screen and further characterization of genetic interactions of two genetic modifiers and their role in A β 42 mediated neurodegeneration in the *Drosophila* eye.

BB-3-D

Austin Roebke, Indrayani Waghmare, Madhuri Kango-Singh

A Drosophila Brain Tumor Model to Study Interclonal Interactions

Glioblastoma (GBM) is a malignant primary brain tumor with poor prognosis. Genetic and transcriptomic analyses of patient samples reveal differences in molecular signatures that may account for differences in responses to therapy. Another reason is the therapy resistance of the Glioma stem cells (GSCs) - stem cells with prominent self-renewing and tumorigenic ability that can interact with the non-GSCs to promote tumorigenesis via interclonal-type interactions. We have developed a simple glioma model in *Drosophila* to address the effects of different molecular changes on the growth and progression of tumors, and to study interclonal interactions. Several studies in *Drosophila* have shown a tumor promoting role for signaling pathways, e.g., the Jun-N-terminal kinase (Jnk) pathway and the Hippo pathway. In addition, mitogenic signals (e.g., Wingless) are induced. Consistent with these findings from *Drosophila* models, mammalian studies show activated Jnk, Yap and Wnt levels in aggressive tumors including GBM. Here we present our progress on studying the role of JNK, Hippo and Wg signaling on tumor growth using our *Drosophila* glioma model, and our studies on the interclonal interactions between stem and non-stem cells. Moreover, here we highlight the clinical applications of such translational research. The two main goals are to use a small library of chemical inhibitors to find compounds that reverse or slow down glioma-type tumors, and to find genes involved in the process of glioma growth using *Drosophila* genetic screens. These findings can then be tested in mammalian models for diagnostic or prognostic (therapeutic) value.

BB-4-W

Ahmed Hawash

Targeted alpha particle irradiation as a glioblastoma therapy

This study investigated the use of alpha particle irradiation to treat an animal model of glioblastoma multiforme. Glioblastoma is a very aggressive tumor in the brain and its growth is supported by cancer stem cells and an extensive vascular network. A radioimmunoconstruct consisting of the vascular targeting antibody, E4G10, and the alpha particle emitting radionuclide, Ac-225, has been used to target angiogenic tumor vascular endothelium and endothelial progenitor cells in the marrow. When this radioimmunoconstruct was used in a mouse with a glioblastoma, it damaged the neovasculature associated with the tumor tissue. We hypothesize that it can collaterally irradiate and deplete the perivascular stem cell niche and further that endothelial progenitor cells of the bone marrow can be targeted and depleted.

Community Initiatives

CI-1-D

Andre Dessert

Reach out with ReachOut

ReachOut Clinic is a medical clinic devoted to serving the underserved and uninsured population of Montgomery County. I volunteer there and am tasked with triaging patients as they come in. The purpose of my poster is to identify the role that ReachOut plays in this community, as well as highlight the importance of volunteers towards the success of ReachOut. The research for this poster would be conducted using the ReachOut website, contacts at the ReachOut Clinic, and my personal experience as a volunteer. This poster could help raise awareness of the need for health clinics, while also showing the importance of volunteers at such clinics. The final poster will contain the research, charts to help with understanding, and pictures showing the kind of work done by volunteers at ReachOut.

CI-2-D

Elizabeth Johns, Timothy Frey

Global Brigades: Our Medical Mission to Nicaragua

The purpose of our presentation is to educate people about health care delivery in Nicaragua and inform them of what we did when we traveled there with the organization, Global Brigades. Global Brigades is a student-led, nonprofit health and sustainable development organization with membership that spans from North American to European universities. Student and professional volunteers work to empower communities in developing countries, like Nicaragua, with sustainable solutions that improve the quality of life and environment, while also respecting the local culture. We, along with the Global Brigades Chapter at the University of Dayton, recently traveled to Nicaragua in January 2014 on a medical brigade. The mission of the medical brigade was to deliver comprehensive health services in rural communities with limited access to healthcare by having the students work alongside local medical professionals. As students, we had the opportunity to assist during triage, shadow physicians during consultations, deliver educational workshops, and assist local pharmacists in distributing medications. We had the opportunity to learn about health care delivery in Nicaragua, the most common health issues that Nicaraguans face, how our work could be sustained, and what people can do to help.

