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Dear Readers,

Welcome to the second volume of the Florida Medical Student Research Journal. Since the release of our inaugural volume one year ago, we witnessed immense political changes that reverberated across all facets of society, impacting healthcare and medicine in new and unpredictable ways. In these times of uncertainty, the principles of investigation and research not only endure, they light the way forward.

Research presented in this publication provides vital information policymakers need in order to create evidenced-based legislation. Studies such as “Factors Associated with Infant Sleeping Position in North Miami-Dade County” and “Prevalence of Traumatic Brain Injury in Children with Attention-Deficit/Hyperactivity Disorder: a Cross-Sectional Study” not only educate physicians, they also shape the actions of legislators and community leaders. As research rewards us with incredible technological advances, we must also examine and debate the controversial ethical issues that arise with such capabilities. We encourage you to consider the thoughtful perspectives regarding physician-assisted suicide and contraception presented in “Death with Dignity: Redefining What It Means to Heal” and “The Birth Control Pill is 60 Years Old!”

The Florida Medical Student Research Journal was founded on the notion that medical students are already capable of creating research worthy of publication. Facilitating academic discourse and collaboration, this journal allows students the unique opportunity to prepare for a future in academic medicine. The original concept for this journal was conceived over two years ago. Since then, we have had the privilege of joining a small cohort of similar student initiatives across the country. We look forward to enhancing the vibrant conversation among students throughout the state of Florida and the United States.

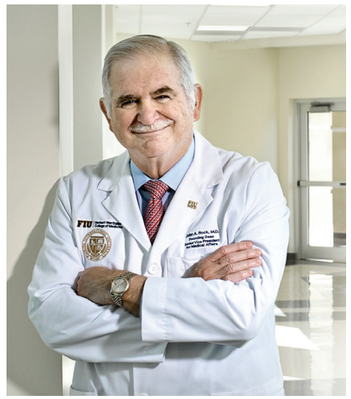
This volume came to fruition with the unconditional support and passionate backing of the Herbert Wertheim College of Medicine faculty. We are sincerely grateful to our advisory board: John A. Rock, MD, MSPH, Carolyn D. Runowicz, MD, Sheldon H. Cherry, MD, FACS, Juan M. Acuña, MD, MSc, Juan M. Lozano, MD, MSc, and Marin Gillis, PhD.

Finally, we would like to thank our outstanding Managing Editor, Matt Cannavo, our terrific Editors Leah Cohen, Jonathan Dahan, Aaron Malles, Eric Marten, Anusha Reddy, and Nicholas Schmoke and our Communications Director Andrew Newman for their dedication and hard work.”

Editors in Chief

Emily S. Andersen Roy Lipworth

LETTER FROM THE DEAN



Medical students often play a critical role in research: they pose new questions, bring new perspectives, and turn hypotheses into new standards of care, and it is a duty of medical educators to foster curiosity among medical students. Thus, I am pleased to announce the publication of the second volume of the Florida Medical Student Research Journal, established in 2015 by medical students at FIU Herbert Wertheim College of Medicine.

The accreditation standards for medical schools set forth by the Liaison Committee on Medical Education include a mandate to ensure that medical education "is conducted in an environment that fosters the intellectual challenge and spirit of inquiry appropriate to a community of scholars and provides sufficient opportunities, encouragement, and support for medical student participation in the research and other scholarly activities of its faculty." At FIU Herbert Wertheim College of Medicine, we are meeting this requirement in myriad ways, encouraging students and faculty to pursue their research interests and aspirations, providing infrastructure and mentorship, and implementing research requirements that allow students to develop competency through self-paced, faculty-guided curricula. Our students have embraced the research opportunities available to them, and this Florida Medical Student Research Journal is a reflection of their desire to publish their findings.

Along with our student editors and faculty advisors, I encourage medical students to submit their manuscripts for consideration for publication.

Sincerely,

John A. Rock, M.D.

John A. Rock, MD

Founding Dean and Senior Vice President for Health Affairs
Florida International University Herbert Wertheim College of Medicine

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1. The Florida Medical Student Research Journal only accepts submissions that have not been published previously. Manuscripts that are currently under consideration by another publication will not be simultaneously considered by the FMSRJ. If the status of a manuscript is in question, please consult the recommendations of the International Committee of Medical Journal Editors (ICMJE) regarding "Overlapping Publications" at http://www.icmje.org/recommendations/browse/publishing-and-editorial-issues/overlapping-publications.html.
2. All manuscripts will be screened for plagiarism.

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   b. Drafting the work or revising it critically for important intellectual content; AND
   c. Final approval of the version to be published; AND
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   c. Consent Forms are required ONLY for cases studies. The original consent form can be submitted with the manuscript. If it does not satisfy the FMSRJ review committee, the author may be required to submit a new consent form based on the templates found on http://research.fiu.edu/irb/pages/informed-consent-template.html

References:
1. International Committee of Medical Journal Editors http://www.icmje.org/. Recommendations for the Conduct, Reporting, Editing and Publication of Scholarly Work in Medical Journals accessed 10/1/2015. Available from: http://www.ICMJE.org.

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Prevalence of Traumatic Brain Injury in Children with Attention-Deficit/Hyperactivity Disorder: a Cross-Sectional Study

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Abstract

Introduction and Objective: Attention-deficit/hyperactivity disorder (ADHD) affects 11% of school-age children in the United States. It is reported that 4.5% of children with ADHD later sustain a non-fatal injury, compared to 2.5% of children without ADHD. By identifying groups of children at higher risk of traumatic brain injury (TBI), providers can more effectively educate patients and their families regarding preventative measures. This study analyzed whether children 2 to 17 years of age diagnosed with ADHD have a higher prevalence of TBI as compared to similar children without ADHD. We hypothesized that children with pre-existing ADHD would be more likely to sustain TBI.

Methods: We used a population-based cross-sectional study of children 2-17 years old, who participated in the 2011-2012 National Survey of Children's Health (NSCH). We excluded children with intellectual disabilities, mental retardation, cerebral palsy, epilepsy or seizure disorder, hearing impairments, or uncorrectable vision problems. NSCH responses were used to determine the presence or absence of ADHD and of TBI. We developed contingency tables and calculated adjusted and unadjusted odds ratios using logistic regression analysis, addressing potential confounding by age, gender, race/ethnicity, socioeconomic status, health insurance status, participation in sports, and comorbidities.

Results: Of the 85,637 children ages 2 to 17 initially surveyed, 6,198 were excluded based on co-existing neurodevelopmental disorders, for a total of 79,439 children. Both bivariate and adjusted analyses showed that ADHD is associated with an increased risk of TBI (OR 2.5; 95% CI 2.0-3.2; p<0.001; aOR 1.5; 95% CI 1.2-2.0; p=0.004). Children 14 to 17 years of age have an 8-fold increase in risk, as compared to those aged 2 to 5 years (OR 7.9; 95% CI 4.9-12.7; p<0.001).

Conclusions: Children with ADHD are 50% more likely to sustain a TBI as compared to children without ADHD. Additionally, the prevalence of TBI in children with ADHD increases with age.

Background

Attention-deficit/hyperactivity disorder (ADHD), as defined by the American Psychiatric Association, manifests in childhood with symptoms such as inattentiveness, hyperactivity, and impulsivity. This disease affects 11% of school-age children in the United States, making it one of the most common disorders of childhood[1]. According to a 2005 study, it is reported that 4.5% of children with ADHD later sustain a non-fatal injury, compared to 2.5% of children without ADHD. When these events include a traumatic brain injury (TBI), it can have serious impacts on the physical health and academic well-being of young people. A prior study concluded that both male children with ADHD and male children without ADHD have similar capabilities in recognizing potentially dangerous situations. However, that study also concluded that in contrast to the children without ADHD, the male subjects with ADHD were unable to identify the severity of the consequences of the risky behavior. They were also unable to adequately identify ways to prevent injury during those actions [2]. Findings such as these inspire curiosity and further investigation into what relationship may exist between children diagnosed with ADHD and their risk for head injuries.

Post-discharge instructions for mild TBI include both physical and cognitive rest. Decreasing cognitive stimulation, including absence from school for several days post-injury, allows for faster resolution of symptoms by decreasing the metabolic load of the brain. Once children are ready to "return to learn," adjustments should be made to ease the transition back into full cognitive demand. Of clinical significance, this return to baseline has been found to take an extra three days in young athletes age 13-18 with ADHD, as compared to their non-ADHD counterparts[3].

Additionally, some young people will experience prolonged symptoms. The most common long-term issues include headache, vestibular symptoms, psychological disturbances, emotional changes, cognitive impairment, and sleep disruption. Persistence of these symptoms can impact a child's social, physical, and academic performance[4].

Traumatic brain injuries can have serious impact on the academic well-being and physical health of young people. By identifying children at higher risk of TBI, providers can more effectively educate patients and their families so that preventative measures can be taken.

ORIGINAL RESEARCH

Methods

Design

This is a population-based cross-sectional study using the 2011-2012 National Survey of Children's Health (NSCH)[5]. The data are publicly available through the Data Resource Center for Child & Adolescent Health (www.childhealthdata.org). The survey was conducted nationwide to households from a list-assisted random-digit dial (RDD) sample of landline and cell phone numbers, screening for children in the household less than 18 years of age. After the initial screening, one child of the age requirement was randomly selected for a parent or guardian who knew most about the child to answer the survey questions. Interviews were conducted February 28, 2011 through June 25, 2012 on 85,637 children aged 2-17 years of age. The researchers estimated a 54.1% response rate on landline numbers and 41.2% for cell phones[6]. The data have no identifiable information for participating children. Each question analyzed from the survey was assigned a location identifier locating it in the survey (K = section number) and an individual item number (Q = question number).

Population

We used the population (n = 85,637) of children aged 2-17 years of age from the 2011-2012 NSCH study. We excluded participants that answered "yes" to any of the following conditions: K2Q60A: intellectual disability or mental retardation (n = 1,189), K2Q61A: cerebral palsy (n = 306), K2Q42A: epilepsy or seizure disorder (n = 1,133), K2Q43A: hearing problems (n = 3,182), K2Q44A: vision problems that cannot be corrected with standard glasses or contact lenses (n = 1,667). These conditions were considered potential confounding variables from previous research included in our literature review. Of the initial population, 6,198 children were excluded, for a total study sample of 79,439 children.

Variables

All variables are measured as self-reported answers to questions asked during the 2011-2012 NSCH study. All questions for independent and dependent variables are found in "Section 2: Health and Functional Status" of the survey.

We defined our independent variable, ADHD, as a response of "yes" to K2Q31A: "Has a doctor or health professional ever told you that [CHILD'S NAME] has… attention deficit disorder or attention-deficit/hyperactivity disorder?" We defined non-ADHD as a response of "no" to K2Q31A (see above).

We defined our dependent variable, TBI, as a response of "yes" to K2Q46A: "Has a doctor or health professional ever told you that

[CHILD'S NAME] has … a brain injury or concussion?" We defined non-TBI as a response of "no" to K2Q46A (see above).

Our covariates are: age at time of survey (AGE_X), gender (K1Q01: "Child's sex"), race/ethnicity (K11Q01: "Is [CHILD'S NAME] of Hispanic, Latino or Spanish origin?" and K11Q02: "Is [CHILD'S NAME] White, Black or African American, American Indian, Alaska Native, Asian, or Native Hawaiian or other Pacific Islander?"), socioeconomic status (K11Q59: "Was the total combined family income more or less than [POVERTY REFERENCE]?"), health insurance status (K3Q01: "Does [CHILD'S NAME] have any kind of health care coverage, including health insurance, prepaid plans such as HMOs, or government plans such as Medicaid?"), participation in sports (K7Q30 (ages 6-17 only): "During the past 12 months, was [CHILD'S NAME] on a sports team or did he/she take sports lessons after school or on the weekends?"), and co-morbidities ("Yes" to K2Q32A: "Has a doctor or health professional ever told you that [CHILD'S NAME] has … behavior or conduct problems?", K2Q22-K2Q23: "Does [CHILD'S NAME] have any kind of emotional, developmental, or behavioral problem for which he/she needs treatment or counseling?", K2Q30A: "Has a doctor, health care provider, teacher, or school official ever told you that [CHILD'S NAME] has a learning disability?").

In addition to the above discussed covariates found in the NSCH, we also acknowledge the following variables may also affect the outcome: definition of TBI used for diagnosis (there is not a universal definition of TBI), hospital code used for injury, severity of TBI, specific sport played (football vs. rugby vs. volleyball, etc.), history of concussion, falls, motor-vehicle collisions, helmet use in motorcyclists and bicyclists[7], and documented history of child maltreatment or abuse[8]. These variables were not included in the 2011-2012 NSCH, therefore, we cannot control for them during data analysis.

Analysis

First, we provided a descriptive analysis of our study sample, including age, gender, race and ethnicity, poverty status, and health insurance status. We further described our exposed population by their medication status, perceived severity, and age of diagnosis of ADHD. All of these variables, excluding age, are nominal and were described with percentages. Age was analyzed by quartiles (ages 2-5, 6-9, 10-13, 14-17).

To study the effects of additional independent variables on our outcome, we conducted a multivariate logistic regression controlling for confounders by determining the association of each variable and TBI risk, such as participation in sports, race/ethnicity, or gender.

Results

After our exclusion criteria were applied, our final study population comprised 79,439 children aged 2-17 years of age. Regarding the exposure of interest, 7,017 parents or guardians answered "yes" to their child having ADHD, and 72,315 answered "no." Therefore, 8.8% of our study population is composed of children with an ADHD diagnosis.

Among the children with ADHD, 4901 (69.9%) were male, 2,893 (38.6%) were ages 14-17, 6,234 (85.2%) were non-Hispanic, and 5,300 (72.1%) were white. Of the 6,752 children with ADHD that were school age (at least 6 years old), 3,651 (54%) of them participated in sports after school. Additionally, 6,779 children (96.4%) had health insurance at the time of the survey, and 2,957 children (36.3%) live >300% above the poverty level.

Among the children without ADHD, 35,540 (48.8%) were male, 19,041 (24.3%) were in the 14-17 years old group, 61,098 (75.9%) were non-Hispanic, and 11,324 (19.8%) were white. Of the 53,689 children without ADHD that were school age (at least 6 years old), 35,149 (65.5%) of them participate in sports after school. Additionally, 68,887 children (93.9%) had health insurance at the time of the survey, and 34,162 children (40.8%) live >300% above the poverty level. These values are reported in Table 1.

Regarding our outcome of interest, 2,308 parents or guardians answered "yes" to their child having a history of TBI or concussion. Of all the children surveyed with ADHD, 5.2% experienced TBI as compared to 2.1% of the children without ADHD, yielding an unadjusted odds ratio of 2.5 (95% CI 2.0-3.2).

Other factors associated with higher rates of TBI before adjustment were: age over 14 years old (OR 8.1, 95% CI 5.3-12.5), participating in after school sports (OR 2.5, 95% CI 2.0-3.1), having health insurance (OR 1.7, 95% CI 1.1-2.6), and living >300% above poverty level (OR 2.4, 95% CI 1.7-3.3). Lower rates of TBI were associated with being female (OR 0.6, 95% CI 0.5-0.7), being of Hispanic ethnicity (OR 0.4, 95% CI 0.3-0.7), or of being of non-white race (Black: OR 0.4, 95% CI 0.3-0.7; Other: OR 0.6, 95% CI 0.4-0.8). These values are reported in Table 2.

The above-mentioned variables were associated with both the exposure (ADHD) and the outcome (TBI). As they are not found in the causal pathway of ADHD → TBI, these variables are confounders. To control for these confounding variables, we performed an adjusted analysis to observe the independent effect of each of our variables on the outcome.

After creating a correlation matrix of our variables, we found that age and participation in after school sports were correlated with a value of -0.718. We therefore excluded after school sports from our adjusted analysis.

After the adjustment, the following variables no longer associated with TBI with statistical significance: Hispanic ethnicity, "other" race, health insurance status, and poverty level. The unadjusted significance was due to a confounding effect that was removed with adjustment, proving that these variables did not independently contribute to risk of TBI.

Table 1. Demographic Characteristics of Children 2 to 17 Years of Age Included in the NSCH year 2011/12 according to the presence or absence of ADHD

Characteristics	ADHD N (%)	Non-ADHD N (%)	p-value
Age at Interview			<0.001
2-5yrs	261 (5.3)	18 580 (26.8)	
6-9yrs	1508 (21.9)	17 306 (25.0)	
10-13yrs	2355 (34.2)	17 388 (23.9)	
14-17yrs	2893 (38.6)	19 041 (24.3)	
Gender			<0.001
Male	4901 (69.9)	35 540 (48.8)	
Female	2113 (30.1)	36 681 (51.2)	
Ethnicity			<0.001
Hispanic	663 (14.8)	9739 (24.1)	
Non-Hispanic	6234 (85.2)	61 098 (75.9)	
Race			<0.001
White	5300 (72.1)	51 734 (65.5)	
Black	702 (15.9)	7239 (14.7)	
Other	883 (11.9)	11 324 (19.8)	
Health Insurance			<0.001
Yes	6779 (96.4)	68 887 (93.9)	
No	223 (3.6)	3307 (6.1)	
After School Sports			<0.001
Yes	3651 (47.8)	35 149 (43.3)	
No	3101 (46.9)	18 540 (29.7)	
Not in School	261 (5.3)	18 580 (26.8)	
Poverty Level			0.015
≤100%	1126 (22.9)	9013 (20.6)	
100-200%	1311 (23.8)	11455 (22)	
200-300%	1064 (17.0)	10 881 (16.6)	
>300%	2957 (36.3)	34 162 (40.8)	

Table 2. Pediatric TBI and Non-TBI Patients 2 to 17 Years of Age by ADHD Presence and other Demographic Characteristics

Characteristics	TBI N (%)	Non-TBI N (%)	OR (95% CI)	p-value
ADHD				
Yes	379 (5.2)	6636 (94.8)	2.5 (2.0-3.2)	<0.001
No	1929 (2.1)	70 373 (97.9)	ref	
Age at Interview				
2-5yrs	132 (0.7)	18 726 (99.3)	ref	
6-9yrs	262 (1.3)	18 572 (98.7)	1.9 (1.2-3.3)	0.009
10-13yrs	558 (2.4)	19 205 (97.6)	3.7 (2.4-5.8)	<0.001
14-17yrs	1359 (5.3)	20 597 (94.8)	8.1 (5.3-12.5)	<0.001
Gender				
Male	1445 (3.1)	39 048 (97)	ref	
Female	863 (1.8)	37 958 (98.2)	0.6 (0.5-0.7)	<0.001
Ethnicity				
Hispanic	157 (1.3)	10 260 (98.7)	0.4 (0.3-0.7)	<0.001
Non-Hispanic	2116 (2.8)	65 276 (97.2)	ref	
Race				
White	1928 (2.9)	55 153 (97.1)	ref	
Black	84 (1.2)	7867 (98.8)	0.4 (0.3-0.6)	<0.001
Other	255 (1.8)	11 970 (97.5)	0.6 (0.4-0.8)	0.001
Health Insurance				
Yes	2233 (2.5)	73 503 (97.5)	1.7 (1.1-2.6)	0.019
No	73 (1.5)	3463 (98.5)	ref	
After School Sports				
Yes	1679 (4.0)	37 152 (96.0)	2.5 (2.0-3.1)	<0.001
No	500 (1.6)	21 168 (98.4)	ref	
Not in School	132 (0.7)	18 726 (99.3)	0.4 (0.3-0.6)	<0.001
Poverty Level				
≤100%	214 (1.4)	9937 (98.6)	ref	
100-200%	328 (1.9)	12 451 (98.1)	1.4 (0.9- 2.0)	0.117
200-300%	337 (2.7)	11 615 (97.3)	1.9 (1.3-2.8)	<0.001
>300%	1247 (3.3)	35 889 (96.7)	2.4 (1.7-3.3)	<0.001

ORIGINAL RESEARCH

Table 3. Adjusted and Unadjusted Odds Ratios in Pediatric TBI and Non-TBI Patients 2 to 17 Years of Age by ADHD and Other Demographic Characteristics

Characteristics	Unadjusted		Adjusted	
	OR (95% CI)	p-value	OR (95% CI)	p-value
ADHD				
Yes	2.5 (2.0-3.2)	<0.001	1.5 (1.2-2.0)	0.004
No	ref		ref	
Age at Interview				
2-5yrs	ref		ref	
6-9yrs	1.9 (1.2-3.2)	0.009	2.1 (1.3-3.6)	0.005
10-13yrs	3.7 (2.4-5.8)	<0.001	3.7 (2.3-6.1)	<0.001
14-17yrs	8.1 (5.3-12.5)	<0.001	7.9 (4.9-12.7)	<0.001
Gender				
Male	ref		ref	
Female	0.6 (0.5-0.7)	<0.001	0.6 (0.5-0.8)	<0.001
Ethnicity				
Hispanic	0.4 (0.3-0.7)	<0.001	0.6 (0.4-0.9)	0.016
Non-Hispanic	ref		ref	
Race				
White	ref		ref	
Black	0.4 (0.3-0.6)	<0.001	0.4 (0.3-0.7)	<0.001
Other	0.6 (0.4-0.8)	0.001	0.8 (0.6-1.1)	0.215
Health Insurance				
Yes	1.7 (1.1-2.6)	0.019	1.3 (0.8-2.0)	0.311
No	ref		ref	
After School Sports				
Yes	2.5 (2.0-3.1)	<0.001	-	
No	ref		-	
Not in School	0.4 (0.3-0.6)	<0.001	-	
Poverty Level				
≤100%	ref		ref	
100-200%	1.4 (0.9- 2.0)	0.117	1.1 (0.7-1.7)	0.625
200-300%	1.9 (1.3-2.8)	<0.001	1.4 (0.9-2.1)	0.114
>300%	2.4 (1.7-3.3)	<0.001	1.5 (1.04-2.3)	0.032

However, there were a number of variables that held a statistically significant association with TBI, such as: age (age 10-13 = aOR 3.7 [95% CI 2.3-6.1], age 14-17 = aOR 7.9 [95% CI 4.9-12.7]), gender (female = aOR 0.6 [95% CI 0.5-0.8]), race (black = aOR 0.4 [95% CI 0.3-0.7]), and most relevant to this analysis, diagnosis of ADHD (aOR = 1.5 [95% CI 1.2-2.0]). These values are found in Table 3.

Discussion

Children with ADHD are 50% more likely to sustain TBI than children without ADHD, which proves both statistically and clinically significant. As children get older, the likelihood that they will sustain a TBI increases considerably.

The diagnosis of ADHD is more prevalent in older children, especially in those ages 14-17. Higher prevalence in school-age children may be attributed to rate of diagnosis. The Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM-V) requires symptoms of ADHD to be present before the age of 12. Children who are hyperactive at a young age may not be referred for assessment until it begins to affect their performance and conduct in school. Males have a much higher rate of ADHD than females, which is consistent with current literature and general understanding of the disorder. Children from households with higher income and those with health insurance were more likely to be diagnosed with ADHD. Higher prevalence in these groups may be attributed to being under regular supervision of a pediatrician, increasing the likelihood of referral for assessment and diagnosis of ADHD.

Participation in sports is a strong risk factor for sustaining TBI, which is consistent with current literature analyzing TBI rates in athletes [9]. However, due to the strong correlation between participation in sports and age, we were unable to perform an adjusted analysis of the risk of sports on TBI holding all other variables constant.

The NSCH was administered to the parents of a wide variety of children, which increases the external validity of the research drawn from it. Unlike previous research, which has focused on a limited population, this analysis included children of all ages, ethnicities, and socioeconomic status, which allows the findings to be applied to the general population.

This study is limited by its design. An inherent weakness of cross-sectional research is the lack of temporality. While our data demonstrates a strong association between ADHD and TBI, we are unable to demonstrate potential causality. Another limitation is the method of data collection by the NSCH: the clinical diagnosis of both the exposure (ADHD) and the outcome (TBI) were reported by the child's parents or guardians, rather than retrieved through official medical records. The latter method would hold more credibility and minimize the recall bias that parental report potentiates. Additionally, the survey reported that most parents were unable to comment on additional disease descriptors such as severity of their child's ADHD and/or TBI, medication use for said disease, and age of diagnosis. This data limitation ultimately prevented the inclusion of potentially significant subgroup analysis.

In contrast to the cross-sectional study, a cohort study would be able to establish temporality. Future research methods could be designed either prospectively, by following children after they receive an ADHD diagnosis, or retrospectively, by reviewing medical records for dates of ADHD and TBI diagnosis. In addition, review of medical records rather than parental report provide stronger, more credible, and more thorough data. Medical record review could potentially solve the above mentioned limitation by providing the additional data needed (severity, use of medication, and age of diagnosis) for subgroup analysis. We do, however, recognize NSCH's cross-sectional study design embodies the benefit of a larger population size that would present as a limitation to our proposed cohort study design.

Conflict of Interest

The authors declare that they have no conflict of interest.

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Association of Type-2 Diabetes and In-Hospital Mortality in Puerto Rican Patients Hospitalized with Decompensated Heart Failure

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Abstract

Introduction and Objective: Heart failure is a significant cause of mortality, and type-2 diabetes is a significant risk factor for the development of heart failure. Studies have shown an association between heart failure and diabetes, suggesting that diabetes may be an independent risk factor for mortality due to heart failure. No previous studies have examined the relationship between diabetes and in-hospital mortality in patients with heart failure.

Methods: This is a secondary analysis of the Puerto Rico Cardiovascular Disease Surveillance Electronic Database from 2007, 2009, and 2011. A historical cohort, consisting of patients older than 18 years who were hospitalized for decompensated heart failure, was nested into the hospital data. The population of the study is entirely composed of patients 18 years and older who were hospitalized for decompensated heart failure. The outcome included all-cause mortality during hospital stay. Controlling for patient characteristics, we used multivariate logistic regression modeling to assess associations between the outcome and diabetic status.

Results: In the years 2007, 2009, and 2011, the Puerto Rico Cardiovascular Disease Surveillance Electronic Database observed 1818 cases of decompensated heart failure. A total of 1632 patients met the inclusion and exclusion criteria and were included in our analysis. Of these, 1031 had diabetes, representing 63.2% of the population, and 601 were nondiabetic, representing 36.8% of the population. The analysis comparing diabetes and mortality rates showed an adjusted OR of 1.3, (95%CI 0.8-2.2, p=0.32). The odds of dying in the hospital from decompensated heart failure in Puerto Rico was not significantly different between diabetics and nondiabetics.

Conclusions: We found no association between mortality and diabetic status in patients hospitalized for decompensated heart failure in Puerto Rico. There were some limitations in our study; therefore, further research in this topic is warranted.