CI-3-D

Rebecca Mahne, Court Wille

Public Health Care Delivered to the Uninsured: How Reach Out provides to the City of Dayton

Many people around the country struggle to find affordable Health Care. While the government is implementing plans to allow everyone health care coverage, there are medical facilities that provide free health care to the uncovered. Reach Out is one of those facilities located in Dayton, OH that works off the volunteer efforts of doctors, nurses, and students to help uncovered patients. Nurses and doctors not only donate their time to patients, but also teaching students from different schools about the medical field. Not only does Reach Out rely on the volunteer efforts of others, but it also relies off of donations and grants to keep the facility running. This project discusses the positive features of Reach Out and how it provides for those who are unable to acquire health care for themselves. The volunteer's play a large role in the running of Reach Out and the opportunities it provides for students leaves a lasting effect. This presentation looks in to the world of Reach Out and how it's redefining Health Care.

CI-4-D

Kelly Schmitz, Zach Wisniewski

The Dental Interest Group

Doctor visits and health care are expensive privileges in our world today. There are a large amount of people who live day to day without any kind of healthcare or dental care especially, that do not have the necessary knowledge about how to keep their teeth clean and mouth healthy. Our group on campus, the Dental Interest Group, has the privilege of going to five local elementary schools in the Dayton area and talking to kids grades 1-5 that do not have the basic knowledge of how to take care of their teeth. This project will show where exactly this gap of knowledge is coming from when it comes to oral health and hygiene, and what we at the University of Dayton are doing to change that.

CI-5-D

Christopher Watson, Jacob Debellis

Health Psychology and Service-Learning

In Dr. Reeb's health psychology class he has incorporated a service-learning component. Health psychology explores the relationship between psychological and physiological factors in regards to a person's health. The students volunteer at the St. Vincent de Paul men's shelter. The students are involved in a multitude of different activities there, including helping with resumes, job applications, GED tutoring, computer skills, playing games, substance abuse programs, and more. The purpose of our involvement is to help improve the men's time at the shelter and help them exit the program, while also helping us understand the affects this help can have on their physical and mental health. We strive to increase these men's self-sufficiency so that once they leave the shelter, there's a decreased chance they will return.

CI-6-W

Withdrawn

CI-7-W

Huong-Thao Tran

Meeting People Where They Are: A Pilot Project to Improve Health Communication in the Dayton Vietnamese Community

The Vietnamese community in the US is growing, but their health lags behind other Asian groups, and they are underrepresented in the health profession. Our project sought to improve health literacy in the local Vietnamese community by first embedding an educator who solicited feedback regarding the community's needs. An adaptive health education program was created to encourage healthy lifestyles; expand cultural competency; and promote health professions. We hypothesized that knowledge and confidence about community-specific health needs would be significantly improved through the intervention. In 2013, the author held weekly "healthy lifestyle" sessions, in Vietnamese, based upon the participants' own perceptions of their health needs. The sessions answered learner-generated questions through interactive discussions, bilingual handouts, social media, and hands-on healthy cooking sessions. The final event was a medical school tour and a panel on science careers. Participants were given identical pre- and post-session assessments of confidence in health management. Participants and non-participants (controls) were also given a cognitive assessment of the health topics discussed one month after completion of the program. Participants scored significantly higher (61.22%) in the health knowledge assessment compared to the controls (45.88%, $p=0.0006$). Confidence levels about their health competence, and knowledge about Vietnamese-specific health problems were significantly higher in the post-session surveys. Interactive sessions significantly increased health literacy and confidence within the Dayton Vietnamese community, while expanding the cultural competency and knowledge of medical students. This pilot showed an inexpensive, reproducible format that could be used in other underrepresented populations, here and abroad, to improve health communication.

CI-8-W

Mira Trivedi, Zenar Tekeste, Jay Ingram, Shalini Forbis, M.D and Ranjana Sinha, M.D.

Healthy Way Initiative: A Closer Look at Inpatient Units

Childhood obesity is an escalating health concern. Health care providers need to identify children at risk and educate families on healthy lifestyles. To demonstrate the importance and evaluate the progress of the recently implemented Healthy Way Initiative on Dayton Children's Hospital inpatient units. In January 2014, Dayton Children's launched the inpatient Healthy Way Initiative. Families now receive the "5210/MyPlate" handout, growth information and encouragement to obtain healthier lifestyle information from the Family Resource Center (FRC). For patients with BMIs > 95th percentile, providers assess whether to take further action by ordering labs or providing referrals to outpatient clinics. Nurses/dietitians document the handouts were given to families and providers record any weight specific interventions in the patient's chart. On discharge, the primary care provider receives a discharge summary, which states healthy lifestyles were addressed and suggests recommendations for follow-up treatment. A chart review will be utilized to assess the progress of the Healthy Way Initiative. Critical components will include labs ordered, referrals placed, clinicians' documentation of their actions, and family visits to the resource center and the materials provided. Data will be tracked for both pre and post intervention study periods. The end goal is to increase general awareness of childhood obesity and to intervene earlier in order to prevent significant medical problems. Data assessing the inpatient intervention, referrals and utilization of the FRC will provide opportunities for measuring outcomes and the success of the Healthy Way Initiative.

Comparative Healthcare

CH-1-D

Sofia Gillum, Kendra Rindler

Germany's Krankenkassen

The purpose of our poster is to examine the healthcare system in Germany and to determine what aspects of German healthcare may be beneficial for the United States to consider adopting. The German healthcare system shows some similarities with the American system, but there are some major differences that Americans should be aware of and even consider adopting themselves. In Germany, private non-profit insurance companies insure everyone, regardless of prior conditions or employment status. Every person in Germany is eligible for this care, regardless of whether he or she is a citizen, or even if he or she is in the country legally. Germany accomplishes this expansive health care without sacrificing quality, and German citizens even pay less than Americans. However, it is still not a perfect system. Like the rest of the world, Germany faces soaring costs in healthcare. In an effort to curb these costs, the government has cut payment to healthcare professionals, resulting in protests and demonstrations. Despite these problems, there is still much that the American system can learn from the German one. This poster will contain the aspects of German healthcare system that we recommend the United States examine.

CH-2-D

Kalie Herman, Court Wille

Japanese Healthcare Delivery

The purpose of this presentation is to outline the pros and cons of Japanese healthcare delivery and draw upon beneficial strategies in application to the U.S. system. The Japanese founded their healthcare system based off studies on the world's developed nations starting in the 19th century until World War II. As a result of diligent research, the Japanese developed an affordable system that expediently treats patients while providing optimal care. With the world's highest life expectancy, Japan proves the success of its healthcare system. Unfortunately, the affordability of healthcare exists at the expense of health providers and hospitals, both by which absorb much of the cost. This presentation will analyze and compare Japanese insurance plans, affordability of healthcare, and the overall impact on providers to that of the United States. The goal of an optimal healthcare system is to provide the means for affordable, expedient, and quality healthcare coverage, all while securing the positions of providers. The United States can benefit from merging aspects of Japanese healthcare delivery into its own system.

CH-3-D

We'am Hussain, Anam Hussain

Hospital Services for Middle and Lower Income Families in India

In America, we are currently striving to provide adequate healthcare to all, regardless of income level. I had the opportunity to travel to India to observe how patients of different income levels are treated in the different facilities available. For two months I shadowed physician, Dr. Mahmood Osmani, who owns a hospital with in-patient facility in Hyderabad, India, serving middle and lower income families. There I observed how treatments are provided for patients who pay minimum fees: by relying on more direct knowledge of the physician and less use of technology. The physician would palpate the abdomen at a particular location and immediately correctly diagnose acute appendicitis, or diagnose a heart condition by auscultating the heart and doing simple investigations such as an EKG and chest X-rays. His education and skills had so finely developed that scans and technological protocols did not need to be utilized to help diagnose and treat the patients. Though these technological advances are indeed available in the large corporate hospitals, these are mostly used for those who can afford the cost of these services, as all medical costs in India are out of pocket pay. Nevertheless, because of the particular training of doctors, many families who cannot afford high cost modalities are receiving effective treatments because of the skills of the physician in privately owned hospitals. In this project, I will highlight several cases I observed while shadowing Dr. Osmani, and show how physical touch and expertise helped treat the many patients with various illnesses.