Background

Heart failure, a significant cause of death in the United States[1] is a complex disease that has inspired scientific inquiry due to the many theories about its etiology and pathophysiology (e.g., ischemia, cardiomyopathy, viral infections, diabetes, secondary effects of drugs used for cancer treatment). Extensive research has identified type-2 diabetes as a significant and well-established risk factor for the development of heart failure and other cardiovascular diseases[2]. Due to both underlying coronary heart disease and development of cardiomyopathy, type-2 diabetic patients are twice as likely to develop congestive heart failure as non-diabetic patients, according to a review paper published by Donnelly et al in the United Kingdom in 2000[3]. According to a study by Franco et al in 2007, using data from the Framingham Heart Study, cardiovascular disease is highly prevalent in the diabetic population and is associated with decreased life expectancy[4].

A few studies have examined the relationship between diabetes and increased risk of mortality due to heart failure. One study by Flores-LeRoux et al, conducted in Spain in 2011, suggested that diabetes was an independent risk factor for mortality due to heart failure[5]. Two other studies, one conducted by Issa et al in Brazil in 2010, the other conducted by Domanski et al utilizing data from the BEST trial in the United States in 2003, have found a correlation between glycemic control and prognosis in heart failure patients[6,7]. Although a strong association between heart failure and diabetes is well established in the literature, limited information is available in the published literature on the impact of diabetes on in-hospital mortality in Puerto Rican patients diagnosed with heart failure.

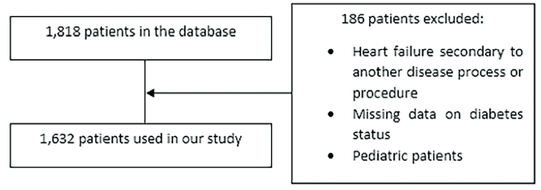
While other studies have looked at the association between heart failure and type-2 diabetes, we are looking to contribute to the scientific knowledge for the possible interaction between diabetes and in-hospital mortality in Puerto Ricans with decompensated heart failure. Given the established association between heart failure in type-2 diabetes, and considering the physiological changes (e.g., endothelial damage) that occur in pathological diabetes, we believe that diabetic patients will be at an increased risk of in-hospital mortality when compared to non-diabetic patients, making type-2 diabetes a strong predictor of in-hospital mortality in the population under study.

Methods

Research Design, Data Sources, and Study Population

We performed a non-concurrent cross-sectional study to analyze the relationship between type-2 diabetes and in-hospital mortality in Puerto Rican patients who were hospitalized with decompensated heart failure. We conducted a secondary analysis of de-identified data from the Puerto Rico Cardiovascular Disease Surveillance Electronic Database. Inclusion criteria were decompensated heart failure, greater than or equal to 18 years of age, and complete information on diabetic status and in-hospital mortality. Exclusion criteria included heart failure secondary to another illness or procedure. The database contains information, collected in the years 2007, 2009 and 2011 from 21 Puerto Rican hospitals with acute care facilities. The researchers did not participate in assembling the database. The parameters that were used to define heart failure and type 2 diabetes and in-hospital mortality are specifically outlined in the Variables section.

Figure 1. Patient Selection Flowchart



Variables: Definitions and Measurements

The exposure was split into two mutually exclusive categories (diabetic and nondiabetic). Diabetics were defined as those patients with a diagnosis of Diabetes Mellitus type 2 and those with an admission blood glucose of greater than or equal to 200. Nondiabetics were defined as all other patients who had no diagnosis of diabetes and had glucose level of less than 200. The primary outcome is mortality. Any patient who died during their hospitalization fulfill this criterion. Many patients had been readmitted, so we used the last admission in the data as the event of interest and adjusted for previous admissions. Baseline characteristics and potential confounders included age, sex, BMI category, hypertension, hyperlipidemia, cardiovascular disease, current smoking, excessive alcohol consumption, and previous admissions. Patients were classified as having cardiovascular disease if they had a diagnosis of any of the following: valvular heart disease, cardiomyopathy, peripheral heart disease, left ventricular hypertrophy, stroke, transient ischemic attack, cerebrovascular accident, previous MI, and coronary heart disease. BMI categories included: underweight, normal, overweight, and obese. All other variables were defined as per the database. We included variables which, in the literature, could affect either diabetes status or mortality.

Statistical analysis

We conducted univariate data analysis on our sample looking at frequency distribution for categorical and ordinal variables and measures of central tendency (mean) and dispersion (standard deviation (SD)) for continuous variables. To compare baseline characteristics of participants according to exposure and outcome status, we conducted a bivariate analysis, using chi-squared test for categorical variables and t-test for continuous variables. Unadjusted and adjusted odds ratios (OR) were estimated with 95% confidence intervals (CI) using binary logistic regression. A variable was treated as a confounder if it had significant associations with exposure and outcome at a p-value less than 0.15. If a variable did not meet this criteria, but was clinically relevant, it was included in the adjusted analysis. For the unadjusted and adjusted ORs, a p-value of 0.05 was considered statistically significant. We used STATA v.14 to conduct analysis.

Table 1. Characteristics of Adult Heart Failure Patients in Puerto Rico by Diabetic Status in 2007, 2009, 2011

Characteristics		Diabetes type 2		p-value
		Yes	No	
		N = 1031	N = 601	
		N (%)	N (%)	
Age (years) - Mean (SD)		69.6 (12.3)	68.7 (17.1)	0.175
Sex				0.005
	Female	502 (48.7)	249 (41.4)	
	Male	529 (51.3)	352 (58.6)	
BMI categories				< 0.001
	Underweight	17 (2.2)	33 (6.7)	
	Normal	187 (24.3)	155 (31.3)	
	Overweight	241 (31.3)	172 (34.8)	
	Obese	326 (42.3)	135 (27.3)	
BMI (kg/m^2) - Mean (SD)		29.9 (7.4)	27.3 (7.1)	<0.001
History of Hypertension				<0.001
	Yes	919 (89.2)	475 (79.0)	
	No	111 (10.8)	126 (21.0)	
History of Hyperlipidemia				<0.001
	Yes	314 (30.7)	83 (13.9)	
	No	710 (69.3)	516 (86.1)	
History of Cardiovascular Disease				0.14
	Yes	822 (82.3)	467 (79.3)	
	No	177 (17.7)	122 (20.7)	
Current Smoker				0.627
	Yes	42 (4.4)	28 (4.9)	
	No	918 (95.6)	542 (95.1)	
Excessive Alcohol Consumption				0.444
	Yes	49 (5.1)	24 (4.2)	
	No	919 (94.9)	547 (95.8)	
Previous Admission				0.038
	Yes	160 (15.5)	71 (11.8)	
	No	871 (84.5)	530 (88.2)	

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Table 2: Characteristics of Adult Heart Failure Patients in Puerto Rico by Discharge Status in 2007, 2009, 2011

Characteristics		Discharge Status		p-value[1]
		Dead N = 87 N (%)	Alive N = 1545 N (%)	
Diabetes				0.641
	Yes	57 (5.5)	974 (94.5)	
	No	30 (5.0)	571 (95.0)	
Age (years) - Mean (SD)		73.6 (13.1)	69.0 (14.3)	0.003
Sex				0.187
	Female	46 (6.1)	705 (93.9)	
	Male	41 (4.7)	840 (95.4)	
BMI categories				0.147
	Underweight	6 (12.0)	44 (88.0)	
	Normal	23 (6.7)	319 (93.3)	
	Overweight	20 (4.8)	393 (95.2)	
	Obese	23 (5.0)	438 (95.0)	
BMI (kg/m2) - Mean (SD)		27.9 (7.6)	28.9 (7.4)	0.236
History of Hypertension				0.009
	Yes	66 (4.7)	1328 (95.3)	
	No	21 (8.9)	216 (91.1)	
History of Hyperlipidemia				0.486
	Yes	24 (6.1)	373 (94.0)	
	No	63 (5.1)	1163 (94.9)	
History of Cardiovascular Disease				0.037
	Yes	78 (6.1)	1211 (94.0)	
	No	9 (3.0)	290 (97.0)	
Current Smoker				0.794[2]
	Yes	3 (4.3)	67 (95.7)	
	No	83 (5.7)	1377 (94.3)	
Excessive Alcohol Consumption				0.037
	Yes	8 (11.0)	65 (89.0)	
	No	77 (5.3)	1389 (94.8)	
Previous Admission				0.464
	Yes	10 (4.3)	221 (95.7)	
	No	77 (5.5)	1324 (94.5)	

[1]Chi2 reported unless otherwise specified
[2]Fisher's exact reported because at least 20% of cells had expected counts of < 5

Table 3: Unadjusted and Adjusted Associations between Diabetic Status and Discharge Status in Adult Heart Failure Patients in Puerto Rico in 2007, 2009, 2011

Characteristics		Unadjusted		Adjusted	
		OR (95% CI)	p-value	OR (95% CI)	p-value
Diabetes					
	Yes	1.1 (0.7-1.8)	0.642	1.3 (0.8-2.2)	0.32
	No	Reference			
Age (years) - Mean (SD)		1.03 (1.01-1.04)	0.003	1.04 (1.02-1.06)	0.001
Sex					
	Female	1.3 (0.9-2.1)	0.189	1.1 (0.7-1.8)	0.768
	Male	Reference			
BMI categories					
	Underweight	1.9 (0.7-5.0)	0.19	1.7 (0.6-4.6)	0.29
	Normal	Reference			
	Overweight	0.7 (0.4-1.3)	0.269	0.8 (0.4-1.5)	0.496
	Obese	0.7 (0.4-1.3)	0.297	1.0 (0.5-1.8)	0.947
History of Hypertension					
	Yes	0.5 (0.3-0.9)	0.01	0.5 (0.3-0.9)	0.026
	No	Reference			
History of Hyperlipidemia					
	Yes	1.2 (0.7-1.9)	0.486		
	No	Reference			
History of Cardiovascular Disease					
	Yes	2.1 (1.03-4.2)	0.041	3.5 (1.4-8.9)	0.008
	No	Reference			
Excessive Alcohol Consumption					
	Yes	2.2 (1.03-4.8)	0.042		
	No	Reference			
Previous Admission					
	Yes	0.8 (0.4-1.5)	0.466	0.9 (0.4-1.9)	0.732
	No	Reference			

Results

In the years 2007, 2009, and 2011, the Puerto Rico Cardiovascular Disease Surveillance Electronic Database observed 1818 cases of decompensated heart failure. A total of 1632 patients met the inclusion criteria (18 years or older who had decompensated heart failure and information on diabetes status and mortality) and exclusion criteria (heart failure not secondary to another illness). Of these, 1031 had diabetes, representing 63.2% of the sample.

Table 1 describes the distribution of the characteristics of the studied subjects, according to diabetes status (diabetic and nondiabetic). The two groups of diabetics and nondiabetics were significantly different in: sex, BMI, and a history of hypertension, hyperlipidemia, or readmissions. There was a larger proportion of females, obesity, hypertension, hyperlipidemia, and previous admission in diabetics. There was no statistically significant difference between diabetics and nondiabetics in: age, history of cardiovascular disease, current smoking status, and excessive alcohol consumption.

Table 2 describes the distribution of mortality according to baseline characteristics and exposure status. In total there were 87 deaths among patients included in the study. There was no statistically significant difference in mortality between the two exposure groups: diabetic and nondiabetic. The proportion of patients who died was found to be significantly higher in non-hypertensive patients and in patients with cardiovascular disease or excessive alcohol consumption. The mean age was significantly higher in those patients who died. Though not statistically significant, the proportion of underweight patients who died was about twice as high as those in any other BMI category.

Table 3 displays the unadjusted and adjusted ORs and corresponding 95% confidence intervals of the association between diabetic status (the exposure of interest) and inpatient mortality. For our analysis, we excluded hyperlipidemia, history of cardiovascular disease, alcohol use and smoking from our logistic regression. This was due to the fact that these variables were not statistically significant in their association with either the exposure or the outcome, and thus we did not consider them to be confounders. As seen in the table, being diabetic was not associated with a significant increase in the odds of dying: OR 1.1 (95%CI 0.7-1.8), and this lack of significant association persisted even after adjusting for control variables (adjusted OR 1.3, 95% CI 0.8-2.2). The odds of dying were significantly higher among patients who were older, not hypertensive, and had cardiovascular disease. There was no significant increase in the odds of dying in patients by gender, history of hyperlipidemia, or history of readmissions.

Discussion

Previous studies that investigated relationships between diabetes and mortality in patients with decompensated heart failure have looked at differences between blood glucose (greater than or less than 100), HbA1c (controlled versus uncontrolled diabetes), undiagnosed versus diagnosed diabetes, and how long the patients have been diabetic. Although these are interesting relationships to study, we were more interested in whether being diabetic affected mortality in patients with heart failure.

This study has resulted in interesting findings in diabetic patients hospitalized with acute decompensated heart failure. There was no significant difference in the odds of death between diabetics and nondiabetics in this population. The unadjusted OR is 1.1 (95% CI 0.7-1.8, p=0.642) and the adjusted OR is 1.3 (95% CI 0.8-2.2, p=0.32). We could not find a significant association between diabetes and mortality. A possible explanation could be that certain variables were not measured in our data set. Some of these include ethnicity or race, HbA1c, and specific glucose levels. These variables, if associated with the exposure or outcome, could explain why we did not see a significant difference in mortality between diabetics and nondiabetics. We also included in our exposure group both patients who were already diagnosed with diabetes and patients with a glucose greater than or equal to 200, given that mortality for both types of patients were similar in the Flores-Le Roux et al. study[5]. However, including both diagnosed diabetics and those patients with a high blood glucose might have overestimated the number of diabetic patients in our study population or created a more heterogeneous exposure group. Patients already diagnosed with diabetes may also be receiving treatment or may have a different severity of disease than patients in the undiagnosed high glucose group. Another potentially significant limitation of our study is the possibility of type II error due to limited power. In our sample population, the frequency of the primary outcome of death is relatively low. Although both the unadjusted and adjusted OR for the primary outcome was not statistically significant, the upper limit of the 95% confidence interval (95% CI 0.8-2.2) indicates that there may be a risk of death in diabetic patients that is can reach up to twice that of nondiabetic patients. It is possible that in a study with more power the data might show a statistically significant difference.

There were several interesting incidental findings in our study. The likelihood of death among the underweight group was almost double that of all other BMI categories. This was not statistically significant but is a large enough difference to be potentially clinically significant. This finding was in contrast to a 2015 study by Pinho et al. that stated the BMI paradox (where higher BMI increases survival in heart failure patients) did not exist in patients with diabetes[8]. Hypertension seemed to be a protective factor, as we found a statistically significant difference in the likelihood of death. The odds of dying among hypertensive patients was half that of non-hypertensive patients. This could be in part due to the fact that patients with hypertension are more likely to be on cardio-protective medications. Hypertensive patients may also have closer follow-up due to their chronic disease. A statistically significant difference was seen in mortality between groups with and without cardiovascular disease. In this case, there was a higher likelihood of death in those with cardiovascular disease. Not surprisingly, patients who were older in age had increased odds of mortality in our study population.

In our study population, there were several patients who had been previously admitted. We used the last recorded encounter for every patient as their event and verified if there was a previous admission. We used previous admission as another variable to consider as a possible confounder. There was a statistically significant difference in readmissions between those with and without diabetes. In the diabetic population, there was a higher proportion of readmissions (p=0.038). Readmissions were not significantly associated with mortality, however. We included it in our adjusted OR because we believed it to be clinically significant. Even after adjusting for previous admissions, the association between diabetes and mortality did not change.

Due to the amount of missing BMI data, we evaluated the difference between the groups of patients with and without BMI data and there was a statistically significant difference between the diabetic and non-diabetic groups. Due to this finding, we wanted to consider how the 601 patients with missing BMI data could have changed the OR for mortality in the diabetic group if they were underweight, normal, overweight, or obese. Including all 601 patients into each BMI group showed no significant change in the OR for mortality in the diabetic group. Therefore, we can say that the 22% missing BMI data was not affecting our results.

There were several limitations in our study. We could not include variables such as length of stay, medications, ethnicity, blood glucose level, and HbA1c which could be potential confounders. Another limitation of our study is that we used secondary data. In the database, there were various variables that were not collected for every patient. Particularly, there was a large portion (22%) of BMI data missing in our study population which we discussed above. Another potential limitation of our study is the potential issue of power, as mentioned above. We only used one of four possible diagnostic criterion for Diabetes Mellitus type 2, meaning we might have an underestimated sample of patients with diabetes in our study. Another possible limitation of our study was that the difference in size between our exposure and non-exposure groups could have skewed the results of our study, however there was good variability in regards to each variable studied in both groups and an adequate number of respondents in each group.

Our study also had many strengths. Each case of decompensated heart failure was confirmed and validated using Framingham criteria by a physician before being included in the database. The variables contained in the database were based on medical records, and were not self-recorded. The study is based in a Puerto Rican Hispanic population that has not been studied before, and may be generalizable to other Hispanic populations.

Conclusion

In summary, the data showed that, among Puerto Rican patients with heart failure, there was no significant association between mortality and diabetes. Our study was potentially limited by type

II error, and therefore future studies may demonstrate a more clear association between type 2 diabetes and mortality in heart failure patients that our study did not detect. However, there were many interesting incidental findings in our study that may warrant further investigation. These include a clinically significant association between underweight BMI and mortality in patients with diabetes. Also, we found hypertension to be a protective factor, in that patients with hypertension had a significantly lower mortality rate when compared to non-hypertensive patients.

Conflicts of Interest

We do not have any conflicts of interest and this study was not funded by any agency.

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Factors Associated with Infant Sleeping Position in North Miami-Dade County

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Abstract

Introduction and Objective: Adherence to the supine sleep position in families from Miami-Dade is almost three times lower than the national U.S. rates. The purpose of this study was to identify independent predictors associated with infant sleep position, such as income, race, satisfaction with healthcare and completion of routine well-baby checkups in this population.

Methods: Through the use of a secondary analysis of cross-sectional data collected from participants of the North Miami-Dade Benchmark Survey in 2010, a preliminary bivariate analysis was performed to determine potential confounders. Associations were analyzed by a multivariate logistic regression using SPSS.

Results: We identified 61 households with a child less than 12 months old in North Miami. Thirty-one percent of the mothers adhered to the supine sleep position. Hispanics were less likely to use the supine sleep position, and participants defined as other races were more likely to use the supine infant sleep position as compared to African Americans. Incomes of less than $30,000 were less likely to use supine position compared to participants with higher incomes. Households who were dissatisfied with health care and those who did not receive well baby check-ups were less likely to use supine sleep position. However, no differences were found to be statistically significant, possibly due to limited power.

Conclusion: A drastically low proportion of households from the North Miami-Dade area adhered with the recommended infant sleep position which could potentially lead to a higher incidence of SIDS. Further research and interventions targeted at increasing awareness and improving supine sleep position adherence in North Miami Dade are urgently needed.

Background

Sudden Infant Death Syndrome (SIDS) is the number one cause of death in infants between one and 12 months of age[1]. The pathogenesis of SIDS encompasses three main domains known as the Triple Risk Model which includes underlying vulnerability, critical developmental stage, and exogenous stressors, such as infants sleeping at prone or side sleeping position, co-sleeping, and soft bedding[2]. Infants placed in the prone sleeping position have been shown to have over a four times higher risk of developing SIDS compared to those sleeping in the supine position[3]. Thus, the American Academy of Pediatrics and the National Institute of Child Health and Human Development (NICHD) recommends the supine sleep position, leading to the launch in of the “Back to Sleep” campaign in 1991[4]. Since then, adoption of infant supine sleeping rates have progressively increased from less than 20% in 1992 to about 70% in 2007[5]. Concurrently, the rate of SIDS per live births decreased from 130/100,00 live births in 1991 to about 39/100,00 births in 2014, further supporting the protective role for the supine sleeping position for SIDS[6]. Yet, estimates of the adherence to the back to sleep positioning recommendations remain suboptimal.

Data from the Florida Pregnancy Risk Assessment Monitoring System (PRAMS) from 2004 to 2005 indicates that only about 60% of women adhered frequently to putting the infant to sleep in the recommended supine sleep position[7]. However, such rates likely overestimate the adherence rates in selected areas. For instance, the Northwest Miami-Dade County comprises a population with relatively higher proportions of younger mothers, mothers of African-American and Hispanic racial background, and mothers of families with disadvantageous socio-economic status[8-9]—all of which are characteristics previously associated with decreased odds of adherence to the recommended supine sleeping position[10-12]. Better understanding of the risk profile for SIDS in this population could aid future development of focused programs aimed at further reducing the risk of SIDS. In this context, we aimed to assess the prevalence of mothers adhering to the recommended supine sleep position in the area of Northwest Miami-Dade and to assess whether selected factors, namely maternal age, race/ethnicity, family income, well-baby check-ups, and overall satisfaction with healthcare services were associated with infant sleeping positions. Additional factors such as highest level of education attained by head of the household and infant birth weight were explored, though not included in the multivariate analysis.

ORIGINAL RESEARCH

Method

Study Sampling

We conducted a secondary exploratory analysis of cross-sectional data collected from households participating in the Northwest Miami-Dade Benchmark Survey (NMBS), a community-based participatory research project developed with the Herbert Wertheim College of Medicine from Florida International University. Briefly, the NMBS was developed with the aim of examining household and individual health/wellness indicators of randomly selected families residing in different areas of North Miami-Dade including Miami Gardens, Opa-Locka, areas of Unincorporated Miami-Dade, and referred households from Northeast Miami-Dade from October 2009 to April 2010. Further information regarding the NMBS can be found elsewhere[8]. Interviews were performed in the households. For the present study, we included households having at least one living and residing child 12 months of age or younger.

Variables

Our dependent variable was infant sleep position (categorized as either supine or non-supine) based on the most frequently used position as reported by the household member interviewed. Independent variables assessed were race/ethnicity (defined as African American, Hispanics, and other), family yearly income (less than or greater than $30,000 US dollars), satisfaction with healthcare services in the past 2 years (satisfied or not satisfied), and routine well-baby check-ups at 2, 4, or 6 months after birth (yes or no).

Analytical Plan

The distribution of household characteristics was assessed and compared according to sleep position reported. Differences were assessed using chi-squared and t-test (for categorical and continuous variables, respectively). Independent associations were analyzed using multivariate logistic regression models with SPSS software version 20[13]. Significance was considered for p-values <0.05. The present study was based on a non-identifiable database of the original North Miami-Dade Benchmark survey, thus it was considered as non-human subject research by the Florida International University Institutional Review Board.

Results

Out of the 1845 households participating at the North Miami Benchmark Survey, 90 (5%) had at least one child aged up to 12 months. Information on sleep position was available for 61 of the households (68% of eligible households). About 31% of the households reported infant using supine sleep position mainly (Table 1). When assessing the household characteristics according to the infant sleep position most commonly used, households who reported infants using mainly non-supine position were more often Hispanic (29% of those using non-supine were Hispanic compared to 21% of those using supine positions), had lower income (53% of households reporting non-supine had income < $30,000 compared to 33% of families using supine position), had lower birth weight infants (average of 114.6 oz in the supine compared to 109.6 oz in the non-supine group), and had fewer heads of households who achieved below a high school education. However, none of these differences were found to be statistically significant (Table 1).

Table 1. Characteristics of households participating in the FIU-HWCOM Benchmark Survey according to infant sleep position

		Supine N=19	Non-Supine N=42	P-value
Race/Ethnicity	African-Americans	63	62	0.69
	Hispanics	21	29	
	Other	16	9	
Income <30,000		33	53	0.24
Head of household education < High School		58	55	0.82
Number of children in household				
	≤ 2	63	55	0.54
	Mean (SD)	2.9 (1.8)	2.4 (1.2)	0.22
Satisfied with health care		95	89	
Child born preterm		7	9	0.82
Child weight at birth (oz)	≤96	22	32	0.91
	97-111	28	24	
	112-128	28	24	
	≥129	22	21	
	Mean (SD)	114.5 (19.8)	109.6 (28.1)	0.51
Well-baby check-up visit done		89	93	

Values are measured as percentage of total N in each column unless otherwise specified. ** Satisfaction with healthcare within the last 2 years

*** Regular health visit for the baby usually at 2, 4, or 6 months of age

† Under 17 years of age

††Full term defined as gestational age equal or greater than 37 weeks

Table 2: Association between selected household characteristics and infant sleep position in North Miami-Dade households

		Unadjusted model		Adjusted model 1*		Adjusted model 2**	
		OR (95% CI)	p-value	OR (95% CI)	p-value	OR (95% CI)	p-value
Race/Ethnicity	African-Americans	REF	REF	REF	REF	REF	REF
	Hispanics	0.8 (0.2-2.7)	0.63	0.6 (0.1-2.9)	0.51	0.5 (0.1-2.6)	0.40
	Other	1.6 (0.3-8.4)	0.56	1.5 (0.0-10.0)	0.69	4.79 (0.3-76.0)	0.27
Income	≤ 30,000	REF	REF	REF	REF	REF	REF
	> 30,000	0.4 (0.1-1.8)	0.25	0.4 (0.0-1.7)	0.22	0.4 (0.1-1.8)	0.22
Satisfaction with healthcare†	Satisfied	REF	REF	REF	REF	REF	REF
	Dissatisfied	0.5 (0.0-4.4)	0.50	-	-	0.9 (0.1-9.6)	0.90
Well-baby check-up††	Done	REF	REF	-	-	REF	REF
	Not done	1.5 (0.2-10.0)	0.66	-	-	0.4 (0.0-9.4)	0.60

* Analysis adjusted for race and income only

** Analysis adjusted for race, family income, satisfaction with heath care and well-baby check-up visits

† Satisfaction with healthcare within the last 2 years

†† Regular health visit for the baby usually at 2, 4, or 6 months of age

In the exploratory multivariate analysis, we found no significant independent associations between the selected characteristics explored and infant sleep position in either the unadjusted or adjusted logistic regression models (Table 2).

Discussion

Our study showed that only 30% of households in North Miami-Dade adhered to the recommended supine sleep position of their children, which is substantially lower than the national average reported 10 years ago[5]. Also, exploratory analysis of the small sample in this study failed to find evidence of an association between race/ethnicity, income, and health-care related characteristics and sleep position of infants.

The study population of the present study has a unique cultural composition and it was mostly made of households of very low income. Yet, our results show similar trends for African Americans compared to non-Hispanic and other non-African American races as shown in previous studies. African Americans have the lowest incidence of supine sleep position and highest use of prone position for their infants compared to non-African Americans[5,14]. Additionally, it also suggested that Hispanic mothers of North Miami-Dade might be even less likely than African-Americans mothers to adhere to the guidelines. However, this should be further confirmed in larger samples since this last finding is inconsistent with those of larger studies[11-15]. Also, with regards to income, our results seem to suggest that higher income groups have higher percentages of infants in the supine sleep position, though we cannot exclude the role of chance.

The present study was exploratory and key limitations should be considered. In addition to the limited sample size, information on the key variables was collected at household level and possibly from a person other than the mother of the child. Thus, misclassification of both exposures and the outcomes could have occurred.

In conclusion, we fail to find significant associations on infant sleep position in a sample of 61 mother-infant pairs from the North Miami-Dade area. Yet, the drastic lower rates of adherence to the recommend supine sleep position in this sample call for further study and possibly for urgent interventions and educational efforts to increase awareness of optimal infant sleep position to decrease the potential risk for SIDS.

Conflict of Interest:

The authors declare that they have no conflict of interest.

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Two Cases of Persistent Dropped Hallux after Intramedullary Nailing of Tibial Fractures in Pediatric Patients

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Abstract

Dropped hallux due to denervation of the extensor hallucis longus is a rare, usually transient complication seen after intramedullary nailing of the tibia and occurs in less than one percent of patients. This condition presents as either isolated extensor hallucis longus weakness or a complete loss of dorsiflexion of the hallux. The etiology is largely unknown, however it has been postulated that there could be a subclinical anterior compartment syndrome causing neuromuscular dysfunction. Though research is limited, one study suggests this phenomenon is more common in younger patients[1]. Here we review 2 cases of post-intramedullary-nailing dropped hallux in 2 male patients ages 16 and 17 which have persisted after reduction despite the absence of known risk factors or perioperative complications. More reporting of this complication will hopefully lead to better understanding and prevention.

Background

Intramedullary nailing of tibial fractures is a widely used operation for patients of all ages and is currently the preferred treatment in fractures requiring open reduction. Considered a relatively safe operation with union rates as high as 90%, it remains the standard of care for displaced tibial fractures[2].

Current literature for this procedure suggests it has a relatively low complication rate, with the majority of instances resulting from transient nerve dysfunction in the lower leg[3]. Because of the close proximity of the peroneal nerve to the fibular head, care must be taken to avoid unnecessary damage related to the operation. It is thought that this nerve damage is responsible, at least in part, for postoperative dropped hallux. Surgical traction and anterior compartment syndrome have been identified as causes of peroneal nerve damage, although in many cases in the literature no cause can be identified. A prospective study identified 8 out of 208 subjects experiencing post-operative peroneal nerve dysfunction without evidence of compartment syndrome or intraoperative difficulties[1]. All of these cases resolved by the 6-week follow-up visits. Regardless of the cause, dropped hallux represents a serious, yet largely uninvestigated complication arising from a relatively common procedure in orthopaedics.

Case 1

A 16-year-old male sustained a moderate blow to the left lower leg when he was playing soccer and was inadvertently kicked by another player. He was immediately transported by ambulance to the emergency department (ED) and arrived with a temporary splint on the left leg. Upon arrival, he was complaining of moderate to severe pain in the left leg and was not able to ambulate or bear weight. He denied any numbness or tingling in the area. Physical examination revealed swelling and deformity of the left ankle with intact skin and full sensation throughout. Compartments in his leg were soft and there was no pain with active or passive movement of the toes. Grossly, he could flex and extend the toes, although individual muscle strength was unable to be assessed due to increased discomfort. An x-ray of the lower leg showed comminuted and displaced fractures of the distal shafts of the left tibia and fibula with overriding of the fracture fragments with posterior angulation. Orthopaedic surgery was consulted and, after examination, recommended intramedullary nailing of the left tibia due to the displacement of the fracture. The family was consented and the patient was taken to the operating room.

The procedure was tolerated well with no intraoperative complications. Reduction was achieved with a Smith and Nephew tibial nail, 10 mm in diameter and a length of 330 mm. The nail was fixed with 2 screws proximally and 2 screws distally using the perfect circle technique. Blood loss was estimated at 150 mL and the patient was admitted to the floor. The following day on exam he was noted to have soft compartments and good perfusion throughout the left leg. There was decreased strength of the extensor hallucis longus and tibialis anterior on the left as expected on post-op day 1. With no signs of compartment syndrome and well controlled pain, he was discharged home with pain medication and instructions to follow up as an outpatient.

On post-op day 5 he visited the orthopaedic surgeon for routine follow up. In the clinic there was decreased strength with decreased sensation in the dorsum of the left foot over the superficial peroneal nerve distribution. There was loss of dorsiflexion of the great toe and foot, suggesting weakness of the extensor digitorum longus and extensor hallucis longus muscles. All compartments appeared soft, and there was no pain with passive motion. Despite this, he was sent directly to the ED for evaluation of possible compartment syndrome. There he had an MRI without contrast which showed minimal muscle edema consistent with fracture status but no signs of muscular necrosis or a missed compartment syndrome. The MRI also confirmed a well-placed intramedullary rod and transfixation screws.

Case 2

The next case is a 17-year-old male, brought to the ED after injuring his left leg falling off his bike. Upon initial evaluation he was complaining of severe pain in the left leg which worsened with movement and ambulation. On examination there was swelling of the left leg with tenderness to palpation. Skin was intact. Compartments were noted to be soft and equal compared to the uninjured leg. There was no neurological or vascular compromise on exam. He was able to dorsiflex and plantarflex the left foot and had grossly intact superficial peroneal, deep peroneal, and tibial nerves. At this point he was sent for an x-ray which showed a displaced fracture at the mid tibial shaft and at the junction of the proximal and middle third of the fibula with mild medial displacement. Intramedullary nailing of the tibia was recommended and the family and patient were consented.

During the procedure, a Synthes titanium tibial nail 8 mm in diameter, 260 mm in length was fixed proximally and distally with 2 locking screws, using the perfect circle technique. Multiple views showed proper placement of the hardware and anatomic reduction of the fracture site after fixation. There were no operative complications and compartments were soft during and immediately after the case. The patient was able to move his toes and had intact sensation on exam in the recovery room. He was admitted and had a 3 day recovery period. During this time, he was noted to be moving all toes with good perfusion throughout and normal sensation. He was subsequently discharged home with the left leg in a cast and instructed to follow up with the orthopedic surgeon in 1-2 weeks.

On post-op day 7, the patient presented to the clinic for follow up. He was complaining of the inability to dorsiflex the great toe and was subsequently found to have numbness over the superficial peroneal nerve distribution. There was also markedly decreased dorsiflexion of the hallux and left forefoot when compared with the right, with complete inability to flex against gravity. Minimal swelling was noted but with no pain with passive motion. The compartments again appeared soft. The patient was sent directly to the ED where an MRI was performed. As in the first case, this study revealed no signs of compartment syndrome.

Discussion

Cases of dropped hallux due to postoperative peroneal nerve dysfunction in the absence of any perioperative complications are extremely rare and hardly reported in current literature. We believe many cases may go unreported, especially because the nerve dysfunction is usually transient, resolving within 48 hours after surgery. Interestingly, a study in an English journal showed the mean age of patients affected to be 25.6 years, which was significantly younger than the mean age of patients used in their study[1]. Their sample included only adult patients and did not mention any cases in patients under 18 years of age. To date, we were unable to locate any studies in pediatric orthopaedic literature, and the incidence in this population remains largely unknown.

One of the proposed mechanisms for dropped hallux is a subclinical anterior compartment syndrome damaging the peroneal nerve. The proximity of the common peroneal nerve to the fibular head puts that area at risk for damage resulting from surgery. Anatomically, the extensor hallucis longus originates more distally in the leg, thus it would seem that isolated dropped hallux would result from injury to a distal segment of nerve. This anatomical setup could render the more distally originating extensor hallucis longus more vulnerable to subtle changes in compartment pressures and damage from a subclinical compartment syndrome. Although compartment pressures were not measured in these cases, the study by Robinson measured pressures in each case of dropped hallux, with no evidence of an increase to suggest compartment syndrome. Additionally, 3 patients in this study with neurological dysfunction underwent surgical exploration of the anterior compartment. These patients failed to show any signs of increased pressure in the explored compartments[1].

Because intramedullary nailing is a common procedure, even rare complications should represent a legitimate concern to physicians. The impact for affected patients is huge. Unforeseen dropped hallux can cause significant impairments in everyday life by interfering with gait and balance, which can lead to falls and immobility. For this condition, the work-up is nonexistent and the etiology is unknown. The high index of suspicion for compartment syndrome leads to unnecessary and expensive tests. Looking forward, more research is needed in order to better understand and prevent this rare post-operative complication. Future studies monitoring compartment pressures in the distal leg could help establish what level of compartment pressure can be tolerated before neuromuscular dysfunction sets in.

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Comparing the Loss of Reduction Rate between Synthetic Fiberglass and Plaster of Paris Casts in Pediatric Distal Forearm Fractures: a Narrative Review of the Literature

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Distal forearm fractures are one of the most common traumatic injuries experienced by children. For adequate reduction, many of these require manipulation under anesthesia and proper casting[1]. For over 100 years, Plaster of Paris (POP) has been the quintessential splinting material for fracture treatment. The material is known for its low cost and excellent molding properties. However, despite these favorable features, POP has several disadvantages such as its weight, extended drying period and messy application process[2]. In order to overcome the downside of POP, synthetic fiberglass (FG) casting was created. Introduced in the 1970s, FG provided patients with a light-weight and water-resistant cast that still maintained strong fixation. In addition, the fiberglass cast was more radiolucent and able to set at a lower temperature than POP, making it easier to use for the physician and more comfortable for the patient[3]. Despite the fact that FG casting has been in existence for nearly 50 years, minimal research exists comparing FG to POP in reduction of distal forearm fracture efficacy among the pediatric population.

To our knowledge, only one article to date examines the complication rates between POP and FG casts in the treatment of pediatric forearm fractures. Inglis et al conducted a randomized control trial in which patients were included in the study if they presented to the emergency department with a displaced fracture of the forearm (radius, ulna, or both) that required closed reduction and immobilization. After being assigned to either the FG or POP group, the patients were casted and underwent routine follow-up protocol at one and six weeks post casting. The primary outcomes measured were patient satisfaction and complications from casting[4]. After the conclusion of the study, it was determined that patient satisfaction was higher with FG casts due to a more comfortable fit, ease of use with activities of daily living, and lightweight durability[4,5]. Despite these findings, the data for loss of reduction differences between the two casts is limited. Out of the 198 patients enrolled in the study, 5 patients experienced a loss of reduction in POP casts (89 total), while 4 patients experienced a loss of reduction in FG cast (109 total)[4].

In addition to type of casting, there are several factors which contribute to optimal maintenance of reduction. One of the methods used is the Casting Index (CI). The CI is the ratio of sagittal to coronal width measured from the inside edges of the cast at the site of fracture. The optimal CI ratio is <0.8 which would result in an oval shaped cast (slightly longer coronal width than sagittal). In a study comparing CI ratios among pediatric distal forearm fractures using POP casting, a CI ratio >0.8 had a significantly higher rate of re-displacement at the 2 week follow-up[1].

Another factor that contributes to lower complication rate is cast durability. More specifically, in the study by Inglis et al, they noted lower complication rates in FG casting[4]. Unlike POP, FG casting is also water-resistant which becomes especially useful when treating the pediatric population. In a study by Cheng et al, it was found that the highest incidence of pediatric fractures was in the summer[6]. During the summer, the likelihood of sweat and participation in aquatic activities could contribute to more complications with the water intolerant POP casts.

Additionally, one of the important elements in the ability of the cast to maintain reduction is the mold-ability of the material so that a precise fit can be obtained. Proper molding is critical because if there is significant soft tissue swelling from the fracture, the cast will loosen substantially as the swelling resolves[7]. Daines et al compared POP, FG, and soft casts against each other in four different casting scenarios (clubfoot, developmental dysplasia of the hip, forearm fracture, and femur fracture) to try to identify which form of casting had the greatest mold-ability. They found that in the majority of the casting scenarios, POP was more precise than FG, and that FG was more precise than soft casts. However, the molding characteristics of the three casting materials was not significantly different for the forearm testing that they conducted[3].

In conclusion, there is a need for more data comparing POP and FG and, more specifically, the loss of reduction rates and possible contributing variables such as padding index, casting index, three-point molding index, and degree of angulation. These additional studies could help identify scenarios where one type of casting may be preferred over another for clinical use.

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The Death of General Ulysses S. Grant, a Landmark in America's Longstanding Fear of Cancer

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Cancer has affected the lives of so many Americans that it has shaped the culture of the United States. The malignant disease has permeated everything from pedigrees to politics. Unfortunately, America's second leading cause of death has a rich history that has gripped societies worldwide for thousands of years. In early times, women afflicted by malignant breast disease often kept their cancer a secret not only because the mysterious disease affected their health, but also because it had lasting psychosocial effects on their identity as women. This de-gendering shame felt by women perpetuated a silence that followed cancer wherever it went. The public discussion of cancer in daily mainstream media has been a relatively new development in the two-thousand-year history that has unfolded since Hippocrates first described the difference between malignant and benign masses[1].

The nineteenth century American public was largely afraid of cancer—a disease for which they did not yet have a precise definition, cause, or treatment. Throughout this period, Americans looked to the medical profession in search of solace from the dreadful disease. A series of developments in anesthesia and pathology during this period opened the doors to methods that would become foundational to the early surgical treatment of malignancies. In 1849, Dr. Crawford Long published his successful accounts using ether anesthesia that would later transform the world of surgery and aid in the removal of cancer[2]. By 1855, German physician Rudolf Virchow revolutionized the field of surgical pathology by correctly describing how cancer cells could arise from quiescent tissues through his ability to visualize neoplasms under a light microscope. These developments provided a microscopic definition of cancer, but physicians remained divided on the possible risk factors that predisposed people to cancer and on how to approach treatment options.

Samuel Gross, M.D., arguably the finest surgeon in the United States during the mid- nineteenth century, made some humbling conclusions regarding cancer. In his 1853 publication *On the Results of Surgical Operations in Malignant Diseases*, he admitted, "All we know, with any degree of certainty, is, that we know nothing"[3]. This update to the medical community on the clinical reality of cancer did little to add to the public's faith that the medical profession was any closer to curing the mysterious disease. Although medical advances were imminent, it would take several decades for these medical technologies to assist in the orchestration of effective surgical treatment.

Progress in cancer treatment was slow-coming. In 1881, the Boston Medical & Surgical Journal, now the New England Journal of Medicine, ran an essay contest that called for physicians nationwide to submit their ideas regarding how to cure cancer. The "Cure for Malignant Disease" call for papers received three submissions[4]. The editors were baffled by this and chose to extend the next year's deadline to allow for more participation. When this essay contest closed in 1882, the journal had received no viable submissions. They released a statement that blamed the "comparative barrenness of American researchers in the field of medical science."

During the nineteenth century, it was widely believed that the incidence of cancer was increasing, particularly neoplasms of the head and neck. Medical professionals were still largely unsure why this was the case. Cigar smoking had become widely popularized in the nineteenth century by prominent figures, including the celebrated General Ulysses S. Grant. The General consumed as many as ten cigars per day and could hardly be separated from his trademark image as a masculine warrior who enjoyed cigars. The thriving Cuban cigar industry moved onto United States soil in 1869, and by 1883 the New York Times reported that cigar-making employed almost eight thousand people who produced hand-rolled cigars from family-run operations inside their New York apartments[5]. Even still, the American public and the medical profession did not understand that a correlation existed between cigar smoking and the rise in cancer.

The hope that Americans held in medical advancements for the treatment of cancer was crushed on March 1, 1885 when the New York Times broke the news that General Grant was dying of this insidious disease. General Grant had become America's most beloved hero after gaining national stardom for his work in defeating the Confederacy as Commanding General of the Union Army in the Civil War. All details released surrounding ex-President Grant's diagnosis with esophageal epithelioma and his course of treatment reflected the fear and denial people felt around the reality of cancer. The nation sat and watched in disbelief as their strongest, most revered leader was defeated by a debilitating cancer.

Mrs. Grant sent her husband to see his physician after his persistent difficulty swallowing food never resolved, despite the General insisting that he was fine. Grant started noticing problems in the spring of 1884 but did not seek care until that summer. His personal physician, Dr. Fordyce Baker, was away in Europe and would not return to New York until the middle of October. The etiquette of the time demanded that the patient wait for his doctor to return as a sign of respect. Meanwhile, the cancer continued to grow unabated in Grant's throat for another twelve weeks. When Dr. Baker returned to the United States, he examined the General and referred him to Dr. John Hancock Douglas, the nation's foremost specialist on diseases of the throat. Dr. Douglas's focused esophageal examination showed a "dark, deep congestive hue, a scaly squamous inflammation, strongly suggestive of serious epithelial trouble." Grant boldly asked, "Is it cancer?" Dr. Douglas carefully skirted around the question by replying, "General, the disease is serious, epithelial in character, and sometimes capable of being cured"[6]. This interaction reflected the denial and avoidance shared by Americans confronted with the thought of cancer.

Slowly but surely, rumors began to trickle down that General Grant was ill with oral cancer. When confronted by the media in January 1885, Dr. Douglas deliberately lied to reporters by blaming Grant's illness on "a bothersome tooth" that had been extracted. He remarked that "the improvement in his condition since then is marvelous"[7]. Behind the scenes, Grant's health had deteriorated over the winter and his tumor began to spread from the right base of his tongue to his soft palate, palatine tonsils, and esophagus. It then metastasized to deep tissues of the neck. His physicians reconvened for a house visit to examine General Grant on February 19, 1885 and privately documented that "the disease was an epithelioma, or epithelial cancer of the malignant type, that was sure to end fatally." Dr. Douglas's colleague, a surgeon named Dr. George Shrady, concluded that the neoplasm was now too advanced to be removed. All subsequent medical care would prove to be palliative. They had no choice but to admit to one of the most influential men of the century that his disease would soon kill him. The March 1, 1885 front page headlines of the New York Times read:

SINKING INTO THE GRAVE/GEN. GRANT'S FRIENDS GIVE UP HOPE: DYING SLOWLY FROM CANCER—WORKING CALMLY ON HIS BOOK IN SPITE OF PAIN—SYMPATHY FROM EVERY SIDE[7].

The media's dramatic rhetoric played into the fears of the American public. Many people were unaccustomed to open discussion on terminal illness, and now the national spotlight was focused on the sharply declining health of an American war hero and former United States President. Sensational newspaper articles began popping up everywhere. One notable article described one night in which Grant's coughing became so severe that Dr. Shrady was summoned for "a case of life or death." Shrady rode a horse that "broke into a wild gallop and, urged by voice and whip, dashed through Madison Avenue and into 66th Street at a racing gait. Reeking with sweat, the horse was almost thrown upon its haunches by the sudden stop… in front of Gen. Grant's residence"[7]. As the news coverage grew more theatrical, it almost resembled fiction.

Disappointingly, Grant's physicians still disagreed on the cause of his cancer. Mark Twain later recalled one visit to Grant during his illness in his autobiography, writing that "the physician present was Doctor Douglas, and upon Clemens assuming that the General's trouble was probably due to smoking, … Doctor Douglas said that General Grant's affliction could not be attributed altogether to smoking, but far more to the distress of his mind, his year-long depression of spirit, the grief of his financial disaster"[8]. Grant's dentist, Dr. Frank Abbott, took a different stance, commenting that the oral cancer originated from the "rough and ragged surfaces of a broken tooth" and that "tobacco probably had little or nothing to do with the origin of the tumor"[9].

Despite the onslaught of media coverage, General Ulysses S. Grant remained poised and took his deteriorating condition in stride. He was focused on finishing his autobiography, which ultimately became a best-seller, published by his good friend Mark Twain. Grant's autobiography is still in print today as *The Personal Memoirs of Ulysses S. Grant*. His palliative care was managed by Dr. Douglas through doses of codeine, morphine, and, probably most effectively, cocaine. Grant was moved to a cabin on Mount McGregor in upstate New York to make him more comfortable in a dryer, cooler climate. Ulysses S. Grant, a man who was probably more comfortable on a horse than in the White House, died on July 23, 1885. Dr. Douglas was greatly affected emotionally by the death of Grant, who he had known personally for over twenty years.

Americans became more keenly aware than ever of the sobering reality that cancer does not discriminate and can kill anybody, even "Unconditional Surrender" Grant.

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Bicycle Helmets in Miami Dade County: a Crash Course in a Public Health Crisis

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Abstract

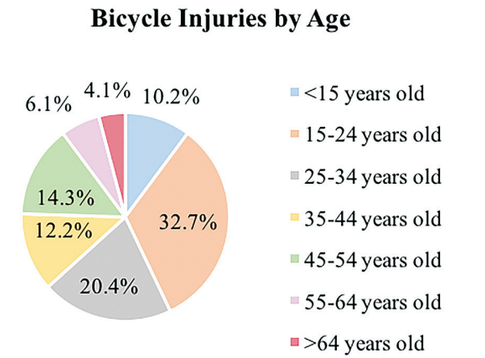
In 2013, bicycle accidents accounted for approximately 494,000 emergency room visits and 900 fatalities in the United States. In Miami-Dade County, there were 9.1 hospitalizations due to bicycle accidents for every 100,000 people. Bicycle accidents are a common cause of traumatic brain injury and hospitalization, costing over $6 billion a year in healthcare costs and loss of work. Helmets have been proven to significantly decrease the rate of traumatic brain injury following a bicycle accident. This paper seeks to identify possible solutions to increase helmet use by children aged 17 and younger in Miami-Dade County. Community-level public health interventions and "common-sense" legislation have been proven to increase the levels of helmet use. Specific interventions for Miami-Dade County are suggested as a three-pronged approach of: 1) passing helmet use legislation 2) community level education program 3) a helmet distribution program to increase ownership and use.

Background

In 2013, bicycle accidents accounted for approximately 494,000 emergency room visits and 900 fatalities in the United States[1]. In Miami-Dade County in 2014, there were 11.2 hospitalizations due to bicycle accidents for every 100,000 people[2]. While without comparison this figure may appear small, it is higher than the number of people hospitalized due to assault with a firearm in Miami Dade County[2]. Over 160,000 people rely on bicycles for their daily commute, and the rates of bicycle commuting are unequally distributed, placing a burden on the lower income neighborhoods in Miami-Dade County[3]. In the neighborhood of Northeast Miami for example, it is estimated that between 1.6-2.0% of the population relies on bicycles to get to and from work. This is more than two and a half times the rate of 0.62% for the rest of Miami Dade County[3]. While no data exists to validate this claim, it is fair to assume that these areas of higher bicycle commuters will bear an unequal burden of bicycle accidents.

The use of bicycle helmets for those commuting is the not the only concern; children and young adults aged 5 to 24 accounted for approximately 41% of all bicycle-related injuries in the United States in 2013 (Figure 1)[4]. While data reporting the use of bicycles among Miami's youth is unavailable, it is an understandable concern of parents. Nationally, data shows that African-American children and those insured through Medicaid are less likely to use bicycle helmets than any of their peers[5]. Traumatic head injuries at any age are of huge concern, but when they happen at a younger age they have a greater impact on the health and potential future earnings of the individual.

Figure 1. Percent of population injured in bicycle accidents by age group.



The CDC estimates that more than $1.4 billion was spent in 2013 for the treatment and immediate release of patients suffering from a bicycle accident[6]. When patients required an extended hospital stay and the costs were adjusted for work time lost, that figure drastically increased to about $6 billion.

Multiple studies have shown that bicycle helmets work with satisfactory results to reduce the number and severity of head injuries in bicycle accidents. A study on Glasgow coma scales, a rating system for coma and brain injury with a maximum of 15 and minimum of 3, following bicycle accidents found that

cyclists wearing helmets had a Glasgow Coma Score (GCS) of 15 upon admission—a higher score than their non-helmeted counterparts[8]. Additionally, helmeted cyclists were 72% less likely to sustain a traumatic brain injury than their non-helmeted counterparts.

Helmets are a relatively inexpensive and simple way to prevent the most serious and expensive injuries associated with bicycling. Efforts to increase helmet use among riders and to develop good helmet practices in children is essential to engraining a culture of safety within today's bicycle riding youth[8].

Interventions

While legislation is an effective method for ensuring the use of helmets[9], population-based methods targeting children are also highly effective, especially when combined with a subsidized or free helmet program[10]. Programs targeting bicycle skills rather than helmet use do not reduce the number of bicycle related injuries[11], suggesting the need for a three-pronged approach of legislation, population-based helmet use intervention, and helmet distribution to increasing helmet use and decrease preventable bicycle injury.

When measured in terms of helmet use or reduction of head injuries and mortality rates, a significant positive outcome was almost always seen after implementation of legislation. Additionally, there is little to no evidence to support the often suggested theory that helmet legislation acts to reduce the numbers of cyclists, indicating that societal impacts of helmet-use legislation are predominantly beneficial[9].

The cost of a helmet could pose a barrier for groups of lower socioeconomic status, especially if the legislative program is enacted without any free or subsidized helmet program. Interestingly, a prospective study found that legislation actually had the greatest effect in low- and middle-income areas as opposed to high-income areas. After passage of legislation, it was found that, in low- and middle-income areas, helmet use increased by 28% and 29%, respectively, while helmet use increased by only 4% in high-income areas (Figure 2). It is important to note that in low-income areas, helmet use was very low before legislation was passed (at 33%) but higher in middle- and high-income areas (50% and 77%, respectively)[12]. The findings suggest that legislation and the possibility of a fine may serve as a lynchpin for children and families to begin using helmets.

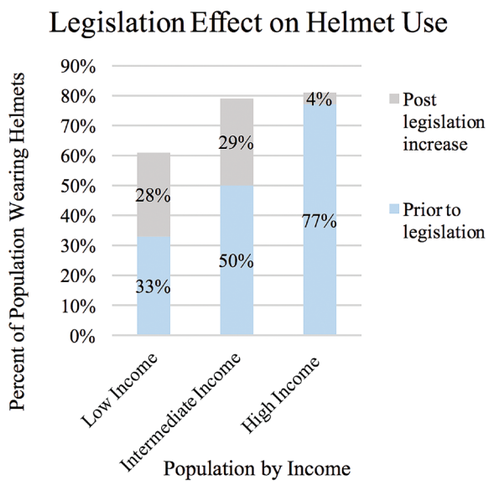


Figure 2. Prior to passage of legislation in a Toronto suburb, helmet use was 33%, 50%, and 77% in low, intermediate, and high income areas, respectively. After passage of legislation, helmet use increased by 28%, 29%, and 4%, respectively.

While legislation is a good method for providing a punitive system for encouraging helmet use, programs that focus on education and the benefits of helmets are also remarkably effective in increasing helmet use in children. Community-based education programs are highly successful at increasing both observed and reported helmet use[11]. The majority of these programs focus on benefits, proper use, and behavioral contracts signed by the children. Additionally, when these community-based methods were combined with a free helmet program, the rates of reported use and ownership, as well as observed use, increased significantly. Other types of education and interventions took place in schools or health care settings. These two settings, while showing significant increases in helmet use, had less of an effect on the rates of use when compared with the community-based programs[11]. School-based programs may not be as effective in comparison because they only target children, not parents. This only serves to educate the children about the importance of helmet use and may not result in full buy-in and support by the parents. On the other hand, the delivery of helmet education in a healthcare setting may be less effective in comparison with the community-based method because the parents and children are distracted by the circumstances that brought them to the healthcare setting. Interestingly, interventions of children under 12 appeared to result in better rates of helmet use as opposed to interventions targeting all children under 18[11].