CH-4-D

Matt Luers, Breanna Dachsteiner, Katie Lorentz, Jarrod Wurm

An Ounce of Prevention Is Worth a Pound of Cure: Preventative Medicine in the United States and Great Britain

The purpose of our symposium poster is to identify how the United States of America's preventative health care differs from the United Kingdom's, and how it can be improved to implement better health to the entire nation. The poster defines preventative health care as medical advice or medicine used to facilitate and maintain optimum physical, mental, or emotional health in a person. The overarching problem seen in American culture is the overwhelming expense and lack of consensus among public officials. The focus of this project involved research that was primarily literature based. We concentrate on identifying and categorizing the two countries' healthcare systems using two different models, the public health model and the medical model. The public health model includes socio-economic factors that influence the health of humans; whereas, the medical model comprises individual aspects of medicine, such a screening for a particular disease. Both models are used differently in each particular country, leading us to believe that one country has found a better way to integrate preventative medicine. We believe that if the United States decided to incorporate the ideas of ending the copious amounts of controversial advice and lowering the prices of most preventative treatment, as seen in the United Kingdom's health care, Americans would have a much higher standard of health.

CH-5-D

Megan McGrath, Katie Kimberly, Larry Bohannon, Kelsie Neal

Looking at France to Build a Model for U.S. Health Care Delivery

The title of our project is called Looking to France to build a model for US health care delivery. The purpose of this project is to show how the French government has streamlined their health care system allowing for the entire population to be insured while making the entire process easy and affordable. This project will examine the French "vital card", supply evidence of the efficiency of their system, and explain universal insurance coverage in France.

CH-6-D

Nicholas Passafiume

Learning from the Taiwanese and Swiss Health Care System

Based off of Chapter 10 from T.R.Reid's book "Too Big To Change," the purpose of this project is to show how the Taiwanese government, which relies on a single national insurance system, and Switzerland, which relies on a basic health system for all, coupled with the ability to pay for extra insurance, can both influence the U.S. The "premium" approaches to cover every citizen within the healthcare system in Taiwan and Switzerland. The special structure of Taiwanese healthcare system guarantees controlling the budget and price of medical services effectively. The flexible cooperation with insurance companies stimulates competition and maintains income in Switzerland. This project will highlight the differences in the Taiwanese and Swiss health care systems compared to the U.S., show some supporting evidence of the efficiency of each, and examine options for the U.S. health system moving forward as we try to tackle current issues. The key lesson here from both countries is that health care systems can be changed, even in the midst of powerful commercial and political interests like that of the United States. That being said, our goal should be focused on using other countries' health systems as a template for success and change, just like Reid firmly notes in his book *Healing in America*. Another goal that deserves to be showcased, apart from T.R. Reid's work, is how the current healthcare system is affecting students (Burnsed, USNews, 2010). Using T.R. Reid's work as an example, our new objective is to also show ideas of reform in the insurance of students/youth and analyze the efficiency for the students. By doing so, we can provide comfort for the U.S. and for those students who are our nation's future.

Topics in Clinical Medicine

CM-1-D

Hailey Kwon

Investigation of the genetic interactions between the Hippo signaling pathway and Drosophila C-terminal Src kinase

The Hippo signaling pathway is involved in regulating tissue size by inhibiting cell proliferation and promoting apoptosis. Hippo signaling coordinates a timely transition from cell proliferation to cellular quiescence, and ensures proper cellular differentiation. Aberrant Hippo pathway function (due to mutations or amplification of genes, epigenetic silencing, and oncogenic transformation) is often detected in human cancers and correlates with poor prognosis. The Drosophila C-terminal Src kinase (d-Csk) is a genetic modifier of warts (wts), a tumor-suppressor gene in the Hippo pathway, and interacts with the Src oncogene. Reduction in d-Csk expression and the consequent activation of Src are frequently seen in hepatocellular and colorectal tumors. Previous studies show that d-Csk regulates cell proliferation and tissue size during development. Given the similarity in the loss-of-function phenotypes of d-Csk and wts, we have investigated the interactions of d-Csk with the Hippo pathway. We hypothesized that d-Csk regulates growth via the Hippo pathway. Two approaches were used to determine whether d-Csk requires Hippo signaling to carry out its growth regulatory functions. First, we tested if d-Csk regulates the expression of transcriptional targets of Hippo signaling, e.g., *ex-lacZ*, *fj-lacZ*, *dronc1.7kb-lacZ*, and *diap1-4.3GFP*. Second, we tested the genetic interactions between d-Csk and the genes of Hippo pathway to determine the hierarchy of gene action. Here we present our progress on establishing the genetic links between d-Csk and the Hippo signaling pathway.