Knowing what works to increase helmet use and decrease bicycle-related morbidity and mortality is just as important as knowing what doesn't work. Non-legislative interventions found a very modest effect if the intervention was an "education only" intervention that did not provide a free helmet [9]. Additionally, implementation of bicycle-skills courses found that, while there was a significant increase in the skills rating of the participants after the course, this increased skill did not translate to fewer accidents or injuries[11]. This would indicate that bicycle related injuries are due to the environment (including motor vehicles), not the bicyclists. While these skills are important, they do little to help prevent injury when compared with a helmet.

Population-based interventions that focus on education about the proper use of helmets combined with either a subsidized or free helmet are proven to increase the understanding and proper use of helmets among children under 18[11]. Considering that children covered by Medicaid are less likely to use a helmet than their peers who have private insurance, it seems prudent to focus the interventions in the areas of Miami-Dade that have the highest rates of children covered by Medicaid. While school-based programs will effectively reach those of school age, it has been shown that these programs, while successful, have marginal benefits when compared to other types of community-based interventions. Additionally, the adoption of a common-sense helmet law requiring all children under 18 years old has been proven to increase observed helmet use[9]. By analyzing the data regarding helmet use and interventions, one can come up with a simple, "common-sense" law to engage the community to increase helmet use and to get the support of Miami-Dade County and the city of Miami. This two-pronged intervention involves engaging the public and increasing public support for helmet use while also engaging the city legislature to adopt a "common-sense" helmet use law.

Miami-Dade County currently has no required helmet use laws for children under 18. Adoption of a "common-sense" law should be supported by law makers, though some opposition can be expected from those who strongly oppose public government intervention in all its forms. In other cities that have adopted a helmet-use law, critics have stated that this will cause a shift away from bicycle use. However, this statement was explicitly addressed and debunked by a meta-analysis that investigated the effectiveness of helmet use legislation[9].

Engaging the public is equally important, if not more so, than passing a "common-sense" law. With community support, parents are better equipped to impress upon their children the necessity and benefits of helmets. Community based interventions require mobilizing community assets and leaders. The first steps should involve direct contact with community leaders to discuss the importance of helmet use. Discussions should be individualized for each community leader to ensure complete buy-in. Furthermore, there are grants for free-helmet programs from organizations such as Safe Kids USA, Elks, Masons, Oddfellows, and Rotary USA. Church groups and other religious organizations can institute a donation system for purchasing helmets for children. Another possible route could involve directly reaching out to helmet manufacturers to inquire about charitable giving.

After securing funding for helmets, the educational intervention needs to take place. This requires having experts in the field (medical doctors, nurses, physician assistants, among others) partner with community leaders to deliver the message regarding the necessity and benefits of helmet use. This needs to happen at a micro-level at churches, barber shops, beauty salons, and other gathering spaces. Small-group interactions allow for questions and tailored explanations. Other less-traditional approaches can include organizing a "Community Science Day" for grade-school children, offering a unique forum toe blend science and helmet use education. Specifically, a "Brain Day" can involve presentations about how helmets work, creating an educational experience about the physics of helmets. This allows children to ask questions and gain a better understanding of the helmets and their function, culminating in them receiving their own helmet at the end of the day.

Increasing helmet use will not happen overnight. Legislation regarding helmet use, while a seemingly common-sense safety measure, will face opposition simply because it represents a change in the status quo, and inertia is a difficult force to overcome. In today's hyper-partisan political climate, gaining bipartisan support for any measure, no matter how common-sense, will be difficult. The community-based intervention is a fantastic method to get out and educate community members about the importance of helmets. Ensuring that this is done on a level that allows for exchange of questions and information; as well as the support from healthcare professionals, will strengthen the validity and importance of the issue. Finally, involving children is absolutely essential as they are ultimately responsible for their actions.

Conflict of Interest

None of the authors nor any member of his or her immediate family has funding or commercial associations (eg. consultancies, stock ownership, equity interest, patent/licensing arrangements, etc.) that may pose a conflict of interest in connection with the submitted article.

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The Birth Control Pill is 60 Years Old!

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Imagine our country without the birth control pill. What would the workforce look like? What direction might the abortion debate have taken? Would we have had a woman run for President? The "Pill" has enabled many societal changes: surveys show nearly 80% of college students are sexually active[1], the average birth rate in the United States is 1.86 children per woman (half of what it was in 1960[2]), and the average age of first time mothers continues to rise[3].

The 60th anniversary of the birth control pill marks an occasion to explore the effects of the Pill on our society[4]. Oral contraception is not only one of the most profound medical advances of the last century, it is also the foundation on which a major cultural and social transformation have been built. The sexual revolution, the movement of women into the workforce, the paradigm shift in the arena of women's health, and the landmark Roe v. Wade ruling legalizing abortion in this country can all be linked back to that tiny pill called Enovid. Enovid was a medication originally approved as a treatment for menstrual problems, but ended up launching a revolution. Helping millions of women avoid unplanned pregnancies, oral contraception has clearly separated sexual intercourse from childbearing.

In 1957, when the FDA approved the use of the Pill for menstrual disorders, a large number of women suddenly reported severe menstrual disorders to their physicians[4]. In 1960, the Pill was approved for contraceptive use. By 1965, 6.5 million American women were on the Pill, making it the most utilized form of birth control in the United States[4].

The approval of Enovid, the first birth control pill, gave women complete control over their reproductive rights for the first time. Enovid provided women with a reliable, relatively cheap contraceptive that could be administered privately, free of social stigma and without anyone else's knowledge. In many ways, the Pill fueled the modern feminist movement, and it highlighted the first of many amazing parallels between medical advances and feminism. For example, amniocentesis and chorionic villus sampling further shifted cultural perception in favor of childbearing later in life. For the first time, women could discover whether their fetus had a chromosomal abnormality associated with advanced maternal age. This enabled them to delay childbearing yet also have greater certainty regarding the outcome of their pregnancies[5]. Even newer techniques have allowed contemporary medicine to now analyze fetal DNA from maternal blood stream as early as the first trimester[6].

The growth of assisted reproductive techniques (ARTs) such as sperm donation, artificial insemination, and in-vitro fertilization pushed the envelope of reproductive choice even further, enabling women to carry biological children without sexual intercourse. With the help of donor sperm, a woman can now choose to have a child biologically related to her[7]. ARTs changed the paradigm of the "older mother." Fertility preservation provided women with more opportunities to postpone childbearing without limiting their ability to give birth to their own genetic children[8]. With the help of donor eggs, women with premature ovarian failure and postmenopausal women can give birth[9]. ARTs brought the issues of cloning, stem cell research and embryonic selection to the forefront of scientific, social and religious debate, the scope of which is beyond this editorial.

The ability of women to postpone childbearing and focus on their career first led to major changes. For instance, it allowed for more women to enter the medical profession. Up until the 1970s, less than 10% of practicing obstetrician-gynecologists were women[10]. In 2014, over 80% of OB/GYN residents were women[11]. The feminization of women's healthcare has encouraged more research on diseases affecting women such as reproductive cancers, osteoporosis, and menopause. The results of these studies, including the Nurses' Health Study and the Women's Health Initiative, have transformed our understanding of women's health and the development of medications and therapies in woman's health. The explosion of women's interest in their health has led to a concomitant barrage of books, magazines, web sites, and other media devoted solely to this topic.

As women became more educated about their bodies and their health, they grew more assertive in their healthcare. With the publication of the eponymous tome *Our Bodies, Ourselves* in 1973, women became more comfortable advocating for their healthcare[12]. Women felt more empowered; they held gatherings to learn about their sexual organs and about pleasure in sexual intercourse, created the natural childbirth movement, and demanded funding and research of female cancers. Furthermore, they disseminated knowledge of reproductive rights through political rallies, women's health clinics, and writings.

Many women consider access to safe, affordable, legal, and reliable birth control as the best thing that ever happened to them, giving them clearer skin, more comfortable periods, a reduced risk for ovarian and endometrial cancer, and the freedom of family planning[13]. "All this from one tiny Pill - Happy 60th Birthday!"

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Death with Dignity: Redefining What It Means to Heal

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Physicians heal. All physicians recite an oath to heal all individuals, whether children, drug addicts, or even warzone enemies. In 2014, however, when Brittany Maynard publicly announced her decision to die by medication prescribed to her by her physician rather than suffer from end-stage glioblastoma, it reignited the conversation concerning physicians' roles[1]. After two surgery attempts with a recurrence of cancer, she moved to Oregon and chose the exact terms by which she would pass away, including when and where it would happen and with who she would be surrounded. Her decisions became her legacy as a right-to-die activist, garnering numerous supporters and detractors for her actions[2,3]. If she was able to do this legally, then what exactly is a physician's role in healing, and do physicians have a duty beyond curing diseases?

As of now, five states (Oregon, Vermont, Washington, California, and Colorado) have passed Death With Dignity Acts (DWDA), which allow mentally competent patients who are terminally ill with an expected lifespan of six months or less to use physician-assisted services to determine their circumstances of death[4]. This is highly controversial as it redefines the role of a physician from strictly a healer to an arbiter of life or death. The consequences of these acts are potentially damaging to the perception of physicians as healers and could undermine society's trust in physicians[5]. For patients with terminal illnesses, this law provides an alternative to available options, namely hospice care, in which quality of life and relief of debilitating symptoms are emphasized rather than aggressive treatment. While physicians have traditionally allowed patients to forego treatments or choose alternative medicine to respect patient autonomy, the DWDA laws allow physicians the unprecedented power to be proactive in these cases.

More generally speaking, the traditional role of the physician as no more than an uncompromising fighter of illnesses often clashes with respect for patient autonomy. Culture, family values, and morals often go against traditional assumptions concerning what it means to practice medicine. Appropriately, modern healthcare—as taught in medical school and beyond—has already moved past the view that "physicians are only curers of disease" towards a model of shared decision making. In this viewpoint, physicians regularly take into consideration a patient's emotional, spiritual, and psychosocial influences when guiding a patient through their diagnosis to not only cure but heal holistically. In addition, patients already have the right to choose or refuse treatment and pursue alternative medicine. They pursue elective treatments such as cosmetic surgery, abortion, and organ donation which are traditionally outside the realm of "healing" but are essentially medical in nature. One choice many terminally ill patients are not privileged to is the right to end their lives with the help of their doctor when death is imminent. Instead, many of these patients simply trudge along, often prolonging their suffering and becoming increasingly reliant on others for support, losing any control over their quality of life. Nonetheless, to what extent should it be permissible for physicians to be involved in how patients choose to die? Here, one could argue that there is a conflict between healing and granting patients total autonomy over the terms of their lives and deaths. But is there really a conflict here?

Oregon was the first state to implement the DWDA for terminally ill patients in 1997. Benefactors of this legislature were mostly white and more likely to have graduated from college. Almost 70% were over 65 years old, 90% died at home, in contrast to the general population, and 92% were enrolled in hospice care[6]. This data implies that these patients were likely well-educated and well-informed about their treatment options beyond aggressive therapy of their terminal illness. Of the 218 people who were prescribed the medication in 2015, only 132 actually took it (57.3%)[7]. This could mean that what patients really wanted was a sense of control as the disease progressed. This data supports other studies that show that end-of-life care patients tend to prioritize dignity, autonomy, and identity near the end of their lives.

The question remains: is it the physician's job to support this desire for control? Nobody would deny that shared-decision making and informed consent are part of any medical decision. Control comes in many forms, including opting for supportive care, aggressive care, or even choosing not to be informed about one's own diagnosis. In that sense, the framework already exists to help physicians and patients choose a model of care that benefits their own personal priorities and values. DWDA simply expands on that paradigm to include another option for patients with less than six months to live. Rather than viewing the physician as a passive or proactive instigator, the physician's true role is to keep an ongoing conversation about available options while providing professional assessment towards a shared decision.

What then is a physician? A physician could choose to be someone who only reverses ongoing disease processes and prevents sick patients from getting worse. A more cynical approach would say physicians merely delay the inevitable. Perhaps the profession should not solely be about prolonging life but rather about empowering patients to choose their own paths in accordance with their personal sense of dignity. Acknowledging patients' desires to face their illness allows for a stronger physician-patient relationship and empowers both patients and physicians. A physician's role is certainly that of a healer, but perhaps the idea of healing is one that should incorporate not only treatment of disease processes, but also care of patients such as Brittany Maynard in ways that respect their own values and goals.

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Proceedings of the Third Annual FIU Herbert Wertheim College of Medicine Research Symposium & Awards Ceremony

Thursday, April 27, 2017 Academic Health Center 4

TIME	EVENT	LOCATION
8:30 a.m.	**Registration Opens**	Lobby
9:00 a.m.	**AOA Keynote Speaker** Kevin Soden, MD, MPH	Room 101
10:00 a.m.	**Welcome Remarks & Awards Ceremony** Robert L. Hernandez, Jr., MD *Executive Associate Dean for Student Affairs*	Room 101
11:30 a.m.	**Luncheon**	Lobby
12:30 p.m.	**Poster Presentations I**	Lobby
2:00 p.m.	**Oral Presentations I**	Room 101
4:30 p.m.	**Adjourn**	

Friday, April 28, 2017 Academic Health Center 4

TIME	EVENT	LOCATION
8:00 a.m.	**Registration Opens**	Lobby
8:25 a.m.	**Opening Remarks** John A. Rock, MD, MSPH *Founding Dean and Senior Vice President for Health Affairs*	Room 101
8:30 a.m.	**Oral Presentations II**	Room 101
10:00 a.m.	**Poster Presentations II**	Lobby
11:30 a.m.	**Lunch Break**	
12:30 p.m.	**Oral Presentations III**	Room 101
2:00 p.m.	**Break**	Lobby
2:15 p.m.	**Oral Presentations IV**	Room 101
3:45 p.m.	**Poster Presentations III**	Room 101
4:45 p.m.	**Oral Presentations V**	Room 101
6:15 p.m.	**Closing Remarks & Research Symposium Awards** Juan M. Acuña, MD, MSc *Chair, Department of Medical and Population Health Sciences Research*	Room 101

A Very Special Thank You

On behalf of the directors and participants of the Third Annual FIU Herbert Wertheim College of Medicine Research Symposium and the Department of Medical and Population Health Sciences Research, we would like to extend a warm thank you to the amazing judges and reviewers who have worked tirelessly to support and recognize FIU research. We are tremendously appreciative of their selfless involvement in this process and are particularly grateful for their help in turning the Inaugural Research Symposium Awards from a dream into a reality.

This symposium would not have been possible if it were not for their generosity with their time and expertise. They completed more than 320 abstract reviews and were tasked with judging the quality of more than 70 final presentations. Because of their efforts and support, this year's symposium has proven to be the most successful to date.

Working together, we are preparing students for their future careers and driving FIU research to new heights. We hope that their generosity will inspire others to follow in their footsteps and volunteer their time and effort to support our FIU student researchers and the Herbert Wertheim College of Medicine community at large. Please join us once again in thanking these incredible women and men.

Poster Presentations I

Thursday, April 27, 2017
12:30 p.m. - 2:00 p.m.

AUTHORS	TITLE	FIELD	ABSTRACT ID
Cameron Frederick, Mythili Penugonda, Edward Suh	Association between marital status and in-hospital mortality in acute myocardial infarction patients in Puerto Rico	Cardiology	P1
Michelle Moore Padilla, Guillermo Ramirez, Lena Sabih	Association of serum BNP at admission and in-hospital complications in acute decompensated heart failure patients in Puerto Rico	Cardiology	P2
Ephraim Mansour, Grethel Miro, Wendy Tamayo	Atypical symptom presentations of AMI as a factor for in-hospital mortality	Cardiology	P3
Daniel Lumpuy, Adeeb Rohani	The effect of type II diabetes on in-hospitality mortality in patients with decompensated heart failure	Cardiology	P4
Jonathan Moore, Ailyn Rivero, Claudia Santiesteban	Association between gender and prehospital delay time for incident acute myocardial infarction (AMI) in Puerto Rican adults	Cardiology	P5
Christopher Brown, Juan Lopez, Benjamin Sirutis	A comparative analysis of stroke in Haitian and non-Hatian populations of South Florida	Neurology	P6
Derek Gonzalez, George Skopis, Sean McIntyre	CT vs. MRI in the diagnosis of acute stroke impact in-hospital mortality among Puerto Rican patients	Neurology	P7
Shruthi Narasimha, Jessica Telleria, Christina Yuen	Association between marital status and short-term mortality in Puerto Rican adults hospitalized with an acute stroke in 2007, 2009 and 2011	Neurology	P8
Li Che, Uday Malhotra	The association of smoking and survival time in adult patients diagnosed with advanced stage hepatocellular carcinoma within Florida	Oncology	P9
Nicole A. Colwell	Effects of location and other clinical features on survival in gliosarcoma patients	Oncology	P10
Christopher Reynolds, Joan C. Delto, David Paulucci, Corey S. Weinstein, Ketan Badani, Daniel Eun, Ronney Abaza, James Porter, Akshay Bhandari, Ashok Hemal	Comparison of perioperative and functional outcomes of robotic partial nephrectomy for cT1a versus cT1b renal masses	Surgery	P11
Joseph Barbera, Michael Helbig, Alberto Monreal, Corey Weinstein, Jaime Rodriguez, Tanya Cohn, Julie Lamoureux	Effect of surgical timing on postoperative outcomes in patients with acute appendicitis	Surgery	P12
Alberto J. Monreal, Joseph Barbera, Michael Helbig, Corey Weinstein, Juan C. Gonzalez, Julie Lamoureux, Tanya Cohn, Juan Verdeja, Jaime Rodriguez	Evaluating diagnostic imaging practices prior to gallbladder surgery in a community hospital	Surgery	P13
Chalee Yimyam, Jorge Nasr	Case Study: Operative treatment of symptomatic osteochondral lesion of the tibial plafond	Orthopedics	P14
Mohamed Sayed Kamel Sayed, Timothy Daniel Holley, PeiYao Jin, William J. Feuer, Wei Shi, Richard K. Lee	Diode laser cyclophotocoagulation outcomes: Comparison of micropulse and titrated "pop" techniques	Ophthamology	P15
Jason A. Alvarez, Mohammad S. Yazdanie, Wai T. Wong, Darby J. Thompson, Rachel Lipson, Henry E. Wiley, Emily Y. Chew, Frederick L. Ferris, Catherine A. Cukras	Longitudinal study of dark adaptation as a functional outcome measure for age-related macular degeneration	Ophthamology	P16

Oral Presentations I

Thursday, April 27, 2017
2:00 p.m. - 4:30 p.m.

AUTHORS	TITLE	FIELD	ABSTRACT ID
Andrew Bohn, Alexander Braley	The association between race and survival time in patients with glioblastoma multiforme	Oncology	O1
Giselle Prado, Peter D'Amore, Adam Tagliero	Trends in stage of diagnosis of melanoma from 2001-2011	Oncology	O2
Tiyash Parira, Gloria Figueroa, Alejandra Laverde, Marisela Agudelo	A novel epigenetic diagnostic tool for alcohol use disorders: Detection of post-translational modifications by single cell imaging flow cytometry	Basic Sciences	O3
Jessica Lapierre, Myosotys Rodriguez, Nazira El-Hage	Autophagy is cytoprotective in neurons and necessary against Tat and morphin-induced neuronal toxicity in autophagy deficient mouse	Basic Sciences	O4

Oral Presentations II

Friday, April 28, 2017
8:30 a.m. - 10:00 a.m.

AUTHORS	TITLE	FIELD	ABSTRACT ID
Zachary Demko, Aaron Arroyave, Daniel Lewis	Transgender identity as an independent risk factor for lacking a personal physician	Health Disparities	O5
Diana Abreu Molnar, Chloe Edinger, Vanessa Freeman	Association between sexual orientation and suicidal ideation in US high school students: A secondary analysis of the 2015 youth behavioral risk survey	Health Disparities	O6
Bhupaul Ramsuchit, Brenda Rieger, Valerie Polcz	Hispanic ethnicity and hepatobiliary cancer stage at diagnosis	Health Disparities	O7
Alice Kim, Peter Ashman	Racial disparities in cancer related mortality in patients with squamous cell carcinoma of the esophagus in the US	Health Disparities	O8
Neeraja Chandrasekaran, Vivek Singh, Mabel Marotta, Sabrina Taldone, Jaclyn Kwal, Tulay Koru-Sengul, Christine Curry	Socioeconomic differences in sources of information on the internet regarding Zika during pregnancy	Public Health	O9

Poster Presentations II

Friday, April 28, 2017
10:00 a.m. - 11:30 a.m.

AUTHORS	TITLE	FIELD	ABSTRACT ID
Allyson Gutstein, Kristyn Scheffel, Linda Yue	Predictive factors affecting HPV vaccination in adolescent females aged 12-17	Health Disparities	P17
Sarah Altajar, Rebekka Geldbart, Kyla Wilkinson	The association between gender and priority of admission in Florida stroke patients	Health Disparities	P18
Geoffrey Collett, Prashanth Shanmugham, Logan Stark	Is the effect of parental physical activity on pediatric obesity modified by living in a rural area? A cross-sectional study	Health Disparities	P19
Brynn Donnelly, Chriselle Ebreo, Sara Kim	The association between health insurance status and mammogram screening in Northwest Miami-Dade households	Health Disparities	P20
Mary O'Meara, Kaitlin Ross, Frederick Anderson, Michael Paez, David Brown	Breathing better: Asthma quality improvement on the NeighborhoodHelp mobile health center	Health Disparities	P21
Victor N. Becerra, Michael Castillo, Michael Soler	Cannabis use and obesity in U.S. adolescents	Public Health	P22
Michael DesRosier, Semir Karic, Briana Mizrahi	Association of ADHD severity with risk of head injury, traumatic brain injury or concussion	Public Health	P23
Elise Gershman, Kelly Ghislaine Smith, Caroline Carreras	Race/ethnicity and HPV vaccination initiation and completion rates in women in the United States year 2015	Public Health	P24
Neeraja Chandrasekaran, Vivek Singh, Mabel Marotta, Sabrina Taldone, Jaclyn Kwal, Tulay Koru-Sengul, Christine Curry	Knowledge, attitudes, and behaviors of Zika virus in pregnancy	Public Health	P25
Neeraja Chandrasekaran, Vivek Singh, Mabel Marotta, Sabrina Taldone, Jaclyn Kwal, Tulay Koru-Sengul, Christine Curry	Travel behavior of Zika virus in pregnancy	Public Health	P26
Neeraja Chandrasekaran, Kimberly Gressick, Mabel Marotta, Natalia Cap, Jaclyn Kwal, Christine Curry	The utility of social media in providing information on #ZikaVirus	Public Health	P27
Nicole Brzozowski, Joseph Ottolenghi, Elizabeth A. Whitham	Intimate partner violence and postpartum contraceptive use: The role of prenatal intimate partner violence screening, race and ethnicity	Public Health	P28
Emily Tongdee, Misty Coello, Kenia Castro	Dermatologic problems and suicidal behaviors in children and adolescents	Epidemiology	P29
Alyssa James, Melissa Bengoa, Kristi Wintermeyer	Factors associated with the perception of quality of care related to provider sensitivity of values and customs by parents of children with asthma	Epidemiology	P30
Vishaal Sridhar, Melvin Thomas, Jean Vo	Association between household income level and diabetes mellitus in children	Diabetes	P31
Ryan Grell, Jonathan Lavi	Correlates of complementary and alternative medicine usage in South Florida	Complementary & Alternative Medicine	P32
Victor N. Becerra, Christopher Molloy, Cuong H. Lam	Role of additive assembly in improvement of technical skills involving endovascular devices	Medical Education	P33

Oral Presentations III

Friday, April 28, 2017
12:30 p.m. - 2:00 p.m.

AUTHORS	TITLE	FIELD	ABSTRACT ID
Angel Chinea, Gabriele Grossl, Christopher Tournade	Association between external characteristics of medical schools in the United States and the hiring of their first female permanent dean	Medical Education	O10
Elena DiMiceli, Erica Bass, Rachel Volke	Faculty beliefs towards and interest in volunteering at a student-faculty collaborative clinic	Medical Education	O11
Joseph Barbera, Miriam D. Weisberg, Grettel Castro, Pura Rodríguez de la Vega	Variances in resident minority populations between orthopedic and general surgery	Medical Education	O11
Neeraja Chandrasekaran, Hemikaa Devakumar, Eric Hurtado, G. Willy Davila	Surgical management of iatrogenic vaginal strictures - What are the outcomes?	Obstetrics & Gynecology	O13
Alexandriah Alas, Neeraja Chandrasekaran, Hemikaa Devakumar, Laura Martin, Eric Hurtado, G.Willy Davila	Should we delay the voiding trial for same-day pelvic surgery?	Obstetrics & Gynecology	O14

Oral Presentations IV

Friday, April 28, 2017
2:15 p.m. - 3:45 p.m.

AUTHORS	TITLE	FIELD	ABSTRACT ID
Layla Cavitt, Yanel De los Santos, Matthew Gates	Association of type-2 diabetes and in-hospital mortality in Puerto Rican patients hospitalized with decompensated heart failure	Cardiology	O15
Kelley Dages, Blake Fortes, Roboan Guillen	The association between the BUN/creatinine ratio at admission and mortality in patients with decompensated heart failure	Cardiology	O16
Jaskaran Grewal, Saba Mehboob, Shiva Mohan, Luisa F Pombo, Pura Rodríguez de la Vega, Juan Carlos Gonzalez, Juan Zevallos, Noël C. Barengo	Association between ethnicity and hypertension in Northern Colombia in 2015	Cardiology	O17
Amer Belal, Perry Fuchs, Diego Iparraguirre	The effects of time and day of arrival In the emergency department on rate of in-hospital mortality in patients diagnosed with ischemic stroke in Florida	Neurology	O18
Chet Raj Ojha, Jessica Lapierre, Myosotys Rodriguez, Nazira El-Hage	Neuropathogenesis mediated by Zika virus and role of autophagy	Neurology	O19

Poster Presentations III

Friday, April 28, 2017
3:45 p.m. - 4:45 p.m.

AUTHORS	TITLE	FIELD	ABSTRACT ID
Carma Goldstein, William Hasson II, Katherine Vandenberg	The impact of health insurance status on cervical cancer staging at diagnosis in Florida women aged 18-64, 2003-2012	Health Disparities	P34
A. F. Soto, J. Lamoureux, A. Alfonso-Remigio, R. Vinod	Determining the variables for neurologic etiology on syncope patients in the ED	Emergency Medicine	P35
A. F. Soto, J. Lamoureux, A. Alfonso-Remigio, R. Vinod	Determining the variables for cardiac etiology on syncope patients in the ED	Emergency Medicine	P36
Ana Pineda, Joseph Averbach, Kelly Medwid, Isabel J. Brea	A case of aortic dissection presenting with stroke-like symptoms	Emergency Medicine	P37
Rajib Kumar Dutta, Srinivasan Chinnapaiyan, Madhavan Nair	Transforming growth factor-ß suppresses CFTR biogenesis and function by post-transcriptional gene slicing mechanisms	Basic Sciences	P38
Muhammad Noor, Madiha Noor, C.V Rao, Madhavan Nair	Anti-HIV effects of nano-recombinant human chorionic gonadotropin and mechanistic studies	Basic Sciences	P39
Yanel De los Santos, Charles P. Kokes	Unusual mechanism of fatal pediatric abusive head trauma: A case report	Pathology	P40
Lauren Chiriboga, Janelis Gonzalez	Vaginal cuff complications with barbed vs. non-barbed sutures in total robotic hysterectomy: A retrospective study	Obstetrics & Gynecology	P41
Alexandriah Alas, Neeraja Chandrasekaran, Hemikaa Devakumar, Laura Martin, G Willy Davila, Eric Hurtado	Is correction of more severe pelvic organ prolapse associated with a high risk of developing de novo stress urinary incontinence?	Obstetrics & Gynecology	P42
Kevin Liu, Sean Zajac, Alex Kitto	Electronic media-usage and depression in children in the United States	Pediatrics	P43
Brian Janda, Alex Mahoney, Sam Swiggett	Geographical variation of pediatric asthma: Prevalence and severity in the United States	Pediatrics	P44
Hanadys Ale, Zaimat Beiro, Lesly Silva	Immune and clinical assessment in a cohort of pediatric Hispanic patients with partial DiGeorge syndrome: An institutional review	Pediatrics	P45
Yatyng Chang, Edward Hernandez, Courtney Hibbs	The association between ethnicity/race and non-medical use of prescription drugs in US adolescents: Secondary data analysis of the 2015 youth risk behavior surveillance system survey	Pediatrics	P46
Micaella Kantor, Myank Ohri, Alessandra Regatieri	Advanced prostate cancer manifesting with malignant ascites: A rare presentation of a common disease	Urology	P47
David Lehmkuhl, Muhammad A. Latif, Juan C. Batlle, Ricardo C. Cury, Constantino Peña	Comparison of iterative model based reconstruction and hybrid iterative reconstruction technique in coronary artery image quality in obese patients	Radiology	P48
Jose Cabrera, Nicole Massucci, Jonathan Macias	Association between gender and in-hospital mortality among intubated hemorrhagic stroke patients in Florida	Internal Medicine	P49

Oral Presentations V

Friday, April 28, 2017
4:45 p.m. - 6:15 p.m.

AUTHORS	TITLE	FIELD	ABSTRACT ID
Spencer del Moral, Amal Masri, Kamaldeep Singh	Adherence to current breastfeeding guidelines and the development of allergic disease	Pediatrics	O20
Zachary Aberman, Andrew Quinn, Jonathan Urbina	The association between socioeconomic status and revascularization procedures for acute myocardial infarction in Puerto Rico	Health Services	O21
Reese Courington, Bailey Roberts, Erik VerHage	Evaluation and diagnostic imaging for acute abdominal pain based on insurance status	Health Services	O22
Maite Castillo, Laura Florez	Characteristics of patients admitted for stroke and who are discharged against medical advice (DAMA) in Florida	Health Services	O23
Jorge Portuondo, Alfredo Armas, Andrew Milera	The association between emergency department arrival time and endotracheal intubation-related outcomes: A secondary analysis of the national hospital ambulatory medical care survey, 2005-2012	Health Services	O24

Oral Abstracts

O1

The Association between race and survival time in patients with glioblastoma multiforme

Andrew Bohn, BA. Alexander Braley, BA, MS.
Juan Carlos Zevallos, MD. Noël C. Barengo, MD, MPH, PhD.

Florida International University Herbert Wertheim College of Medicine, Miami, FL

Keywords: Glioblastoma Multiforme, Race, Ethnicity, Seer, Cancer

Introduction and Objective: Glioblastoma Multiforme (GBM) is the most common primary brain cancer in adults, and prognosis remains dismal with a median survival of 12-14 months. However, there is inconsistent evidence on the association between race and its impact on survival in GBM patients. The objective of this study was to study the association between race and survival time of GBM patients.

Methods: This was a retrospective cohort study using a patient population (n=5699) for this study from the National Cancer Institute's (NCI) Surveillance Epidemiology and End Results (SEER) database. The study used participants from the SEER database between 2004 and2013. Inclusion criteria included adults over 18 years-of-age, with a first-time diagnosis of histologically verified GBM of a supratentorial location who were diagnosed after 2003. Patients were excluded if diagnosis was made at the same time as autopsy, patients whose surgery status was "unknown" or any other key variables were missing in the dataset. Statistical procedures used included used Kaplan-Meyer curves and Cox-Regression analysis.

Results: After adjusting for age, type of surgery and whether the patient received radiation, Black (Hazard ratio (HR) 0.78; 95% confidence interval (CI) 0.67–0.91) and Asians/Pacific Islanders (API) (HR 0.75; 95% CI 0.64–0.88) had a decreased mortality compared to White GBM patients. The median survival times were different in Whites (11 months; 95% CI 11-12 months), Blacks (15 months; 95% CI 12-18 months) and API (13 months; 95% CI 11-17 months; p-value < 0.05). API patients had a higher frequency of receiving no surgical procedures (22.5%) compared with Whites and Blacks (18.4% and 15.6%). Blacks had a higher percentage of patients that receive partial resection (53.6%) compared to API (46.5%) and Whites (46.2%). Finally, White patients had a higher proportion getting total resection (35.5%) compared to Blacks (30.8%) and API (31.0%).

Conclusion: This study found a statistically significant association between race and survival time in GBM patients. The source of this difference may be biochemical, genetic, or due to therapeutic differences in each race. The findings from this study can help increase the accuracy of the prognostic outlook for White, Black and API patients with GBM. We have also found that survival time changes significantly between age groups. This more accurate portrayal of survival time can influence the decision to continue/start treatment, or to pursue only palliative options.

O2

Trends in stage of diagnosis of melanoma from 2001-2011

Giselle Prado[1]. Peter D'Amore[1]. Adam Tagliero[1]. Mercedes Florez-White, MD[1,2]. Juan Acuña, MD[1].

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[2]Greater Miami Skin and Laser Center, Miami, FL

Keywords: Melanoma, SEER, Stage at Diagnosis

Introduction: It's estimated that over 73,000 new cases of melanoma will be diagnosed this year. While melanoma accounts for less than 2% of skin cancer cases, it will account for most skin cancer related deaths. Early detection of this highly aggressive cancer is the cornerstone of treatment.

Objective: Our objective was to quantify the association between melanoma stage of diagnosis and year of diagnosis between the years 2001-2011.

Methods: A cross-sectional study was conducted using data from 18 registries reporting to the Surveillance, Epidemiology, and End Results (SEER) program from 2001-2011. Multivariate logistic regression was performed in order to obtain the unadjusted and adjusted associations between year of diagnosis and stage at time of diagnosis (in situ/localized versus regional/distant). Variables used as predictors included: demographic traits, age at diagnosis, primary site, laterality, histologic subtype, and tumor size.

Results: There were 115,913 cases identified with melanoma from 2001-2011 in SEER. Men constituted 56.6%. The age at diagnosis was evenly split between 40-64 year olds (45.4%) and those >65 (43.4). Primary site was distributed as follows: head and face 28.1%, trunk 29.8%, upper limb 25.0%, and lower limb 17.0%. More primaries were located on the left side (51.8%). Most cases were in situ or localized (92.5%) versus regional and distant (7.5%). There was a significant unadjusted association between year and stage of diagnosis (OR 0.95, 95% CI 0.95-0.96). After adjusting for sex, age at diagnosis, primary site, and histology code subtype, there was still a significant association between year of diagnosis and stage (OR 0.94, 95% CI 0.93-0.95). Adjusted analysis also showed: Females were less likely to be diagnosed with a higher stage than men (OR 0.69, 95% CI 0.65-0.73). Persons > 65 years were more likely to be diagnosed with regional and distant cancer (OR 1.24, 95% CI 1.13-1.35) than persons aged 18-39. Melanomas located on the trunk (OR 0.77, 95% CI 0.71-0.82) and upper limb (OR 0.64, 95% CI 0.60-0.69) were less likely to be higher stages than those located on the face and head. Nodular melanoma was most likely to be widespread at diagnosis compared to superficial spreading (OR 10.63, 95% CI 9.77-11.57). Acral lentiginous was more likely to be a higher stage (OR 6.75, 95% CI 5.70-8.00).

Conclusions: Early detection improved significantly as measured by stage at diagnosis. Men and older persons are more likely to be diagnosed at higher stage. Education and interventions aimed at early detection are critical to reduce incidence of regional and distant melanomas.

O3

A novel epigenetic diagnostic tool for alcohol use disorders: Detection of post-translational modifications by single cell imaging flow cytometry

Tiyash Parira, MS. Gloria Figueroa. Alejandra Laverde. Marisela Agudelo, PhD.

Department of Immunology, Herbert Wertheim College of Medicine, Florida International University, Miami, FL

Keywords: Alcohol, Epigenetics, Diagnostics, Histones, Immunology

Introduction and Objective: According to the National Institute on Alcohol Abuse and Alcoholism, 16 million adults suffer from Alcohol Use Disorders (AUD) in the United States. While Alcohol Use Disorders Identification Test (AUDIT), a self-reporting screening test for AUDs has shown promising results, more accurate and robust diagnostics are needed. Epigenetic biomarkers and their use for laboratory diagnostics is a promising tool for the future. With epigenetic studies of alcohol abuse being in focus, our lab has shown that epigenetic enzymes like the histone deacetylases are modulated in monocyte derived dendritic cells (MDDCs) which are the primary antigen presenting cells of the immune system. This has been demonstrated after alcohol treatment in-vitro and ex-vivo in cells from alcohol-users. The objective of this study was to analyze histone H3 and H4 post translational modifications (PTMs) in MDDCs under chronic alcohol exposure and to devise a novel diagnostic tool to screen for PTMs at the single cell level.

Methods: MDDCs were obtained from commercially available buffy coats and treated chronically (5 days) with 0.2% EtOH (ethanol). Post treatment, total histones were extracted to further carry out histone PTMs studies through ELISA and immunoblotting. In addition, treated cells were stained with fluorescently labelled antibodies specific to PTMs to carry out conventional flow cytometry and single cell imaging flow cytometry.

Results: Chronic 0.2% EtOH treated MDDCs show downregulated acetylations and methylations at most histone H3 and H4 PTMs; however, there was a significant upregulation detected at H4K12ac (acetylation at the 12th lysine residues on histone H4) compared to untreated MDDCs. These results were further validated by immunoblotting studies. Through single cell imaging flow cytometry, we were able to successfully stain H4K12ac and further study the increased acetylation at H4K12 at the single cell level. In summary, 0.2% EtOH treated MDDCs showed a higher percentage of cells expressing H4K12ac compared to untreated MDDCs and this was further validated by conventional flow cytometry.

Conclusions-Implications: Our results demonstrate for the first time that chronic alcohol exposure increases H4K12ac in MDDCs. This epigenetic effect can be successfully identified, measured and visualized through single cell imaging flow cytometry. Screening for H4K12ac as an epigenetic marker, using novel techniques such as single cell imaging flow cytometry has the potential to become a successful epigenetic diagnostic tool.

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O4

Autophagy is cytoprotective in neurons and necessary against Tat and morphine-induced neuronal toxicity in autophagy deficient mouse

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Keywords: Neuron, HIV, Autophagy-Deficient Mouse, Neurodegeneration

Introduction and Objective: HIV-infected patients who abuse opiates often show acceleration of HAND. Our lab and others have shown interactive effects between the opiate morphine and HIV protein Tat in the brain. Given that neuronal autophagy is found to be dysregulated in many neurodegenerative diseases, studies suggest that HIV infection in the CNS along with viral protein release can alter autophagy. However, the mechanisms of neurotoxicity mediated by autophagy remain unclear.

Methods: In this study, neurons derived from Becn1-deficient mice (Becn1+/-) were exposed to HIV-Tat and morphine to assess the role of autophagy as a cytotoxic or cytoprotective mechanism in neuronal viability, morphology, and calcium signaling. Becn1-deficient mice are heterozygous for the Becn1 allele and show reduced autophagy. Neuronal survival was assessed using time-lapse digital images following individual neurons over a 36-hour time period using an inverted microscope with an automated computer controlled stage and environmental chamber (37°C, 5% CO2). Cell death was determined by morphological changes such as cell body fragmentation and collapse. Viability was confirmed using a live/dead cell fluorescence assay which yields two-color discrimination of the population of live cells indicated by green fluorescence, from the dead-cell population indicated by red fluorescence. Levels of [Ca2+]i production in neuronal cultures were measured using the fluorescent marker fura-2-AM which is de-esterfied upon calcium binding. Fura-2 ratio at 340/380 nm excitation measurements were taken every 10 seconds for 30 minutes. Neurite beading, which is a marker for distressed or damaged neurons, was evaluated by immunocytochemistry with data reported as ratio of beads per neurite out of total neurites per visual field.

Results: Reduced levels of autophagy were shown to be detrimental to neuronal survival as compared to C57BL/J wild type controls. Treatment with Tat reduced neuronal survival for both strains, with co-administration of morphine enhancing toxic effects in wild type neurons, whereas this effect was negated in Becn1+/- neurons. Analysis of intracellular calcium also showed that Becn1+/-

neurons can inhibit Tat/morphine effects. However, upon examination of morphology, both wild type and mutant neurons showed enhanced neurite beading with Tat/morphine.

Conclusions: This data confirms the role of autophagy as a cytoprotective mechanism and that basal levels of autophagy are necessary for neuronal survival. Further, this suggests the autophagy pathway may play a role in mediating the combined Tat/morphine toxic effect to neurons.

O5

Transgender identity as an independent risk factor for lacking a personal physician

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Keywords: Transgender, Access, Gender, Psychiatry, Surgery

Introduction: Approximately 1 million transgender individuals live in the United States. Previous literature has demonstrated that, despite being a population in need of high-quality longitudinal care with an attempted suicide rate of 41%, transgender individuals frequently report encountering discrimination in healthcare as well as a lack of provider knowledge. The objective of this study was to determine if transgender identity is an independent risk factor for lacking access to a key component of health care, a personal physician, while controlling for other social determinants of health.

Methods: The study was performed using data from the CDC's 2014 Behavioral Risk Factor Surveillance System (BRFSS) questionnaire. This questionnaire surveyed 464,664 individuals over the age of 18 in all 50 states as well as Washington DC, Puerto Rico, Guam, and the US Virgin Islands. 150,854 respondents met inclusion criteria of responding to two key questions, 686 of whom identified as transgender. Exploratory data analysis was performed to identify potential confounders and multivariable binary logistic regression was used to determine an adjusted odds ratio while controlling for these confounders.

Results: The main result of the study was an adjusted odds ratio 1.87 (CI 1.03-3.4, p=0.038). Meaning, the odds of transgender individuals lacking access to a personal physician are 87% higher than those not identifying as transgender. There was missing data pertaining to delay in receiving healthcare, therefore best and worst case scenarios were computed. The worst case scenario analysis for transportation delay resulted in an odds ratio of 1.56 (p=0.158). The worst case scenario analysis for systematic delay resulted in an odds ratio of 1.58 (p=0.139).

Conclusion: Our results are in accordance with results from prior literature; however, our study is unique in that it compares the transgender population to the general population. In addition, our results are drawn from a specific measurable parameter. Our study was limited by the fact that it was a retrospective and cross-sectional secondary data analysis. It was further limited by the fact that all data was self-reported. Additionally, there was missing data pertaining to insurance status and delay in receiving care. This studies results are important in that they should motivate policy change on transgender health, focusing on education for physicians and the development of evidence-based guidelines

O6

Association between sexual orientation and suicidal ideation in US high school students: A secondary analysis of the 2015 Youth Behavioral Risk Survey

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Keywords: Suicide, Sexual Minority, Adolescent, Suicidal Ideation

Introduction and Objective: To assess whether there is an association between suicidal ideation and sexual orientation in adolescents and to determine if differences exist between sexual minority subgroups. The secondary objective is to assess whether demographics and risk behaviors modify the direction and magnitude of the association.

Methods: We conducted a secondary analysis of data from the Youth Risk Behavior Survey (YRBS) national database on a sample of U.S. high school students in grades 9-12 in 2015. Crude and adjusted (multivariable binary logistic regression) prevalence ORs of suicidal ideation, according to sexual orientation (heterosexual, gay/lesbian, bisexual and not defined), were computed with 95% confidence intervals. First order interaction tests were conducted for suspected effect modifiers. Data was subsequently stratified by gender.

Results: A total of 14,427 YRBS respondents were included in our sample population. All sexual minority groups were associated with significantly increased odds of suicidal ideation as compared to heterosexual adolescents. Gay/lesbian adolescents had an OR of 2.85 (p-value 0.001, 95% CI 1.63-4.98), bisexuals had an OR of 2.84 (p-value < 0.001, 95% CI 2.19-3.68), and not sure adolescents had an OR of 2.05 (p-value < 0.001, 95% CI 1.47-2.88). When stratified by gender, homosexual females had the highest odds of suicidal ideation (OR 3.42, p-value < 0.001, 95% CI 1.86-6.29) as compared to other female subgroups. Among males, bisexual adolescents had the highest odds of suicidal ideation (OR 5.22, p-value < 0.001, 95% CI 2.87-9.50).

Conclusions-Implications: There is an association between one's identification as a sexual minority youth and suicidal ideation regardless of subgroup. Further research should investigate gender as a possible effect modifier of this association.

O7

Hispanic ethnicity and hepatobiliary cancer stage at diagnosis

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Keywords: Hepatobiliary Cancer, Hispanic, Cancer Staging

Introduction and Objective: Hispanics have been shown to have increased prevalence and higher mortality from hepatobiliary cancer compared to non-Hispanic Whites1. Yet, the mechanisms explaining those findings are not clear. The aim of this study was to assess whether an association exists between Hispanic ethnicity and stage of hepatobiliary cancer at diagnosis in US patients.

Methods: We studied patients ≥18 years with a primary diagnosis of hepatic or intrahepatic bile duct cancer reported to the Surveillance, Epidemiology, and End Results (SEER) program2 between January 2004 and December 2013. Information on ethnicity (Hispanic versus non-Hispanic) and cancer stage at diagnosis according to the SEER Summary Staging3 (ranging from 0 to 9 and categorized for analysis as localized if < 2 or non-localized if ≥ 2) were based on medical records. Multivariate logistical regression was used to assess independent associations.

Results: Of 23,996 hepatobiliary cancer patients identified, 20,342 (85%) were studied. Hispanics comprised 10% of the sample, and 50% of patients had non-localized stages. In the unadjusted analysis, Hispanics had a lower odds of having non-localized stages (OR=0.84; 95% CI=0.77 to 0.92). After adjusting for sex, age, geographic location, diagnostic confirmation, and insurance status, Hispanics had 10% lower odds of having non-localized stages, but results were of borderline significance (OR=0.90; 95% CI=0.80 to 1.01).

Conclusions-Implications: We found no evidence that Hispanic patients with hepatobiliary cancer are at higher risk of being diagnosed at non-localized stages. Our findings, while preliminary, might suggest that disparities in prognosis for Hispanics are not due to delays in diagnosis.

O8

Racial disparities in cancer related mortality in patients with squamous cell carcinoma of the esophagus in the US

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Keywords: Esophageal Squamous Cell Carcinoma, African Americans, Healthcare Disparities, Ethnology, Esophageal Neoplasms

Introduction and Objective: Although there is a declining overall mortality rates in cancer patients in the US, there is a persistent disparity in incidence and cancer-related mortality rates among different races for esophageal squamous cell carcinoma. Our objective was to determine whether there is an association between race and cancer-related survival in patients with esophageal squamous cell carcinoma.

Methods: This was a retrospective cohort study and secondary data analysis using the National Cancer Institute's Surveillance, Epidemiology, and End Result (SEER) database. Patients aged 18 and over of White, Black, or Asian/Pacific Islander (API) race with diagnosed squamous cell carcinoma of the esophagus from 1973 to 2013 were included (n= 13,857). People with a race category of "Other" on SEER, an unknown stage at diagnosis and those without a primary tumor of esophageal squamous cell carcinoma of the esophagus were excluded from the study. The main outcome variable was cancer-specific mortality. A Kaplan–Meier curves and a log rank test were used to compare overall survival between the different ethnicity/race groups. Cox proportional hazards regression models were used to estimate unadjusted and adjusted hazard ratios (HRs). A p-value less than 0.05 was considered statistically significant.

Results: The median survival time was 8 months (95% CI 7.77-8.23). Blacks had a 1.15-fold increased risk of cancer-specific death (95% confidence interval (CI) 1.11-1.20) compared with white patients. After adjustment for all covariates, the HR remained statistically significant (HR 1.08; 95% CI 1.03-1.14). Patients of Asians/Pacific Islanders race, however, had the same survival as white patients. There was a constant reduction of the HRs in regard to cancer specific mortality as the decade of diagnosis increased. Patients treated between 1973 and 1979 had a 2.05-fold risk of death compared to those diagnosed between 2000 and 2013 (HR 2.05, 95% CI 1.93-2.19). The corresponding HR for the years 1980-1989 and 1990-1999 were 1.59 (95% CI 1.51-1.68) and 1.33 (95% CI 1.26-1.41), respectively.

Conclusions-Implications: As black people with esophageal squamous cell carcinoma were found to have a higher risk of death compared to white and Asian people, it is important to identify the underlying causes of this survival disparity in the different races and address them to further reduce this survival disparity.

O9

Socioeconomic differences in sources of information on the internet regarding Zika during pregnancy

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Keywords: Zika Virus, Public Health, Media

Background: Accurate health information influences personal preventive measures and healthcare utilization. Socioeconomic status (SES) disparity in utilization of scientific information impedes comprehension of Zika recommendations on pregnancy and sex, adversely effecting health outcomes. In this study, we aim to identify sociodemographic disparities and sources of information on the Internet regarding Zika in pregnancy and evaluate the importance of introducing interventions focusing on dissemination of recent evidence-based information to improve health awareness on Zika infection.

Methods: A 59-question survey was distributed among adult pregnant women (age >17years) in two antenatal clinics at University of Miami. Zika information sources including Scientific (CDC/WHO) and Social Media (Facebook/Twitter/LinkedIn/Instagram/Snapchat/Others) were used as outcome. SES as low (education < high school or income <$50,000) and middle/high (otherwise), race (White/Black), and ethnicity (Hispanic/non-Hispanic) were used as predictors. Chi-square test was performed to assess association between sociodemographic factors and Zika information source.

Results: Among initial sample of 85 women, majority in lower SES were younger (83.33%), Black (50%), Hispanics (41.67%), primigravid (33.33%), have education <high school (76.67%), and income <$50,000 (48.33%). The majority (68.42%) in middle/high SES were employed. There was no significant relation between race and ethnicity with the utilization of scientific (X2(1)=1.15, p=0.284 and X2(1)=1.01, p=0.317) and social media sources (X2(1)=0.09, p=0.762 and X2(1)=0.36, p=0.550).Women in middle/high SES group were more likely (64.0%) to utilize scientific sources for Zika information (X2(1)=11.58, p=0.001). Low SES group women were more likely (76.67%) to utilize social media (X2(1)= 6.69, p=0.010).

Conclusion: There are significant differences in the utilization of scientific information on Zika infection based on the SES of pregnant patients. Our study highlights the importance of introducing interventions focusing on dissemination of recent evidence based information to improve health awareness on Zika infection.

O10

Association between external characteristics of medical schools in the United States and the hiring of their first female permanent dean

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Keywords: Faculty, Medical, Medical School, Leadership, Gender Differences

Introduction and Objective: Gender inequality at the highest levels of leadership across many industries, medicine included, has long been skewed in favor of men. This study's objective was to determine the association between external characteristics of U.S. medical schools and hiring the first female permanent dean.

Methods: A longitudinal study was performed using a sample of 143 U.S. allopathic LCME-accredited medical schools. A secondary analysis of the data obtained from the AAMC was performed. Medical schools in U.S territories were excluded. Schools were categorized based upon whether they have ever had a female permanent dean. The primary outcome was duration from medical school establishment to hiring the first female permanent dean by the year 2016. The observation period spans from 1980-2016. The external characteristics evaluated in this study included region, establishment year, reputation, city size, county income, and sector. An exploratory analysis of the variables was performed followed by bivariate analysis. Kaplan-Meier curves, log-rank testing, and collinearity diagnostics were performed. Cox proportional hazards model was used to calculate unadjusted and adjusted hazard ratios.

Results: Adjusted models after controlling for region revealed that schools without NIH funding were 12 times more likely to hire the first female permanent dean when compared to schools in the top 50 of NIH funding (HR=11.6, 95% CI=2.4-55.4). Similarly, schools founded after the year 2000 were 11 times more likely to hire a female dean when compared with those founded prior to 1963 (HR=11.3, 95% CI=2.7-47.2). The Midwest region was of borderline significance when adjusted for NIH funding (HR=2.3, 95% CI 0.9-5.7) and year of establishment (HR=2.5, 95% CI 1.0-6.0). City size, income, and sector had no statistically significant association with the hiring of a first-time female permanent dean.

Conclusions-Implications: Reputation and establishment year are good predictors of a medical school hiring their first female permanent dean, with newer and lower ranked schools more likely to do so. Region was of borderline significance, with the Midwest being more likely to hire their first female permanent dean. Research-intensive medical schools and traditional medical schools should consider playing a more active role in the recruitment and promotion of women to their highest leadership positions.

O11

Faculty beliefs towards and interest in volunteering at a student-faculty collaborative clinic

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Keywords: Volunteerism, Medical, Faculty, Beliefs, Interest

Introduction and Objective: Medical schools across the country have developed Student-Faculty Collaborative Clinics (SFCCs) with the goal of providing quality healthcare to underserved populations. Our objective is to assess faculty characteristics associated with positive beliefs towards and interest in volunteering at a SFCC that could assist in a successful implementation and maintenance of faculty volunteers at a new SFCC at the Florida International University Herbert Wertheim College of Medicine (FIU-HWCOM).