CM-2-D

Nick Lanzotti

A Comparison of the Mechanisms and Relative Effectiveness of Using Either Intravenous Adenosine or Radiofrequency Catheter Ablation to Treat Atrioventricular Nodal Reentrant Tachycardia

Supraventricular Tachycardia (SVT) is a condition in which the patient presents with a highly elevated heart rate that has electrical origins above the ventricles. In the most common form of SVT, atrioventricular nodal reentrant tachycardia (AVNRT), the electrical impulses that are disrupting normal pacemaker rhythm of the heart are originating in or near the atrioventricular node. These electrical impulses cause a reentry circuit, which is when the electrical impulses of the heart travel around the heart in a loop rather than going from one end to the other and then terminating. Typically, AVNRT is treated by either an intravenous adenosine flush or a radiofrequency catheter ablation of cardiac tissue. The adenosine flush works on the pacemaker system of the heart by slowing the conduction time of the AV node. Conversely, radiofrequency catheter ablation is an invasive procedure in which muscle tissue on the heart is actually destroyed so that the pathway in the heart that is leading to the tachycardia is destroyed. Both treatments can be very successful in alleviating AVNRT, but both also have their limitations. By assessing the relative effectiveness of both treatments and the risks associated with each of them, healthcare professionals will be able to gain a more in-depth understanding of which treatment will be most beneficial to a patient while mitigating risk.

CM-3-D

Andrew Steele

Innovations in Cardiovascular Disease Treatment and Prevention

This poster will examine in detail the potential future treatments of cardiovascular diseases, such as heart failure, hypertension, atrial fibrillation and sudden cardiac arrest, whether plausible or extreme, and also how current treatments may develop into more effective cures. Topics will range from health and fitness to cell implementation and biotechnology. Furthermore, this poster will briefly assess the implementations and problems of these proposed treatments. This area of research is a hot topic, as millions of Americans suffer from some form of cardiovascular disease (about one-third). Currently, cardiovascular disease is the number one cause of death in America, and is also the largest consumer of health care expenditures, totaling \$444 billion in 2010. The Centers for Disease Control and Prevention (CDC) have estimated that 935,000 heart attacks occur each year, nearly 68 million adults have high blood pressure, and approximately 71 million adults have high cholesterol in the United States. The effects of cardiovascular disease are widespread and catastrophic, which is why new methods of treatment and prevention are needed. Research will be collected from online databases and journals as well as recently published books. What new approaches and techniques will the future of medicine hold for treating cardiovascular diseases? Onlookers of this poster will be able to have a glimpse into the future on how the most deadly cardiovascular diseases in America will be eliminated.

CM-4-W

Benjamin Bates

An Institution's Experience with Irreversible Electroporation in the Pancreas

Irreversible electroporation (IRE) is a technique in which short, high-voltage pulses are applied to tissues to permeabilize the cell membranes. As no thermal energy is created it can be used close to vital structures. Here we report our initial experience with this novel technique in a series of unresectable pancreatic cancer. We performed a retrospective review of all IRE cases performed for pancreatic cancer from July 2011 to September 2013. These patients were evaluated for peri-operative morbidity, mortality and oncologic outcome. Seven patients (4 women and 3 men) underwent IRE. One patient underwent IRE margin accentuation in combination with distal pancreatectomy. One patient was treated for a recurrence at the root of the SMA after CHT and CRT followed by 6 months of CHT after IRE. She is without evidence of disease 2 years later. Five other patients were unresectable at the time of surgery and IRE with palliative bypasses was performed. Four of these five patients received neoadjuvant CHT or CRT. The largest diameter of the masses ranged from 2.0 cm to 4.9 cm. The 30-day mortality was 0%. Median blood loss was 100 ml. Median length of stay was 8 days. Postoperative complications included gastric hematoma and gastric outlet obstruction as well as delayed return of bowel function. Our comprehensive early experience suggests that IRE for locally advanced pancreatic cancer is safe and feasible. Other small series suggest a survival benefit. A randomized trial should strongly be considered to truly understand the possible benefits.