Methods: We performed primary data collection via an online anonymous survey from a sample of the FIU-HWCOM faculty, identified through the publicly available directory or faculty listserv. The outcomes were selected beliefs towards student participation in healthcare related volunteer activity and interest in volunteering at a SFCC. We conducted a descriptive analysis to determine the frequency of our outcomes and explored whether there were independent correlates for the beliefs and interest towards the SFCC. SPSS Statistics software was used for analysis.

Results: The survey was distributed to 237 faculty emails, and the response rate was 27.4% (65 faculty). The majority of respondents (84.6%) had positive beliefs towards the SFCC, however only 53.2% were interested in volunteering at a SFCC. We found no correlates for faculty beliefs regarding the SFCC. Regarding faculty interest to support a SFCC, after adjustment for faculty gender, ethnicity, number of dependents, academic degree, specialty (primary care or not), licensure status, and history of healthcare or non-healthcare volunteer, and faculty advisor status, increased odds of being interested in volunteering were found for faculty with dependents younger than 18 years old (OR=20.1, 95% CI =1.1-377.1) and for faculty who participated in healthcare related volunteer activities in the past 5 years (OR=10.8, 95% CI=1.0-112.5).

Conclusions-Implications: Our findings found no independent predictors of faculty beliefs. Independent predictors of faculty interest were healthcare volunteer experience in the last 5 years or having children <18 years old. Findings should be interpreted in light of the low response rate and low power. Future studies aiming at higher faculty participation are warranted to guide strategies for the recruitment of faculty interested in volunteering at an SFCC.

O12

Variances in resident minority populations between orthopedic and general surgery

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Keywords: Orthopedic Surgery, General Surgery, Residency Programs, ACGME, Minority Residents

Introduction: Historically, orthopedic surgical residencies have a lower proportion of female and minority residents compared to other residency programs. Although improvement in program diversity has been made over recent years, Orthopedics continues to have a comparatively lower prevalence of female and minority residents. This discrepancy exists across multiple surgical residency programs, most notably among surgical subspecialties. Previous studies have compared female and ethnic minority composition among Orthopedic and other surgical residency programs. This study aims to provide a more up-to-date analysis of this data.

Methods: The ACGME databook for the academic year 2015-2016 was used to extract demographic information on US orthopedic and general surgery residents. We specifically analyzed the distribution of sex and ethnicity (White, Asian or Pacific Islander, Hispanic, Black, Native American/Alaskan, other, and unknown) by general and orthopedic surgery residencies. 2x2 tables were constructed and crude odds ratios with corresponding 95% confidence intervals were calculated and presented.

Results: In 2015-2016 Orthopedics (n = 3,575) had the lowest percentage of female residents of all residency programs at 14.5%, while General surgery (n = 7,521) had 37.6% female residents (OR 0.28; CI 0.25-0.31). The percentages of Asian, Hispanic and Black non-Hispanic residents in orthopedic surgery were 11.6% (OR 0.58; 95% CI 051-0.67.), 3.6% (OR 0.64; 95% CI 0.37-0.58), and 3.8% (OR 0.62; 95% CI 0.41-0.53), respectively. Additionally, General Surgery was found to have 16.4% Asian, 6.4% Hispanic, and 6.2% Black non-Hispanic.

Discussion: Historically and currently, lower proportions of female and ethnic minorities exist in Orthopedic surgery than other surgical subspecialties. Generating a diverse pool of healthcare providers has been identified as instrumental in strengthening patient-physician relationship and improving outcomes across a wide demographic range. More research needs to be performed to discern underlying associated factors.

O13

Surgical management of iatrogenic vaginal strictures - What are the outcomes?

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Keywords: Vaginal Strictures, Surgical Complication, Dyspareunia

Introduction: Every gynecologist will encounter women with vaginal strictures in their practice. Vaginal strictures can present congenitally, autoimmune disease, from hormonal atrophy and iatrogenically. This is a source of distress as it affects sexual function by causing dyspareunia. Interventions such as stricture lysis, z-plasty, vaginal advancement flaps, and skin grafts have been described in the literature for iatrogenic strictures. However, there is a paucity of data regarding long-term outcomes of interventions for vaginal strictures.

ORAL ABSTRACTS

Objective: We aim to evaluate the success of stricture lysis in women with iatrogenic vaginal strictures.

Methods: A retrospective review of the Urogynecology database was performed and subjects who underwent stricture lyses between 2005 through 2015 were collected. Subjective success was defined as no pain during sexual activity. Objective success was defined as resolution of stricture on follow-up pelvic examination. Descriptive statistics for demographic data and outcomes were calculated using SAS® Studio.

Results: A total of 89 women with mean age of 60.86(standard deviation (SD): 11.29) were included. Iatrogenic factors were reviewed and 9 (10.11%) had large episiotomy tears, 29 (32.58%) underwent vaginal hysterectomy, 3 (3.37%) underwent vaginal laser treatments, 6 (6.67%) underwent mesh revision, 45 (50.56%) underwent anterior colporrhaphy, 58 (65.17%) underwent posterior colporrhapy, and 40 (44.94%) underwent sling surgery. Preoperatively, 63 (70.79%) women that were sexually active and 59 (66.29%) that complained of dyspareunia. Physical exam revealed 53 (59.55%) introital strictures, 23 (25.84%) in the middle-third of the vagina, 13 (14.6%) at the apex. Twenty-one (23.60%) women underwent outpatient in-office stricture lyses and 68 (76.4%) in the operating room. Eighty-two (92.1%) of patients followed-up at a mean of 65.9 weeks postoperatively. Subjective success of 65.82%, and objective success of 83.75% were calculated. There were 13 (14.6%) stricture recurrences and 15 (16.85%) developed complications including bleeding with intercourse 3 (3.37%), vulvar abscess 3 (3.37%), vaginal pain 4 (4.49%), prolonged bleeding at lysis site 2 (2.25%), and UTI 1 (1.12%). Two women (2.25%) underwent reoperation for stricture recurrence.

Conclusion: Vaginal stricture lysis is a safe and simple procedure that can be performed in the operating room or in an office setting. Studies comparing other methods of vaginal stricture repair are warranted.

O14

Should we delay the voiding trial for same-day pelvic surgery?

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Keywords: Pelvic Organ Prolapse, Ambulatory Surgery, Postoperative Urinary Retention

Introduction and Objective: Since 2013 our institution performed same-day surgery for stress urinary incontinence and pelvic organ prolapse (POP), but there has been an observed trend of increasing (POUR). To date, there are no studies evaluating voiding trial protocols performed the same-day as surgery for pelvic floor surgery. The primary aim of this study was to compare postoperative urinary retention (POUR) rates when the voiding trial was performed on postoperative day (POD) 0 versus POD 1. We hypothesized there would be less POUR when the voiding trial was performed on POD 1.

Methods: This was a retrospective review using a database of women undergoing vaginal POP surgery from 2012 to 2015. Non-vaginal operations and those requiring prolonged catheterization were excluded. A standardized voiding trial was performed on either POD 0 or POD 1. Voiding trial was considered successful if patients voided two-thirds of volume instilled, and an ultrasound confirmed less than one-third the volume remained.

Results: A total of 802 surgeries were performed, with 325 undergoing the voiding trial on POD 0, and 477 on POD 1. Demographics found that those with voiding trial on POD 0 were younger, had less severe prolapse, and less likely to have an incontinence sling, a posterior repair, or an anterior and posterior repair. There was a higher voiding trial pass rate on POD 0 versus POD 1 (56.9% vs. 48.2%, p=0.0347). Bivariate analysis demonstrated higher voiding trial pass rate in older women (p=0.0432), shorter surgery times (p=0.0197), lower estimated blood loss (EBL, p<0.0001), a smaller POP-Quantification (POP-Q) point Ba (p=0.0109), and having vaginal hysterectomy (p=0.0012) or an obliterative procedure (p=0.0213). Multivariate logistic regression demonstrated that independent risk factors for failing the voiding trial included voiding trial on POD 1 (adjusted odds ratio [aOR] 1.6; 95% confidence interval [CI] 1.1-2.5), having a larger POPQ point Ba (aOR 1.2, 95% CI 1.1-1.3), and having an EBL > 200 cc (aOR 5.2, 95% CI 2.7-10.7). Those who had an obliterative procedure were 60% more likely to pass the voiding trial (aOR 0.4, 95% CI 0.2-0.96), and for every year older, women were 2% more likely to pass the voiding trial (aOR 0.96, 95% CI 0.96-0.99).

Conclusions-Implications: Women who undergo ambulatory surgery are more likely to pass voiding trial if it is performed the same-day as surgery. Risk factors for failing voiding trial included younger age, an EBL > 200cc, and a larger cystocele preoperatively.

O15

Association of type-2 diabetes and in-hospital mortality in Puerto Rican patients hospitalized with decompensated heart failure

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Keywords: Type 2 Diabetes, Puerto Rico, Decompensated Heart Failure, Mortality

Introduction and Objective: Heart failure is a significant cause of mortality, and type 2 diabetes is a significant risk factor for the development of heart failure. Studies have shown an association between heart failure and diabetes, suggesting that diabetes may be an independent risk factor for mortality due to heart failure. No previous studies have examined the relationship between diabetes and in-hospital mortality in patients with heart failure.

Methods: This is a secondary analysis of the Puerto Rico Cardiovascular Disease Surveillance Electronic Database from 2007, 2009, and 2011. A historical cohort, consisting of patients older than 18 years who were hospitalized for decompensated heart failure, was nested into the hospital data. The population of the study is all patients 18 years and older who were hospitalized for decompensated heart failure. Outcomes included all-cause mortality during hospital stay. Controlling for patient characteristics, we used multivariate logistic regression modeling to assess associations between these outcomes and diabetic status.

Results: In the years 2007, 2009, and 2011, the Puerto Rico Cardiovascular Disease Surveillance Electronic Database observed 1818 cases of decompensated heart failure. A total of 1632 patients met the inclusion and exclusion criteria and were included in our analysis. Of these, 1031 had diabetes, representing 63.2% of the population, and 601 were non-diabetic, representing 36.8% of the population. The analysis comparing diabetes and mortality rates showed an adjusted odds of adjusted OR 1.3, (95%CI 0.8-2.2, p=0.32). The odds of dying in the hospital from decompensated heart failure was not significantly different between diabetics and non-diabetics.

Conclusions-Implications: We found no association between mortality and diabetic status in patients hospitalized for decompensated heart failure. There were some limitations in our study; therefore, further research in this topic is warranted.

O16

The association between the BUN/creatinine ratio at admission and mortality in patients with decompensated heart failure

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Keywords: Decompensated Heart Failure, Kidney Dysfunction, BUN/Creatinine Ratio, In-Hospital Mortality, Puerto Rican

Introduction and Objective: It is widely accepted that kidney dysfunction is strongly and independently associated with mortality in patients with acute decompensated heart failure (ADHF); however there is scant evidence on the actual association of the BUN/creatinine ratio (BUN/Cr) as a measure of renal impairment and mortality in these patients. The objective of this study is to estimate the association between the BUN/Cr ratio at admission and in-hospital mortality in Puerto Rican patients with ADHF.

Methods: We conducted a secondary analysis of the Puerto Rican Cardiovascular Surveillance System Decompensated Heart Failure database from the years 2007, 2009, and 2011. A historical cohort was assembled using data from the Registry. Selection criteria included being admitted to any of 21 participant medical centers, having a verified diagnosis of ADHF, and also having valid information on BUN and creatinine levels at admission (exposure variable) and on vital status at discharge (outcome of interest). Kidney dysfunction was defined as a BUN/Cr > 22.1. Both crude and adjusted for potential confounders (multivariable binary logistic regression modeling) odds ratios (OR) and 95% confidence intervals (95%CI) were computed. One-way sensitivity analyses (worst-best case scenario) on the impact of missing data on confounders were conducted as needed.

Results: In total 1,729 patients were included in the study. Overall in-hospital mortality was 5.4% (95%CI 4.4%-6.5%) and the prevalence of kidney dysfunction was 35.2% (95%CI 33-37.5). Kidney dysfunction as defined by an elevated BUN/Cr ratio was associated with an increased odds for in-hospital mortality: OR = 2.28, 95% CI 1.51 - 3.43, association that persisted even after adjusting for potential confounders: adjusted OR = 1.87, 95%CI 1.20 - 2.91.

Conclusions-Implications: We found that kidney dysfunction defined as a BUN/Cr ratio > 22.1 at admission is independently associated with in-hospital mortality in ADHF patients. The actual discriminant/predictive ability of the BUN/Cr ratio needs to be measured and validated prospectively before proposing its utilization as a mortality predictor in clinical settings.

O17

Association between ethnicity and hypertension in Northern Colombia in 2015

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Keywords: Hypertension, Hispanic, Latino, Colombia

Background: It has been estimated that worldwide, 7.5 million deaths (12.8% of the global total) and 64.3 million disability-adjusted life years (4.4% of the global total) were due to non-optimal blood pressure. According to current research findings, a genetic predisposition to hypertension exists particularly in those of African origin in the United States. Nevertheless, studies on the associations between ethnicity and the risk of hypertension in Latin America have been sparse and equivocal.

Objective: The objective of this study was to determine whether there is an association between Afro-Colombian ethnicity and the prevalence of hypertension.

Methods: This secondary data analysis used information obtained from a population of Northern Colombia in 2015.

ORAL ABSTRACTS

The participants were individuals enrolled in Mutual SER EPSS, a health care insurance company of the lower socio-economic population. The participants were randomly selected from 30 municipalities, of five provinces (Atlántico, Bolívar, Córdoba, Magdalena and Sucre). The ages ranged from 18 to 74 years (n=2613). Participants completed questionnaires and underwent physical examinations. Potential confounders included age, sex, education level, physical activity, smoking status, diet, BMI, abdominal circumference, and 2-hour plasma glucose levels. A chi square test was used to compare categorical variables. Univariate and multivariate logistic regression models were used to test the association between ethnicity and hypertension. Odds ratios (OR) and their respective 95% confidence interval (CI) were calculated.

Results: Afro-Colombians had a 20% decreased risk of developing hypertension compared to non Afro-Colombians. However, the OR was not statistically significant (95% OR 0.82; CI 0.64–1.05). As age increased, Afro-Colombians were at greater risk for developing hypertension, particularly those greater than 65 years (95% OR 14.87; CI 10.20-21.66). BMI also demonstrated the same pattern, with those who had a BMI of 30 or higher were at a greater risk of developing hypertension (95% OR 1.72; CI 1.14-2.60). Coffee demonstrated a protective effect against hypertension, with a decrease risk of 30% in those drinking 3 cups or more (OR 0.70; 95% CI 0.51-0.97). Afro-Colombians had a greater prevalence in high levels of physical activity, current/former smoking, eating at least 1 fruit or vegetable per day/week, 2 or more days of fish consumption per week, and a greater median abdominal circumference compared with non Afro-Colombians (p-values <0.05).

Conclusion: This study found no association between Afro-Colombian vs. non Afro-Colombian populations and hypertension. African populations in Latin America and elsewhere may not have an increased risk for hypertension. Further research is recommended, as the gap in hypertension research amongst different ethnicities continues to exist.

O18

The effects of time and day of arrival in the emergency department on rate of in-hospital mortality in patients diagnosed with ischemic stroke in Florida

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Keywords: Ischemic Stroke, Weekend Effect, Off-Hours, Cerebral Vascular Accident, Stroke

Introduction and Objective: Stroke is the fourth leading cause of death in the United States. The provision of effective care is paramount in the prevention of stroke mortality. The "weekend effect" is defined as the difference in quality of health care on weekends as compared to weekdays. Often included in studies of the weekend effect are "off-hours" care, referencing hours outside of regular business hours on weekdays. Previous studies of the weekend effect and off-hours care in ischemic stroke have been inconclusive. The aim of this study was to determine if there is a difference in in-hospital mortality in ischemic stroke patients in Florida depending on the time and day of arrival to the emergency department.

Methods: This study was a secondary analysis of data from the Florida Agency for Health Care Administration (AHCA). The design is a non-concurrent cohort study examining in-hospital mortality rates in patients with a primary diagnosis of ischemic stroke in Florida acute care hospitals between 2008 and 2012. Patients with a primary diagnosis of ischemic stroke, arriving through the emergency department, and having a documented time and day of arrival to the emergency department were included in the final analysis. The primary outcome measured was in-hospital mortality.

Results: The total number of patients included in the study was 36,371. Off-hour arrivals (n= 28,724, mean age 71.0±14.5 years) were associated with similar in-hospital mortality than on-hour arrivals (n=7,647, mean age 71.6±14.3 years) (3.7% vs 3.3%; p-value=0.105). In the multivariate analysis, off-hour arrivals were borderline significantly associated with increased in-hospital mortality (OR=1.14; 95% CI, 0.99-1.32) after adjusting for age, gender, ethnicity, race, and insurance status.

Conclusions: Off-hour arrivals to the emergency department showed similar in-hospital mortality than on-hour arrivals. The high percentage of patients that were excluded from final analysis because of missing data (n=26,629, 42.3%) could lend to our non-statistically significant result. Florida has one of the highest numbers of designated primary stroke centers in the US; this fact may also partially explain the nonsignificant borderline result between off-hours and on-hours stroke care.

O19

Neuropathogenesis mediated by Zika virus and role of autophagy

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Keywords: Zika Virus, Neuropathogenesis, Inflammation, Autophagy

Introduction: Zika virus (ZIKV) is a flavivirus emerged as a public health threat because of its association with neurodevelopmental complications like microcephaly in infant and Guillain-Barre Syndromes in adult. The virus has been reported to have tropism for brain and might cross blood brain barrier infecting both neurons and glia. Though many studies are now being concentrated on effect of virus on neuroprogenitor cells, our study was aimed at investigating the mechanism of neuropathogenesis of ZIKV.

Methods: We used both in vivo ZIKV-infected mouse model and in vitro ZIKV-infected brain cells. ZIKV infected mice brain cyosections were immunostained with antibody against NS1 and E proteins and astrocytic marker GFAP. Primary human and murine astrocytes as well as human neurons were infected with ZIKV and the viral proteins followed by measurement of inflammatory cytokines/chemokines, cell viability, neuronal morphology. In terms of mechanism, we examine the role of autophagy using cell cultures derived from an autophagy deficient and wild-type mouse.

Results: Non-structural (NS)-1 and envelope (E) proteins were found in the perinuclear regions and in vesicles of astrocytes, respectively, at days 4, 8 and gradually decreased at 10 days post-infection, with major adverse immune reaction encountered. ZIKV and the viral proteins NS1 and E were cytotoxic to human astrocytes and caused significant increase in the inflammatory molecules, RANTES, MCP-1 and IL-6, without affecting cell viability. ZIKV infection of human neuron caused mild but significant decrease in cell viability and viral proteins NS1 and E caused significant increase in dendritic beading. Interestingly, we found that autophagy (Beclin1) deficient mice neurons exposed to viral proteins NS1 and E does not undergo dendritic beading when compared to neurons from wild-type mice.

Conclusions and implications: ZIKV can infect and replicate in human and immunodeficient mouse glia causing significant inflammatory response. ZIKV proteins are toxic to neurons through direct interaction with Beclin1, suggesting possible target for ZIKV therapy and vaccine development.

O20

Adherence to current breastfeeding guidelines and the development of allergic disease

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Keywords: Breastfeeding, Allergic Disease, Asthma, Hay Fever

Introduction and Objective: The full range of benefits conferred by breastfeeding has been growing over the last century and dozens of studies performed in the last 10 years have continued to shed light. The association between exclusive breastfeeding for the recommended 6 months of life and the development of allergic disease remains inconclusive.

Research aim: To assess if exclusive breastfeeding for the first 6 months of life associated with decreased occurrence of allergic disease (including hay fever or respiratory allergy and asthma) presenting within the first 6 years of life.

Methods: We performed a secondary analysis of data collected from a prospective cohort, Infant Feeding Practices Study II and Its Year 6 Follow-Up. The independent variable was infant feeding practices during the first 6 months of life as reported by the primary caregiver (Categorized as exclusive breastfeeding, mixed breastfeeding, or never breastfeeding). The dependent variables were development of hay fever or respiratory allergy, and or asthma, based on these conditions ever being reported by a caregiver. Multivariate logistic regression was used for each outcome to test independent associations with breastfeeding practices. Data analysis was conducted using STATA 14.

Results: Of the 1542 participants in Y6FU, 1247 had relevant data on feeding practices and were eligible for this study. A vast majority of these mothers chose not to exclusively breastfeed for the first 6 months of life with only 5.4% exclusively breastfed infants, 49.0% mixed fed infants, and 45.6% without any breastfeeding. The overall incidence of hay fever or respiratory allergy in this sample was 21.7% and asthma was 9.9%. For the outcome hay fever or respiratory allergy, compared to exclusively breastfed infants, the odds ratio (OR) for children who were mixed fed was 1.5 (95% CI = 0.7-3.2, p=0.255), and for those that were never breastfed was 1.8 (95% CI = 0.9-3.8, p=0.112) in the unadjusted analysis. When adjusted for socioeconomic factors, environmental exposures, family history, race and gender, in mixed fed infants the OR was1.2 (95% CI = 0.5-2.7, p=0.707) and in never breastfed infants was 1.3 (95% CI = 0.6-3.0, p=0.554) compared to the exclusively breastfed group. For the outcome of asthma, compared to exclusively breastfed infants the unadjusted OR was 1.7 (95% CI = 0.6-4.7, p=0.347) and for the never breastfed infants the unadjusted OR was 1.5 (95% CI = 0.5-4.4, p=0.416). Adjusting for socioeconomic factors, environmental exposures, family history, race and gender, the odds of developing asthma somewhat reduced in both groups, changing the OR in mixed fed infants to 1.3 (95% CI = 0.4-4.6, p=0.651) and 1.3 in never breastfed infants (95% CI = 0.4-4.6, p=0.685).

Conclusions-Implications: We did not find evidence for an association between breastfeeding practices and the development of allergic conditions, but results should be taken in light of limited power. Further

O21

The association between socioeconomic status and revascularization procedures for acute myocardial infarction in Puerto Rico

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Keywords: Reforma, Socioeconomic Status, Myocardial Infarction, Revascularization, Puerto Rico

Introduction and Objective: Socioeconomics have shown to be a modifying force behind access to health care and the use of invasive interventions. The rates of revascularization procedures following acute myocardial infarction (AMI), versus medical management alone, have shown to be controversial in the published literature. The Puerto Rico (PR)-sponsored Reforma health insurance plan requires a participant to be below the 135% federal poverty level. This study's objective was to determine the effects of health insurance status as a proxy for socioeconomic status (SES) on the use of revascularization therapies during the management of AMI's in PR.

Methods: This study used the Cardiovascular Surveillance Study of Puerto Rico database for years 2007, 2009, and 2011. A total of

984 patients between the ages of 18-65 years hospitalized in 20 medical facilities comprised our study population. Selection was based on hospital discharge for AMI. The independent variable was health insurance defined as Reforma, representing lower SES, versus other types of health insurance, representing other than lower SES. The dependent variable was intervention for AMI, defined as either revascularization (coronary artery bypass graft (CABG) or percutaneous coronary intervention/ percutaneous transluminal coronary angioplasty (PCI/PTCA)) versus medical management of any kind. Analysis was done using multivariate logistic regression to determine the association of SES in the treatment of AMI.

Results: We studied 984 patients. 333 (33.8%) had Reforma insurance. Overall 190 patients19.3% received revascularization procedures. But differences existed regarding the type of insurance: 21.8% of non-Reforma patients compared to 15.6% of Reforma patients received a revascularization procedure OR=0.67, (95%CI=0.47-0.95). After adjustment for age, gender, marital status, diabetes, hypertension, coronary heart disease, and smoking status the association was OR=0.66, (95% CI= 0.45-0.97).

Conclusion: The results suggest that Puerto Rican patients hospitalized with an AMI who had Reforma health insurance, and thus a lower SES, were significantly less likely to receive revascularization procedures compared to patients with non-Reforma and other than lower SES.

O22

Evaluation and diagnostic imaging for acute abdominal pain based on insurance status

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Keywords: Computed Tomography, Acute Abdominal Pain, Insurance Status, Emergency Department

Introduction and Objective: Acute abdominal pain (AAP) is one of the most common complaints in the Emergency Department (ED). Rapid diagnosis is essential and is often achieved through imaging. Computed tomography (CT) is widely considered an exemplary test in the diagnosis of AAP. As previous studies show disparities in healthcare treatment based on insurance status, our objective was to assess the association between insurance status and frequency of CT ordered for adult patients presenting to the ED with AAP from 2005-2012.

Methods: This study used the National Hospital and Ambulatory Medical Care Survey: Emergency Department Record (NHAMCS) database, which collects data over a randomly-assigned four week period in the 50 states and DC, to perform an observational retrospective analysis of patients presenting to the ED with AAP. Patients with Medicaid, Medicare, or no insurance were compared to patients with private insurance. The association between insurance status and frequency of CT ordered was measured by obtaining odds ratios along with 95% CIs adjusted for age, gender, and race/ethnicity.

Results: Individuals receiving Medicaid are 25% less likely to receive CT than those with private insurance (OR 0.754, CI 0.622-0.916, p=0.004). Those on Medicare or who are uninsured have no difference in odds of obtaining a CT scan as compared to patients with private insurance. Additional findings are that female patients are 20% less likely to receive CT scan, and black patients are 33% less likely.

Conclusions and Implications: Patients on Medicaid are significantly less likely to receive a CT when presenting to the ED with AAP. Differences in diagnostic care may correlate to inferior health outcomes in patients without private insurance.

O23

Characteristics of patients admitted for stroke and who are discharged against medical advice (DAMA) in Florida

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Keywords: Florida, Stroke, DAMA

Introduction and Objective: The most common illness associated with DAMA (Discharge against Medical Advice) is cardiovascular disease. There have been studies on finding associations with DAMA as it is known these lead to readmissions, higher mortality rates, and higher costs to the health care system. The objective of the study is aimed at identifying the characteristics associated with DAMA in Florida stroke patients.

Methods: We conducted a secondary analysis of the Florida Hospital Discharge Database for Stroke, a non-concurrent (historical) cohort within the registry. This database collected information from 2008-2012 on the patient demographics, diagnoses, procedures, financial charges and hospital characteristics pertaining to each hospitalization due to stroke in Florida. The population of the study consists of 2,186 stroke patients from several districts and hospital classes throughout the state. The outcome measured was discharge against medical advice (DAMA), as recorded in the dataset. Potential predictor of DAMA that were assessed included age, sex (male and female), race (Asian, Black/African American, White, Other), ethnicity (Hispanic/Latino and Non-Hispanic or Latino), facility region, length of hospitalization and payment source (insured/covered, non-insured). Chi-squared test was used to examine bivariate associations. Multivariable logistic regression was used to identify the variables that influenced DAMA. The threshold for significance was set a priori at 0.05 level for a two tailed test.