CM-5-W

Benjamin Bates, Minia Hellan, MD, Shannon Kauffman, MD, James Ouellette, DO

Irreversible Electroporation: An Institution Experience

Irreversible electroporation (IRE) is a tumor ablation technique where short, high-voltage pulses are applied to tumors to permeabilize the cell membranes. Since no thermal energy is created, it can be used near vital structures. We report our experience in a wide array of anatomic locations and on diverse oncologic processes. We performed a retrospective review of all IRE cases performed at our institution from September 2010 to September 2013. Patients were evaluated for peri-operative morbidity, mortality, and oncologic outcome. Twenty-seven patients underwent IRE during 16 laparotomies and 12 CT guided percutaneous procedures. Anatomic locations: 9 liver, 7 pancreas, 7 pelvis, 2 retroperitoneal, 1 lung, 1 chest wall, and 1 mesentery. Lesion types: 14 metastases, 8 primary tumors, 5 recurrences, and 1 lesion not confirmed malignant. Three cases involved margin accentuation prior to resection. One treated the IVC margin of a radiofrequency ablation site. 24 procedures attempted complete ablation. Lesions ranged from 1.0 to 6.0 cm. Median hospital stay: 1 day (percutaneous treatment) and 9 days (laparotomy). 30-day mortality was 0%. Complications included muscle weakness, gastric outlet obstruction, intragastric hematoma, pancreatic fistula, small bowel obstruction, and urinary retention. Another patient experienced obstructive jaundice, portal vein thrombosis, and an IRE site abscess. Six patients developed recurrence. The median length of follow-up is 8 months. Our experience suggests that IRE is safe and feasible in a variety of situations. Several pitfalls were identified to prevent unnecessary morbidity. Our data suggests a local control benefit, but randomized studies are needed.

CM-6-W

Rebecca Beesley, Nicole Craker

Barriers to the successful prevention and management of pediatric obesity: A review of the literature

Despite international attention, pediatric obesity continues to burden healthcare. Much research has been done to identify barriers to the successful reduction of childhood overweight and obesity, however, a more condensed and accessible compilation of these barriers was lacking. The hypothesis is to identify the barriers healthcare providers perceive to the prevention and management of pediatric obesity. A review of the literature was performed in Fall of 2013 from following databases: PubMed, PsycINFO, CINAHL, ERIC, and SocIndex. Two independent reviewers selected relevant articles, developed a coding template, and extracted themes. Barriers to the prevention and management of pediatric obesity fell into 3 overarching categories with 17 individual themes. The first category addressed external factors that inhibited providers from discussing the topic. Themes included lack of (1) time; (2) reimbursement; (3) provider education; (4) community resources; (5) access to multidisciplinary care; and (6) role discrepancies. The second category focused on barriers to interpersonal communication. Themes included (1) fear of compromising patient-provider relationship; (2) sensitivity of topic; (3) overcoming cultural beliefs; (4) adverse feeding effects; and (5) conflicting advice. The last category described provider perceptions of the caregiver. Themes included (1) limited resources available to caregiver; (2) use of food as a tool; (3) caregiver denial of problem; and lack of (4) caregiver transparency; (5) caregiver motivation; and (6) caregiver knowledge. Healthcare providers perceive numerous barriers to the effective prevention and management of pediatric obesity. An elemental discrepancy exists in determining roles and responsibilities of providers when addressing pediatric obesity. Moving forward, a discussion amongst key stakeholders is necessary to develop synchronized perceptions, goals, and strategies.

CM-7-W

Withdrawn

CM-8-W

Brian Dinh, Sindhu Samba, Charles Spear

Minimally Invasive Lumbar Decompression via Fluoroscopic Guidance to Treat Spinal Stenosis

Lumbar spinal stenosis (LSS) is a painful and debilitating condition that impairs daily functioning of millions of people. Standard treatments include medical management, physical therapy, epidural steroid injections, and laminectomy. Yet, there is a subset of patients who have failed conservative treatments and are not qualified surgical candidates that are in need of pain alleviation. This case series aims to determine whether minimally invasive lumbar decompression (MILD) can be implemented to reduce pain and improve functional status of such individuals via fluoroscopic nonsurgical lumbar decompression. Methods: Ten subjects with symptomatic LSS who failed conservative therapy and demonstrated MRI-confirmed stenosis, ligamentum flavum hypertrophy, and anterior spondylolisthesis reported VAS pain scores and percentage improvement in physical function preoperatively and at 2 and 6 weeks postoperatively. Intraoperative epidurography was also performed pre and postoperatively to assess degree of decompression of stenotic area. Results: Numerical averages of VAS pain scores revealed pre-op VAS score = 8.4, post-op VAS score at 2 weeks = 3.6, post-op VAS score at 6 weeks = 3.8, perceived percentage of functional improvement at 2 and 6 weeks = 76% and 82%, respectively. Intraoperative epidurography showed a relative increase in flow within the epidural space and increased spread of contrast in the cephalic and caudal locations postoperatively. Data analysis indicates that MILD's significant improvement in pain and physical functioning as well as its limited invasiveness, sedation, hospital stay, and expense shows increasing promise as a potentially acceptable alternative for pain management of nonsurgical LSS candidates by trained physicians.

CM-9-W

Minh-Tri Nguyen

Inherited polymorphisms in the mTOR pathway, obesity, and colorectal adenomas

The mTOR pathway has been shown to regulate obesity and insulin resistance. Aberrant regulation within this pathway has also been associated with risk of cancer, particularly colorectal cancer. Here we study the association of inherited genetic variations within the mTOR pathway with risk of colorectal adenomas. We further test the hypothesis that obesity modifies this association. Lifestyle inventories and fasting blood samples were prospectively collected from 1574 patients enrolled in an ongoing screening colonoscopy-based cross sectional study. Of these, 433 were subsequently diagnosed with colorectal adenomas at their colonoscopy. 51 haplotype tagging single nucleotide polymorphisms (SNPs) within genes in the mTOR pathway were genotyped and tested for association with colorectal adenoma risk using logistic regression models. Of these, four SNPs (rs6972955 (RHEB), rs2299965 (RHEB), rs2250057 (TSC1), rs1076160 (TSC1)) were statistically significantly associated with risk of adenomas. When stratified by obese (BMI > 30) and non-obese (BMI < 30), one SNP (rs2289765 (RPTOR)) reported having a 24% increased risk in the non obese group (OR = 1.24, 95% CI = 0.87 – 1.77) but also conferred a 25% reduced risk in the obese group (OR = 0.48, Pinteraction = 0.05). In conclusion, we found four SNPs that were associated with the risk in development adenomas, but further research will be needed to replicate our findings as well as further evaluate whether these tagSNPs are representative of the causative variant.

CM-10-W

David Swanson

Iliopsoas Syndrome in Dancers

Coxa saltans refers to a constellation of diagnoses that cause snapping of the hip and is a major cause of anterior hip pain in dancers. When the internal type is accompanied by weakness or pain, it is referred to as iliopsoas syndrome. Iliopsoas syndrome is the result of repetitive active hip flexion in abduction and can be confused with other hip pathology, most commonly of labral etiology. This is the largest series reported to date of iliopsoas syndrome in the dance population, treated noninvasively. This study supports that conservative treatment with nonsteroidal anti-inflammatory medication, activity modification, and a physical therapy regimen specific to the iliopsoas should be the primary treatment for patients with iliopsoas syndrome.

CM-11-W

Seth VanZant

Assessing Multicultural Knowledge, Attitudes, Skills and Comfort: Medical Education for a Changing World

Improving health disparities is a major objective within the fields of public health and medicine. This is in part due to a dramatic demographic shift occurring in the population of the United States. For the first time in US history, it is estimated that minority groups will comprise more than half of the country's population by the year 2050. In preparation for this change, many professions have altered their approach to diversity through "Cultural Competency" training. Although it is only part of "the cure" to close the gap on health disparities, Cultural Competency has been shown to be an effective technique in health research, altering best practices in the delivery of medical care. However, the movement for requiring cultural competency training in medical education has only recently moved to the forefront. In 2002, the LCME and ACGME began to mandate cultural competency training in both graduate and undergraduate medical curriculum. Our study examines medical students' self-assessment of their cultural competency knowledge, skills, attitudes and comfort toward serving multicultural and vulnerable populations in our community. This study will identify if 4th year medical students, after four years of multicultural clinical experiences, feel their exposure to multicultural patients has altered their comfort, knowledge, skills or attitudes toward the change in patient population demographics, as well as identify whether or not students' pre-medical experiences contribute to an increased level of cultural competency.