Results: The odds of DAMA in Florida Stroke patients increase in those who live in Miami-Dade/Monroe and Broward Counties in comparison to other counties in the state (OR 2.17, 95% CI= 1.84-2.56; OR 1.31, 95% CI= 1.08-1.59, respectively). Similarly male (OR 1.7, 95% CI= 1.9-1.5) and insured patients (OR 3.8 95% CI= 3.4-4.3) are more likely to DAMA. Furthermore, patients are less likely to leave against medical advice for every additional year of life (OR 0.96; 95% CI= 0.96-0.96) and with any length of stay (1-5 Days: OR 0.14; 95% CI= 0.12-0.17; 6-10 Days: OR 0.06, 95% CI = 0.04-0.07; +10 Days: OR 0.03, 95% CI= 0.02-0.04)

Conclusion/Implications: Florida stroke patient characteristics that increase the likelihood of DAMA include male gender, uninsured status and living in Miami-Dade/Monroe and Broward counties. This information could be relevant to physicians and policymakers to identify the population at risk and create interventions to avoid DAMA complications, such as readmission and adverse health outcomes. Further studies are needed to explore additional reasons of DAMA from the patient's and health care worker's perspective.

O24

The association between emergency department arrival time and endotracheal intubation-related outcomes: a secondary analysis of the National Hospital Ambulatory Medical Care Survey, 2005-2012

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Keywords: Endotracheal Intubation, Weekend Effect, Mortality

Introduction and Objective: Studies have often demonstrated an association between off-hour arrival time and increased mortality rate for various admission diagnoses and interventions. This study seeks to determine whether off-hour arrival time is associated with differences in mortality rates in patients 18 years old or older who required endotracheal intubation (ETI) in United States Emergency Departments (ED). Our a priori hypothesis was that patients undergoing ETI in the ED during off-hours have higher mortality than those during normal hours. Length of hospital stay was analyzed as a secondary outcome.

Methods: This is a secondary analysis of the National Hospital Ambulatory Medical Care Survey (NHAMCS) from 2005 to 2012. A historical cohort, consisting of patients older than 18 years who underwent ETI in participant EDs, was nested into the survey data. Study population consists of all patients 18 years and older who received emergent ETI in the ED. Outcomes included in-hospital all-cause mortality, and length of stay greater than or equal to one week. Crude and adjusted (logistic regression) estimations of associations between these outcomes and ED arrival time were computed.

Results: From 2005 to 2012, the NHAMCS observed 269,493 ED cases. A total of 479 patients were found eligible and included in the analysis. Of these, 191 (39.9%) underwent ETI during normal working hours, and 288 (60.1%) during off-hours. The adjusted OR for mortality between patients arriving off hours versus office hours was 1.3 (95% CI of 0.8-2.3). In survivors, the likelihood of prolonged hospital stay was significantly lower in subjects who arrived to the ED during off-hours (adjusted OR of 0.3; 95% CI 0.1-0.6).

Conclusions-Implications: We found no association between mortality and ED arrival time in patients requiring ETI. In patients undergoing ETI in the ED who survived their hospitalization, off-hour arrival time provided a significant protective effect with respect to length of stay. There were some limitations to our study; therefore, further research in this topic is warranted.

Poster Abstracts

P1

Association between marital status and in-hospital mortality in acute myocardial infarction patients in Puerto Rico

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Keywords: Marital Status, Myocardial Infarction, Mortality, Puerto Rico

Introduction and Objective: It has been shown in previous studies that being married is associated with a reduced risk of long-term mortality after an acute myocardial infarction and reduced incidence of AMI, but the association between marital status and in-hospital mortality has not been studied as extensively to date. The objective of this study was to determine if there is an association between marital status (single, married, divorced/separated, and widowed) and in-hospital mortality in patients from Puerto Rico in 2007, 2009 and 2011.

Methods: This study was a secondary data analysis of information retrieved from the Puerto Rican Cardiovascular Surveillance System obtained from the Puerto Rican Department of Health for the residents of Puerto Rico in 2007, 2009, and 2011. The sample included individuals aged 18 or older who presented with an incidental AMI. Univariate and multivariate logistic regression models were used to assess the association between marital status and in-hospital mortality after an AMI. Covariates included age, sex, social history, and comorbidities.

Results: Among the study participants, 414 were single, 1,811 were married, 153 were separated/divorced and 472 were widowed. Widowed status was more common in the elderly population, age groups 75-84 and ≥85, than any other marital status representing 37.9% and 30.7% respectively (p-value < 0.001). The unadjusted odds ratio (OR) for mortality of widowed patients was 1.7 (95% confidence interval (CI) 1.1-2.4). However, after adjustment, the OR decreased to 0.9 and became statistically insignificant (95% CI 0.5-1.7). The adjusted OR were 0.6 (CI 0.3-1.4; p-value 0.215), 0.6 (CI 0.2-2.0; p-value 0.394), and 0.9 (CI 0.5-1.7; p-value 0.736) for single, divorced/separated, and widowed patients respectively when compared to married patients.

Conclusions-Implications: No association was found between marital status and in-hospital mortality in patients with incidental AMI in Puerto Rico during the years of 2007, 2009, and 2011. Further research may be required to investigate mortality rates during the time period following hospital discharge. This can have implications on optimal myocardial infarction patient management in-hospital and after discharge.

P2

Association of serum BNP at admission and in-hospital complications in acute decompensated heart failure patients in Puerto Rico

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Keywords: BNP, Acute Decompensated Heart Failure, In-Hospital Complications, Brain Natriuretic Peptide, Hispanic

Introduction and Objective: Elevated BNP levels at admission in patients with acute decompensated heart failure (ADHF) have been found to be a significant predictor of increased hospital stay, all-cause mortality, and cardiovascular mortality. Admission BNP levels for patients with ADHF have also been found to vary among different racial and ethnic groups. Studies of BNP levels in Hispanic populations with heart failure are limited. The objective of this study is to examine the association of serum BNP at admission and in-hospital complications (mortality, stroke/TIA, PE, MI, cardiac arrest, arrhythmia) in Hispanics with ADHF in Puerto Rico.

Methods: This is a secondary analysis of the Puerto Rico Cardiovascular Disease Surveillance System database, a non-concurrent prospective cohort of data collected from 2007, 2009, and 2011. The study sample included 389 adult patients with ADHF and serum BNP level at admission from 21 Puerto Rican hospitals. Patients with dialysis were excluded. Serum BNP at admission was analyzed as a continuous variable. We utilized logistic regression modeling to examine the association of serum BNP at admission and in-hospital complications while controlling for potential confounders (age, gender, hypertension, diabetes, smoking, excessive alcohol use, renal failure).

Results: A larger proportion of the study sample were aged 65 or older (59.9%), had a BMI category of overweight or obese (72.1%), and had a prior medical history of hypertension (90.5%). After adjusting for age, BMI, atrial fibrillation, and renal failure, for every approximately 2.7-fold increase in admission BNP level, the odds of having an in-hospital complication were increased by 90% (OR=1.9;

95% CI= 1.4-2.6). Also, older age and a history of renal failure were independently associated with in-hospital complications.

Conclusion-Implications: We found that the odds of having an in-hospital complication increased by 90% (almost doubled) for every approximately 2.7-fold increase in BNP level at admission for Puerto Rican patients with ADHF. This maintained significance after adjustments for confounders. In the clinical setting of patients admitted with suspected ADHF, elevated BNP levels may be useful in identifying those with increased risk of in-hospital complications.

P3

Atypical symptom presentations of AMI as a factor for in-hospital mortality

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Keywords: Acute Myocardial Infarction, Typical Symptoms, Atypical Symptoms, Gender, Mortality

Introduction and Objective: Acute Myocardial Infarction (AMI) is one of the leading causes of death in the United States. The most common symptom of an AMI is chest pain, but an AMI can also present with atypical symptoms such as anxiety, lightheadedness, nausea, and diaphoresis. The way in which symptoms present in an AMI dictate whether or not patients seek immediate treatment or if they seek treatment at all, ultimately, affecting the quality of care provided by emergency department personnel. The objective of this study is to examine the association of symptom presentation and in-hospital mortality in Hispanics with an AMI residing in Puerto Rico.

Methods: Patients from the Puerto Rico Heart Attack Study hospitalized during 2007, 2009, and 2011 with a validated AMI diagnosis were included for analysis. Typical symptoms were defined as chest pain, pressure, tightness or discomfort, while atypical symptoms were all other complaints. We utilized multivariate logistic regression models to examine the association of AMI symptoms and in-hospital mortality while controlling for potential confounders. We also determined whether gender played a role in symptom presentation.

Results: Out of the 2965 patients included in the study, 1640 (55.31%) patients were men. / After adjusting for age, gender, hypertension and symptoms at presentation, the findings confirmed patients experiencing atypical symptoms had an average of 64% increase in in-hospital mortality (OR=1.64, 95% CI=1.14-2.35; p=0.008).

Conclusions-Implications: Puerto Ricans with AMI presenting with atypical symptoms had a significantly higher in-hospital mortality rate than those presenting with typical symptoms, averaging a 64% increase after controlling for gender, hypertension and age. Additionally, patients who were women, non-smokers, hypertensive and from an older population were more likely to present with atypical symptoms. Thus, knowledge on the risk of mortality according to the symptomatology at presentation may be useful in promoting awareness. Ultimately, such patients could seek proper help in a timely manner, leading to a decrease in AMI-related mortality.

P4

The effect of type II diabetes on in-hospitality mortality in patients with decompensated heart failure

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Keywords: Heart Failure, Type II Diabetes, Hispanic, Mortality

Introduction and Objective: Heart failure frequently presents with multiple comorbidities, one of the most common being type II diabetes. Previous studies have shown that those with type II diabetes and heart failure have higher rates of mortality. However, such studies have predominantly been performed in Caucasian populations and not in those of different ethnicity, particularly Hispanics. This study aims to determine if Puerto Ricans with type II diabetes hospitalized with an acute decompensated heart failure (ADHF) are at a greater risk of in-hospital mortality than their counterparts without type II diabetes.

Methods: We performed a secondary analysis on de-identified information collected from a non-concurrent prospective study, the Puerto Rico Cardiovascular Surveillance Study (PRCVSS), from 21 hospitals in Puerto Rico during 2007, 2009, and 2011. The PRCVSS studies the diagnosis, clinical characteristics, treatment, and outcomes of stroke, myocardial infarction (MI), and heart failure (HF) in a mostly Hispanic population. Patients in our study met the Framingham criteria for acute decompensated heart failure (ADHF). ADHF developed secondary to admission for another acute illness or after an interventional procedure were excluded. Patients with type II diabetes were identified by a previous diagnosis. The outcome measured in this study was mortality.

Results: Our final sample comprised of 1411 Puerto Rican patients (half were between 65-84 years old, and 53% were males). The odds of mortality among those with diabetes were similar to those without diabetes (OR: 1.0; 95% CI: 0.5-1.9) after adjusting for potential confounders. We also found a high prevalence of comorbidities including hypertension (83.1%), obesity (30.8%), end stage renal disease (28.3%), hyperlipidemia (22.5%), previous MI (21.2%), chronic obstructive pulmonary disease (18.9%), coronary artery bypass surgery (16.9%), atrial fibrillation (15.8%), peripheral vascular disease (7.4%), and previous stroke (4%).

Conclusion-Implications: Despite the high distribution of comorbidities, findings of our study suggest that there is no independent association between type II diabetes and short-term mortality in hospitalized patients with acute decompensated HF, which differs from published reports conducted in Caucasian populations. Further research to better understand this difference should be implemented in this and in other Hispanic populations.

P5

Association between gender and prehospital delay time for incident acute myocardial infarction (AMI) in Puerto Rican adults

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Keywords: Acute Myocardial Infarction, Gender, Cross-Sectional Study, Puerto Rico

Introduction and Objective: There is ample evidence in the literature dedicated to quantifying and emphasizing the importance of presentation for treatment within the first hour of symptoms on the ability to save myocardium in the event of an acute myocardial infarction (AMI). The objective of this study is to determine if there is an association between gender and prehospital delay time (PHDT) for incident AMI in the Hispanic population presenting to emergency rooms (ERs) in Puerto Rico.

Methods: This is a secondary analysis of the Puerto Rico Cardiovascular Disease Surveillance electronic database. We performed an observational, non-concurrent, cross-sectional study. The study sample consisted of adult residents in the island of Puerto Rico who were hospitalized with a first-time acute myocardial infarction, as per WHO criteria, in years 2007, 2009, and 2011. Analyses included descriptive analysis, binary logistic regression, and bivariate analysis via chi-square tests.

Results: During the study period, a total of 3,218 patients were hospitalized with an incident AMI. Compared with men, women were older, of normal or low weight, and had a history of hypertension, diabetes, CHF, and stroke/TIA. After adjusting for potential confounders we found an odds ratio of 1.37 with women more likely to have PHDT > 60 minutes. There was no significant association between gender and PHDT > 240 minutes. Patients were also more likely to experience increased PHDT if they were older or had ever smoked.

Conclusions-Implications: This study suggests that women, smokers and older patients in Puerto Rico are less likely to seek timely medical care following AMI. Efforts should be made to elucidate this disparity in order to improve myocardial infarction outcomes.

P6

A comparative analysis of stroke in Haitian and non-Haitian populations of South Florida

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Keywords: Stroke, Haitian, Insurance

Introduction and Objective: The USA holds the second largest Haitian population outside of Haiti; however, there is only one publication within PubMed concerning the management of Haitian stroke patients, their outcomes, and the comorbidities surrounding their cerebrovascular accidents. Our objective was to compare the demographics, comorbidities, management and outcomes in the Haitian and non-Haitian patients with stroke treated at Baptist Hospital in Miami.

Methods: We conducted a non-concurrent cohort study utilizing the Baptist Hospital “Get with the Guidelines Stroke Database.” Inclusion criteria were defined as Haitian and non-Haitian patients with a diagnosis of stroke, treated between the years 2008-2014. Two-tailed t test analysis was performed on continuous variables (e.g. age, BMI, cholesterol; triglyceride levels, Hgb A1c levels, systolic/diastolic blood pressures). Two-way contingency table analysis was used to compare rates of comorbidities (atrial

fibrillation, hypertension, CAD, and other cardiovascular risks), insurance status, rates of TPA, and patient outcomes.

Results: Seventy-two Haitian and hundred-forty four non-Haitian patients were identified. Insurance status analysis resulted in a clear difference between Haitian and non-Haitians (p-value <0.001). Haitians were less likely to be covered via Medicare (45.1% vs 69.4%), and more likely to fall into the Medicaid category (23.9% vs 13.2%) or qualify as self-pay (28.2% vs 6.9%). Clinical characteristics were comparable between cohorts, including rates of previously diagnosed comorbidities as well as home prescription medications. Differences in stroke category rates were not statistically significant. Intervention at the tertiary treatment center was similar for both groups, as were rates of medical interventions and patient education. Ambulatory status indicated that both cohorts had higher rates of ambulation on admission as compared to discharge, however differences were not statistically significant.

Conclusions-Implications: This study found no major differences between Haitian and non-Haitian stroke patients treated at Baptist Health South, but did find a significant difference concerning insurance coverage. This suggests access to insurance could be the most important confounder of all. In future studies examining differences in time to presentation for Haitians could present an opportunity for community intervention to change meaningful clinical outcomes.

P7

CT vs. MRI in the diagnosis of acute stroke impact in-hospital mortality among Puerto Rican patients

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Keywords: Stroke, MRI, CT

Introduction and Objective: CT and MRI are the most common imaging modalities used to diagnose acute stroke. The association between diagnostic imaging technique of acute stroke and in-hospital mortality is an important one, and more studies need to analyze this relationship. The objective is to examine the association of CT vs. MRI in the diagnosis of acute stroke impact in-hospital mortality among Puerto Rican patients.

Methods: Patients from the Puerto Rican Surveillance Cardiovascular database that were hospitalized in 2007, 2009, and 2011 and diagnosed with stroke with either CT or MRI were included for analysis. 2,902 patients met the inclusion criteria. We utilized bivariate analysis to analyze the association of CT and MRI and in-hospital mortality while controlling for potential confounders (gender, age, renal failure, insurance status, BMI, stroke type, and stroke team involvement).

Results: After adjusting for age, gender, and comorbidities, patients who had an MRI were significantly less likely to die as compared with those who solely had CT (OR = 0.3, 95% CI=0.2-0.4; p<0.001). Patients 65 years and older were significantly more likely to die compared to those under the age of 65 (OR = 1.8, 95% CI=1.1-2.0; p<0.002). Patients with renal failure were significantly more likely to die (OR = 2.0, 95% CI=1.4-3.0; p<0.001). Patients with hemorrhagic stroke were significantly more likely to die (OR = 2.2, 95% CI=1.6-3.2; p<0.001).

Conclusions-Implications: Puerto Rican stroke patients who had an MRI were significantly less likely to die in the hospital as compared with those who only had CT.

P8

Association between marital status and short-term mortality in Puerto Rican adults hospitalized with an acute stroke in 2007, 2009 and 2011

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Keywords: Mortality, Marital Status, Stroke, Hispanic Americans

Introduction and Objective: Stroke is a leading cause of morbidity and mortality. The Hispanic population is growing rapidly in the U.S. and presents different social determinants for stroke compared to other populations. Family patterns play a large role in Hispanic culture, thus we are exploring the association of marriage on short-term mortality rates in Puerto Rican stroke patients. Our objective is to study the association between marital status and short-term mortality in Puerto Rican adults hospitalized with acute stroke.

Methods: This is a secondary data analysis of the Puerto Rican Cardiovascular Surveillance System, which has a non-concurrent prospective design. Our study population includes Hispanic residents of Puerto Rico hospitalized for an incidental, acute stroke during 2007, 2009 and 2011. The main independent variable was patient's marital status on admission. The dependent variable was in-hospital mortality. We conducted a descriptive analysis of selected variables, and Chi-squared analysis to examine the independent association of categorical variables. Potential confounders were adjusted for through multivariate analysis. The data were further stratified due to a significant interaction between type of stroke and marital status.

Results: Significantly (p-value <0.05) higher proportion of patients with diabetes (53.5% vs. 46.5%), BMI >18.5 Kg/m2 (29.5% vs. 40.1% vs. 25.7%) and hypertension (86.7% vs. 13.3%) were observed in the married as compared to the not married groups. Mortality was similar in married vs. not married groups (11.7% vs. 13.2%; p=0.5). Incidentally, we found that hemorrhagic stroke patients had a significantly higher mortality rate than ischemic stroke patients (21.7% vs. 9.0%; p<0.001). The unadjusted model showed 20% higher odds of dying among not married than married patients (OR=1.2+/-95%CI 0.9-1.5); however, after adjusting for age and gender, the odds decreased to 10% (OR=1.1+/-95%CI 0.6-1.3). Further stroke type stratified analysis showed that not married patients with ischemic stroke were 50% more likely to die compared to married patients (OR=1.5+/-95%CI 1.1-2.2).

Conclusion: Our study showed no statistically significant association between marital status and mortality but mortality was significantly higher in ischemic vs. hemorrhagic stroke patients. Lifestyle factors, including marital status, and their role on higher mortality should be further studied in ischemic stroke patients.

P9

The association of smoking and survival time in adult patients diagnosed with advanced stage hepatocellular carcinoma within Florida

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Keywords: Prognosis, Cigarette, Sorafenib, Metastasis

Introduction and Objective: Smoking has clearly shown to have adverse health effects, however whether it is associated with life expectancy in advanced metastatic liver cancer patients is yet to be determined. The aim of our study was to evaluate the association between smoking and mortality in advanced stage hepatocellular carcinoma (HCC) patients while on non-surgical treatment in a retrospective cohort study.

Methods: A retrospective cohort of 642 adult patients diagnosed with HCC and undergoing non-surgical treatment between 2001 and 2010 in Florida was identified and analyzed.

Results: The results of the Cox regression models showed smoking was not associated with decreased survival time in HCC patients (hazard ratio (HR) 0.97; 95% confidence interval (CI) 0.81-1.15). After adjusting for age, race, stage, region, and Sorafenib treatment the HR did not change [HR 0.98; 95% CI 0.82-1.17). There was a statistically significant risk increase of mortality for patients with distant metastasis [HR 1.27; 95% CI (1.08-1.51).

Conclusion-Implications: There was no association between smoking and survival time in patients with advanced stage HCC. However, it is still recommended that physicians assist patients with smoking cessation as smoking cessation may provide other health benefits.

P10

Effects of location and other clinical features on survival in gliosarcoma patients

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Keywords: Gliosarcoma, Glioblastoma, Neurosurgery

Introduction: Gliosarcoma has been understood as a histopathological variant of glioblastoma. Gliosarcoma tumors possess characteristics (e.g., temporal lobe predilection) that distinguish them from glioblastoma. These differences suggest each tumor may be a unique clinical entity. The objective of this study was to determine the association between clinical characteristics, including tumor location, with survival in gliosarcoma patients.

Methods: This was a retrospective cohort of all gliosarcoma patients at a single institution during 2004-2015 (n= 43). Study sample was selected using the NIH Neuro Oncology Branch Natural History Database. The main independent variable was tumor location and the dependent variable was overall survival. Tumor location was categorized as temporal, other single lobe (frontal, parietal, occipital), and multilobar (> 2 lobes). Bivariate analysis evaluated associations between exposures with potential confounders (age, gender, and KPS score) and also between the above clinical characteristics with survival. Kaplan-Meier curves and log-rank test evaluated survival by location, age, gender, and KPS. Unadjusted and adjusted hazard ratios and 90% confidence intervals for survival were calculated using proportional hazards Cox regression.

Results: Median overall survival for the entire sample was 24.2 months. Survival was decreased for patients with temporal tumors

(18.6 months). Log-rank test did not show significant difference in survival curves when all tumor locations, including multilobar disease, were considered (p= 0.128). However, survival associated with temporal location was significantly worse when compared to single-lobe disease in a non-temporal location (log rank test, p= 0.041). Unadjusted hazard ratios indicated that patients with temporal lobe tumors carried a three-fold worse prognosis than patients with tumors in another single lobe (HR=2.9; CI: 1.2-7.2). This association persisted after adjusting for age, gender and KPS (HR=4.1; CI: 1.3-12.6).

Conclusions: Tumor location has profound implications for neurosurgical management. The results of our study indicate that for gliosarcoma patients, temporal lobe location is strongly associated with decreased survival when compared to location in the frontal, parietal, or occipital lobes. This is consistent with results from previously published studies that further reported a paradoxical increase in overall survival for glioblastoma tumors in the temporal lobe. It is reasonable to suspect that variability in extent of resection may explain location-specific differences in outcome. However, gliosarcoma and glioblastoma are currently managed as a single clinical entity such that neurosurgical intervention in any one location would not vary between tumor types. These observations are consistent with tumor-specific variables as a potential explanation for differences in clinical behavior. Higher-powered studies are needed to further investigate these results.

P11

Comparison of perioperative and functional outcomes of robotic partial nephrectomy for cT1a versus cT1b renal masses

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Keywords: Nephrectomy, Robotic, Partial Nephrectomy

Introduction and Objectives: Partial nephrectomy is the recommended treatment of T1a renal masses and is increasingly being performed for T1b renal masses when feasible due to the advantages of nephron-sparing surgery. We compared perioperative and functional outcomes of patients with cT1a or cT1b renal masses undergoing robotic partial nephrectomy (RPN) in a large multi-institutional study.

Methods: The present retrospective IRB approved multi-institutional study utilized a prospectively maintained database to identify patients undergoing RPN by 6 surgeons for a solitary clinical T1a (n=1307, 77.6%) or T1b (n=377, 22.4%) renal mass from 2006 to 2016. Perioperative outcomes in addition to renal function outcome at discharge and at a median follow-up of 12.2 months (IQR: 6.0-25.7; Range: 2.9-106.2) were compared in univariable analysis (Mann-Whitney U and Chi-squared tests of Independence) and multivariable regression analysis (linear, logistic, cox proportion hazards) adjusting for surgeon performing the RPN and date of surgery.

Results: In univariable analysis, clinical stage T1b was associated with longer operative time (190.0 vs. 159.0; p<.001), greater warm ischemia time (WIT) (18.8 vs. 15.0 minutes; p<.001), higher estimated blood loss (150.0 vs. 100.0 mL; p<.001), more intra-operative complications (5.6% vs. 2.4%, p=.034), and more surgical post-operative complications (10.1% vs. 5.7%; p=.002). Results were similar in multivariable analysis with additional findings including more overall post-operative complications (OR=1.55, p=.015) and longer length of stay (p<.001) associated with cT1b masses. No differences in the risk progression of CKD stage at 12.2 months (p=.137), positive surgical margins (PSM) (p=.793), or major post-operative complications requiring invasive and/or ICU management were observed (p=.428).

Conclusions: Although our study shows a longer operative time, higher WIT, and complication rate for patients undergoing RPN for cT1b renal masses, the magnitude of these differences is small and was not associated with serious complications, PSM or worse renal function outcome at 12 months. RPN should be considered for cT1b lesions when anatomical and spatial location allow for a feasible procedure. Of course, team experience should also be taken into consideration.

P12

Effect of surgical timing on postoperative outcomes in patients with acute appendicitis

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Keywords: Appendectomy, Surgical Complication, Surgical Delay

Introduction/Objective: It is known that the primary treatment for acute appendicitis is urgent appendectomy, however controversy exists over how urgently surgery needs to be performed. This paper aims to determine the relationship between length of time from ED presentation to operating room and postoperative outcomes including SSI, perforation, costs, and length of stay.

Methods: All medical records from January 2012 to January 2016 were gathered and data was reviewed for patients who underwent laparoscopic appendectomy at an acute care community hospital in South Florida. Time of presentation to the emergency department (ED) and time of arrival to the operating room (OR) were used to determine surgical timing which was split into three categorical groups (<8 hours, 8 to 17 hours, and 17 to 30 hours). Presence of perforation was determined intraoperatively and diagnosis of appendicitis was confirmed via pathology reports. Postoperative stay and follow up appointments were utilized to determine if a surgical complication developed. Length of stay and direct costs were also analyzed.

Results: A total of 63 patients were observed. The majority of patients (49.2%) had surgery within 8 to 17 hours of presentation in the ED. No surgical site infections or intra or postoperative complications were observed. Perforation rates were 28.6%, 12.9%, and 16.7% in patients who had surgery between 17-30 hours, 8-17 hours, and less than 8 hours respectively. However, the variation between the three groups was not statistically significant ($\chi 22df = 1.654$, $p = 0.437$). Direct costs were higher for those with delayed surgeries ($\chi 22df = 8.183$, $p = 0.017$). Mean costs for surgery within 17-30 hours, 8-17 hours, and less than 8 hours was $5,643, $5,202, and $4,574 respectively.

Conclusions: No surgical complications (SSI or intraabdominal abscess) were observed and there was not a statistically significant difference in perforation rates between study groups. Delaying appendectomy was associated with increased direct costs to patients and length of hospital stay. We suggest a follow up study be performed with a larger sample size to help gain insight into this relationship.

P13

Evaluating diagnostic imaging practices prior to gallbladder surgery in a community hospital

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Keywords: Gallbladder, Surgery, Biliary System, Diagnostic Testing, Operative Complications

Objectives: In the study of patients with acute gallbladder disease, different imaging technics are used to test different diagnostic hypotheses. Ultrasound imaging (US) is usually the first and more informative test performed. Other tests (CT scan, MRCP, MRI, etc.) might be needed according to clinical history, findings in the physical exam, or findings from previous imaging. Our objectives are to describe image test frequency and patterns of use in patients undergoing cholecystectomy, and clinical outcomes. We are reporting a pilot study aimed at assessing feasibility, availability of relevant variables, and relative frequency of events. Results will be used for study protocol refinement and sample size estimation.

Methods: A historical cohort of randomly selected cholecystectomies from a hospital in South Florida (2014-2015) was assembled. Variables included administered imaging tests and their sequence, demographics, comorbidities, time to surgery, length of stay, complications, surgical site infection, need for hospital revisit, and direct costs. Data sources: direct abstraction from clinical records. Descriptive statistics were computed and associations were explored using Chi-squared test and T-Test.

Results: In total 146 patients were included. Mean age was 47.3 (SD 18.1) years, 72% were females, 79.5% were white Hispanics and 108 (74%) subjects were out-patients. Co-morbidities (diabetes, hypertension and cardiovascular disease) were more prevalent among inpatients. US was the most frequently performed test (88.4%), followed by CT (50%), and was the first test used in 70% of cases. Frequencies of other tests were: HIDA-PIPIDA 37.0% (first image in 2%), MRCP 26.0%, and ERCP 7.5%. Neither HIDA-PIPIDA, MRCP, nor ERCP were ever administered alone.

Patterns of test utilization differ between in and out-patients: Inpatients were more likely to receive a CT (RR = 1.67; 95% CI 1.24 to 2.25), an MRI (RR=8.5; 95% CI 1.1 to 62.1) and an MRCP (RR=3.5; 95% CI 2.07 to 5.82) and less likely to receive an ERCP (RR=0.51; 95% CI 0.25 to 0.98). Of those who had only one imaging test done (n = 32, 21.9%), the majority were outpatients (90.6%) and had only the US done (93.8%). There were no intra-operative complications, post-operative complications, or surgical site infections, and 21.1% and 11.1% of inpatients and outpatients, respectively, returned to the hospital with some complaint, although this difference was not statistically significant (p=0.125).

Discussion: This study shows that US is the most common imaging test performed in subjects undergoing emergency cholecystectomy and is usually the first imaging test performed. Second, clinical outcomes were uniformly satisfactory, with 100% of patients surviving and free from intra or postoperative complications. It could be expected that the number and variety of additional image tests should be less than that observed here, and maybe the efficiency of image test utilization could be improved. The results from this pilot justify the conduction of a proposed full-scale study on diagnostic imaging practices in the management of patients with acute upper abdominal quadrant pain and/or gallbladder disease, aimed at assessing their diagnostic utility and their impact on the of the health care provided to these patients.

P14

Case study: Operative treatment of symptomatic osteochondral lesion of the tibial plafond

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Keywords: Osteochondral Lesions, Tibia Plafond, Operative Treatment

Objective: Ankle pain due to osteochondral lesions in the ankle are becoming more of a common source of ankle pain than previously identified. The exact pathophysiology of the condition has not been clearly determined; however it has been sited that it could be due to a large variety of etiological factors including trauma, typically coming from ankle sprains being the most common source. Magnetic resonance imaging has become the most important technological advancement in detecting and diagnosing osteochondral lesions of the ankle. This has led to the advancement for further treatment plans. This particular case study shows a patient who elected for operative treatment with successful outcome.

Case: A 40 year old female with no significant past medical history or recollection of ankle trauma besides previous ankle sprains, presents with chronic pain in the posterior lateral ankle with no relief from all conservative treatments including NSAIDS, physical therapy and ankle brace. Previous magnetic resonance imaging reveals a 0.9x1.2 cm sharply demarcated subcondral bone cyst, in the right posterior lateral tibial plafond. The patient was adviced of surgical intervention and the patient agreed. The bone cyst was identified intraoperatively utilizing fluoroscopy and a 1x1.5cm window was cut directly over the lesion and the cortex was removed to reveal the bone cyst within. The bone cyst was the cleaned via the use of a bone curette and power rasp and the bone window was prepared on the backtable to removae all remnants of bone cyst and was utilized as autograft material. The remaining void was then packed with cancellous bone chips and covered with the patient's autologous cortex window. To maintain the correction of the bone window, a single 4-hole square plate was utilized to secure the window with 2 orthopedic screws. Application of amniotic membrane graft was the applied over the previous lesion site and the wound site was reapproximated utilizing 3-0 Monocryl and 4-0 Nylon sutures.

Conclusions: The recommended treatment of symptomatic osteochondral lesions of the ankle is curettage and autologous bone grafting, the course we pursed in the present case. Bone graft substitutes can also be used to "backfill" the evacuated cyst defect as we also did with the cancellous bone chips. We have presented the rare case of a symptomatic osteochondral lesion in the distal tibial plafond that was suitably treated with surgery to evacuate the lesion and to "backfill" the defect with cancellous bone graft substitutes along with autogenous cortical bone. From our understanding of the published date and our experience with patients with symptomatic osteochondral lesions, surgical treatment is indicated if symptoms are present or if the diagnosis remains uncertain after advanced imaging has been undertaken.

P15

Diode laser cyclophotocoagulation outcomes: Comparison of micropulse and titrated "pop" techniques

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Keywords: Transscleral Cyclophotocoagulation, Glaucoma, CPC, TSCPC

Introduction: Glaucoma is a leading cause of worldwide blindness; refractory glaucoma is often treated with transscleral cyclophotocoagulation (TSCPC), which works by reducing the intraocular pressure (IOP). The current standard TSCPC setting uses a high intensity, short duration laser. Recently, a new setting has been introduced, which employs a lower intensity and higher duration, and which may have a similar efficacy and better side effect profile. The objective of this study is to determine whether slow burn TSCPC is comparable to the standard setting TSCPC in efficacy and/or side effect profile.

Methods: All patients with glaucoma that opted to receive TSCPC at either Bascom Palmer Eye Institute or Miami Veteran Affairs Hospital, both urban hospitals, between 2000 – 2015, were enrolled in this retrospective cohort study. The two outcomes evaluated were success of treatment (defined as IOP reduction of >= 30%, IOP > 6mmHg, with no loss of >= 2 lines of vision, and no glaucoma-related follow-up procedures being performed) and presence of moderate to severe adverse reactions (including loss of visual acuity, hyphaema, hypotony, and conjunctival burn). Sex, ethnicity, age, glaucoma type, and number of pre-TSCPC procedures were examined for potential confounding. Univariate analysis, bivariate analysis (with chi-square, Fischer's exact tests), and multivariate analysis with Cox regression were used to evaluate data.

Results: Seventy-six glaucomatous eyes were analyzed; twenty-six (34%) received TSCPC with the standard setting, and fifty (66%) patients with the slow burn setting. There was no statistically significant difference between these groups in regards to age, sex, ethnicity, glaucoma type, or number of glaucoma procedures received prior to TSCPC treatment. Patients undergoing slow burn TSCPC had less risk of failure than those in the standard TSCPC group, although this difference was not statistically significant (unadjusted HR = 0.9, 95% CI = 0.5 – 1.6) (p = 0.53). After adjusting, the association between slow burn setting and success seemed to be strengthened (adjusted HR = 0.8, 95% CI = 0.4 – 1.6), but the association was still not significant. Eyes treated with slow burn TSCPC had less risk for complications (HR = 0.54, 95% CI = 0.17 – 1.69), though the difference was not statistically significant (p = 0.32). There were not enough adverse reactions to allow for adjusting.

Conclusion: We cannot determine if there is a difference in either the efficacy or the side effect profile of slow burn compared to standard setting TSCPC. While the results seem to indicate that the slow burn setting may yield a better side effect profile with comparable efficacy, the sample size was not large enough to determine that this difference is statistically significant.

P16

Longitudinal study of dark adaptation as a functional outcome measure for age-related macular degeneration

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Keywords: Dark Adaptation, Age-Related Macular Degeneration, Rod-Intercept Time

Introduction and Objective: Impairments in dark adaptation (DA) as measured by rod intercept time (RIT) have previously been correlated with age-related macular degeneration (AMD) severity and presence of reticular pseudodrusen (RPD) using cross-sectional, observational data. In this longitudinal analysis, we assess whether RIT changes significantly over 2 years and whether RIT change is correlated with AMD severity.

Methods: Participants >50 years of age were assigned into groups based on fundus characteristics: no large drusen (Group 0), unilateral large drusen (Group 1), bilateral large drusen (Group 2), late AMD in one eye with large drusen in contralateral eye (Group 3), presence of RPD regardless of AMD status (Group 4). One study eye per participant underwent DA testing using a prototype AdaptDx device (MacuLogix, Hummelstown, PA) at baseline, 3-, 6-, 12-, 18 months, and 2 years. Wilcoxon tests were used to compare baseline and 2-year RIT across all eyes and per group. Linear regressions were also / performed to determine slope of change in each eye. Mann-Whitney tests were used to compare slopes between groups.

Results: Out of 116 participants with measurable baseline RIT under test ceiling (mean age 75.4±9.4, 58% female), 81 participants (mean age 75.3±9.2, 54% female) had 2-year RIT on the same DA protocol (82% focal bleach at 5o). Eyes that underwent cataract extraction/intraocular lens placement during the study (n=5/81) had significant RIT prolongation vs eyes that did not change phakic status (median ΔRIT=7.10 vs 1.15 mins, Mann-Whitney p=0.003) and were thus excluded from analysis. In all remaining participants (n=76/81), RIT increased by a median value of 1.15 min at 2 years (Wilcoxon p<0.0001). RIT at 2 years was not significantly changed from baseline in Group 0 (Wilcoxon p=0.097; n=37/76), but was / significantly increased in Groups 1-3 combined (Wilcoxon p=0.0002; n=38/76). Additionally, slope of change was significantly greater in Groups 1-3 vs Group 0 (median slope RIT=0.75 vs 0.27 min/year, Mann-Whitney p=0.036).

Conclusions-Implications: Dark adaptation as measured by RIT demonstrated a small but statistically significant prolongation over 2 years in eyes with AMD, not seen in control eyes. Change in phakic status was also associated with delayed DA. Prolongation of dark adaptation may be a useful phenotypic change of visual function in the monitoring of AMD progression.

P17

Predictive factors affecting HPV vaccination in adolescent females aged 12-17

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Keywords: Human Papillomavirus (HPV), HPV Vaccination, Predictive Factors, Provider Recommendation

Introduction and objective: Human papillomavirus is a sexually transmitted virus that has been linked to cervical cancer and genital warts. The HPV vaccine, which protects against HPV strains 16 and 18, continues to be underutilized in adolescent females. This study looks at predictors of HPV vaccination in adolescent females aged 12-17 in the United States.

Methods: Cross-sectional study based on secondary analysis of the 2007 data from the National Survey of Children's Health Database (NSCH). Our study selected all female adolescents whose parents responded to the question "Girl has received HPV shot?" Exposures assessed included race/ethnicity, primary household language, poverty level, mothers and fathers education levels, age of child, access to personal healthcare provider, adequacy of insurance, utilization of health care in the last year, and provider recommendation regarding HPV vaccination. Associations between exposures and outcome were analyzed estimating odds ratios and 95% confidence intervals, through bivariate analyses and logistic regression.

Results: A total of 16,786 respondents were included. Most participants were English speaking females with an income of >400% of the poverty level, and mothers and fathers with education level greater than high school. The majority of female adolescents were 14 or 15 years old, insured, and utilized healthcare twice in the last year. 68.3% of patients did not have provider recommendation for vaccination. Variables independently associated with an increased odds of vaccination included: multiracial race (OR 2.4; 95% CI 1.1-4.9), age 16-17 (OR 1.7; 95% CI 1.2-2.4), and provider recommendation of HPV vaccination (OR 20.0; 95% CI 15.4-25.8). Poverty levels of 101%-200% (OR 0.4; 95% CI 0.2-0.7) and 201%-300% (OR 0.4; 95% CI 0.2-0.7) decreased the odds of vaccination.

Conclusions-Implications: Provider recommendation is most strongly associated with HPV vaccination in young girls. Increasing provider recommendation could thus increase HPV vaccination rates. Additional studies would be useful to confirm our findings in a more recent data sample.

P18

The association between gender and priority of admission in Florida stroke patients

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Keywords: Priority of Admission, Gender Identity, Stroke, Gender Disparities, Triage

Introduction/Objective: Stroke is the fifth leading cause of death in the United States and results in significant morbidity and mortality annually. Its wide prevalence and critical nature make it essential to recognize and properly triage patients with symptoms of stroke so that appropriate time-sensitive interventions may be delivered. Many studies have delineated gender differences in risk, diagnosis and treatment of stroke; however, limited information exists on the association between gender and Emergency Department (ED) triage priority. The objective of this study is to determine if there is a gender difference in the assignation of an emergency priority of admission code among Florida stroke patients.

Methods: An observational cross-sectional study was performed through secondary analysis of the Florida Stroke Registry, composed of hospital discharge data collected by the Agency for Healthcare Administration (AHCA) on Florida stroke patients from 2012. A descriptive analysis was utilized to profile the study population, calculating measures of centrality and dispersion of demographic variables. We tested associations of our bivariate analysis using chi-square tests, then performed a multivariate analysis using logistic regression to control for confounders. Odds ratios were used to measure associations.

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

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

P19

Is the effect of parental physical activity on pediatric obesity modified by living in a rural area? A cross-sectional study

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Keywords: Parents, Motor Activity, Exercise, Pediatric Obesity, Rural & Urban Population

Introduction and Objective: Pediatric obesity is a public health issue of critical importance, with obese children having a higher risk of multiple comorbidities. Our study sought to assess if there is an association between parental physical activity and pediatric obesity, and if that association is modified by rural vs. urban residence.

Methods: The 2007 National Survey on Children's Health (NSCH) was a cross-sectional study of the general population using random sampling (n=91,642). After excluding children with a history of brain injury, bone or joint problems and developmental delay, children with a body mass index (BMI) <5th percentile, and participants with missing information on main variable used in this study, the final sample size consisted of 18,229 participants. Parents were physically active if they engaged in 20 minutes or more of vigorous physical activity in ≥3 days during the previous week. Households were classified as having no physically active parents, one active parent or two active parents. Urban and rural residential areas were defined according to Metropolitan Statistical Area (MSA). Children were considered to have a healthy weight if their BMI was ≥5th percentile and ≤85th percentile, and overweight or obese if their BMI was >85th percentile. Uni-variable and multivariable logistic regression models were used to study the association between parental activity levels and pediatric obesity while exploring the potential effect modification of these households according to MAS status through odds ratios and 95% confidence intervals.

Results: There was no statistically significant association between parental physical activity (one parent active ≥3 days/week (OR 0.92 95% CI 0.77-1.32) or both parents active ≤2 days/week (OR 1.06 95% CI 0.86-1.32)) and pediatric obesity, when compared to both parents active ≥3 days/week. Although living in a rural household carried a 26% increased odds of being overweight (OR 1.26 95% CI 1.08-1.46), there was no evidence of MSA status been an effect modifier of the observed relationship between parental activity and childhood BMI.

Conclusions-Implications: Parental physical activity did not influence pediatric overweight/obesity. This was not affected by MSA status. Additional inquiry is required to determine whether other covariates not addressed in the 2007 NSCH are associated with childhood obesity.

P20

The association between health insurance status and mammogram screening in Northwest Miami-Dade households

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Keywords: Health Insurance, Mammogram Screening, Northwest Miami-Dade

Introduction and Objective: Breast cancer is the second leading cause of cancer-related death in women in the United States. Despite efforts to increase screenings with mammograms, many barriers exist that prevent women from getting the proper health screenings, including lack of healthcare coverage. We aim to assess the association between insurance status and mammogram screening among households of Northwest Miami-Dade.

Methods: We performed secondary analysis of data collected cross-sectionally by the FIU Community Benchmark - Northwest Miami Dade Survey (2009 to 2010). The dependent variable was not obtaining a screening mammogram during the last two years in women >40 years old. The independent variable was health

insurance status (uninsured/insured), which was determined by questioning about any gap of health insurance in the past 12 months. Other relevant variables that were explored for their role as potential confounders included race, language, education level, income level, and employment status. Independent associations were assessed using logistic regression. SPSS was used for analysis.

Results: A total of 1,332 were included in the analysis. About 36% of households were uninsured and 22% did not receive mammograms. Uninsured households were found to have a higher odds of not obtaining a screening mammogram [odds ratio (OR) = 1.9, 95% Confidence Interval (CI) = 1.4-2.5]. After adjusting for the potential confounders, results were attenuated, and uninsured households had 40% higher odds of not obtaining mammogram screenings (OR = 1.4, 95% CI = 1.0-2.0) than insured households.

Conclusions: This study provides preliminary evidence for a potential role of lack of insurance in lower rates of mammogram screening for breast cancer in the Northwest Miami-Dade population.

P21

Breathing better: Asthma quality improvement on the NeighborhoodHelp Mobile Health Center

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Keywords: Asthma, Influenza, Vaccinations, Underserved Population, Chronic Disease Management

Introduction and Objective: The NeighborhoodHELP™ Mobile Health Centers (MHC) are an innovative approach of the FIU College of Medicine to engage hard to reach populations. These populations are medically underserved, with poorer chronic disease management due to socioeconomic factors. Asthmatic patients are especially vulnerable since they require regular follow up care. This Quality Improvement (QI) project's goal is to improve the asthma management in the active MHC population. The co-investigators plan to run several Plan-Do-Study-Act (PDSA) cycles examining the asthma control for MHC patients to evaluate and improve the patient's asthma management.

Methods: A literature review examined national guidelines and other QI projects involving asthma management. After IRB approval, chart reviews were conducted using electronic medical records for adults with asthma. Patients not seen in the last 2 years and those only with childhood diagnosis of asthma were excluded. Thirty-four active MHC patients with asthma were identified. Vaccinations were noted as an area for improvement, because only 3 of these patients were up to date with both flu and pneumonia vaccines. Starting November 2016, an intervention of calling the remaining 31 patients was carried out. Patients were asked if they received the vaccine elsewhere or were offered a vaccine visit. Notifications were placed on all asthmatic patients' charts.

Results: The intervention reached 84% of those targeted, and so far compliance with vaccine recommendations has increased by 32 percent. Those who are not in compliance either declined one or both vaccines, missed their vaccine appointment, or because the vaccine was unavailable. Four patients have future vaccine appointments scheduled and five patients were unable to be reached after multiple attempts.

Conclusions-Implications: Calling asthmatic patients to ensure they received their vaccines was successful, raising the vaccine rates. These patients represent a vulnerable population that are often unable to afford necessary health care such as vaccines. It is unlikely that they would have received these vaccines without this intervention, unless they had an MHC appointment for other reasons. This population over-utilizes EDs due to lack of insurance, and it is possible that this intervention prevented ED visits and hospitalizations for influenza or pneumonia infection but the data is still preliminary. One limitation of this study is the difficulty in contacting patients; provided phone numbers are often unreliable, and patient no-shows are frequent. Future interventions will continue to focus on improving asthma control for these patients.

P22

Cannabis use and obesity in U.S. adolescents

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Keywords: Cannabis, Adolescent, Obesity, Drug

Introduction and Objective: Cannabis has become the most widely used illicit drug by adolescents globally. While cannabis has been known to stimulate appetite, studies looking to evaluate the association between cannabis use and obesity have yielded mixed results.

Methods: We studied a population of 9th-12th graders who participated in the 2015 Youth Risk Behavior Survey in the United States. Cannabis use was self-reported based on last 30-day use and was separated into three categories: No cannabis use, some use (1-9 times), and frequent use (10 times or greater). Obese status was considered as a body mass index of 30 kg/m2 or more (based on World Health Organization standards). Multivariable binary logistic regression analyses were used to assess the independent association between cannabis use and obesity.

Results: In the unadjusted analysis, frequent cannabis and some cannabis use were both associated with a decreased odds of obesity [odds ratio (OR)=0.9, 95% Confidence Interval (CI)=0.7-1.2, and OR=0.9, 95% Confidence Interval=0.6-1.2, respectively]. After adjusting for age, sex, race/ethnicity, concurrent cigarette smoking, and physical activity, as compared to no use of cannabis the odds for frequent use to be obese was 0.6, 95% CI=0.5-0.8 and for some use was OR-0.7,95% CI=0.5-0.9.

Conclusion-Implications: We found preliminary evidence that some use or frequent use of cannabis was associated with a reduction from 30 to 40% in the odds of being obese among US adolescents. Studies are warranted as to further understand the nature of the association between cannabis use and obesity.

P23

Association of ADHD severity with risk of head injury, traumatic brain injury or concussion

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Keywords: Attention Deficit Disorder with Hyperactivity, Attention Deficit Disorder, Brain Injuries, Children with Special Care Needs, Closed Head Injuries

Introduction and Objective: Scientific evidence on the association between ADHD severity and head trauma is scant. Our study assessed the association between the severity of ADHD and prevalence of head injury, traumatic brain injury or concussion in 0-18 years-old children.

Methods: This was an observational study using secondary data gathered in 2009/10 from the Centers for Disease Control CHSCN survey. After excluding comorbidity and those with non-specific attention deficits, the final study population consisted of 10,739 children with ADHD from 40,052 households. The main exposure variable was self-reported ADHD severity (mild, moderate or severe). The main outcome was head injury, traumatic brain injury, and/or concussion. Covariates include age, gender, race, medication status, health insurance, Oppositional Defiant Disorder (ODD) and income. Unadjusted and adjusted logistic regression analysis were used to check the association between severity of ADHD and head injury.

Results: Adjusted analysis revealed a statistically significant association between severity of ADHD and occurrence of head trauma. The corresponding odds ratios (OR) were 1.49 (95% CI 1.07 – 2.07) for moderate and 1.57 (95% CI 1.02-2.40) for severe ADHD, respectively, compared with mild ADHD. Age (OR 1.11; 95% CI 1.06-1.16) sex (OR 0.56; 95% CI 0.41-.078), ODD (OR 1.34; 95% CI 1.01-1.79) and black race (OR 0.59; 95% CI 0.37-.94) were also statistically significantly associated with brain injury in children with ADHD.

Conclusions: As ADHD severity is associated with incidence of head injury, it is important to identify those who need increased attention and counseling to prevent injury.

P24

Race/ethnicity and HPV vaccination initiation and completion rates in women in the United States year 2015

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Keywords: Human Papilloma Virus, Race/Ethnicity, Vaccination, Income

Introduction: Human papilloma virus (HPV) is associated with over 90% of cervical cancers in the US, and higher incidence and mortality for cervical cancer as well as lower HPV vaccination rates has been reported among minority populations.

Objectives: Using most recent national data, we aim to assess if there is an association between race/ethnicity and HPV vaccination initiation and completion rates in US adult women.

Methods: Data was gathered from women ages 18-34 years old who participated in the Behavioral Risk Factor Surveillance System (BRFSS) in 2015. Logistic regression analyses were performed to assess the independent associations between race/ethnicity (White, Black, Hispanic or other) and the outcomes HPV

vaccination initiation (ever versus never) and HPV vaccination completion rate (receipt of 3 doses). Adjustments were performed for the participant's age, family income, education level, insurance status, access to a personal doctor, and sexual orientation. Interaction term for income was assessed in the regression models.

Results: Our sample included 2,290 participants, distributed according to race as 69% White, 18% Black, 7% Hispanic, and 6% other races. Forty-one % of women had ever initiated HPV vaccination, and of those 74% completed the HPV vaccine series. No independent association between racial/ethnic groups and HPV vaccination initiation rates was found [adjusted odds ratio (AOR)= 0.91, 95% Confidence Interval (CI): 0.49-1.69 for Blacks and AOR= 1.53, 95% CI: 0.79-2.96 for Hispanics; both compared to White). However, Blacks participants had lower odds of completion of the HPV vaccine series when compared to white (AOR= 0.22, 95% CI= 0.10-0.50, p= <0.001). Hispanics had no difference in the odds of completing vaccination as compared to Whites (AOR= 0.58, 95% CI: 0.21-1.58, p= 0.286). Interaction with income was nonsignificant for initiation nor for completion of HPV vaccination series (p= 0.206; p=0.135, respectively).

Conclusions: We found no evidence for differences in HPV vaccine initiation by race, however, participants classified as Blacks were at highest risk of vaccine non-completion. Our results suggest a potential role for vaccine completion as a contributor to inequalities in incidence of cervical cancer by race.

P25

Knowledge, attitudes, and behaviors of Zika virus in pregnancy

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Keywords: Prevention, Pregnancy, Zika Virus

Introduction: In July 2016, local transmission of Zika was identified in Miami, FL. On September 19th, 2016, there 86 cases of Zika virus infection in pregnant women living in Florida. Knowledge and preventative measures being undertaken by pregnant women living in Miami has not been studied. In this study, we aim to assess knowledge and preventative behaviors of Zika information in pregnant women and analyze the change in behavior amongst patients based on Zika awareness.

Methods: A 59-question survey has been distributed among adult pregnant women (age > 17years) in two antenatal clinics at the University of Miami (UM). Knowledge of Zika infection, recommendations regarding pregnancy, contraception, and other preventive measures taken by the participants were assessed.

Results: Among the initial sample of 85 women, the majority were 25-34-years old (51.76%), in second trimester (50.59%), Black (42.35%), unemployed (51.76%), education level of high school or lower (54.12%), and income <$50,000 (63.53%). A lower percent of participants (38.67%) have knowledge of all the protective factors for Zika and believe they can get Zika in their location (26.92%). The majority of women in the third trimester (52%) believed Zika was a threat to their community ($X2(2)=8.74$, p=0.013). The majority (85.90%) answered that Zika changed their behavior during pregnancy. A higher percent of women has been prompted to use condoms (61.25%), wear mosquito repellant (91.03%), wear long sleeves (65%), and are more cautious about Zika-related travel restrictions (80.77%).

Conclusion: There are gaps in the knowledge about Zika risk and protective factors among pregnant women in Miami. However, higher proportion of women are taking preventive measures. Public health interventions to improve Zika knowledge are necessary.

P26

Travel behavior of Zika virus in pregnancy

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Keywords: Zika Virus, Pregnancy, Prevention

Introduction: The first trimester of pregnancy is an important phase of organogenesis and development for the fetus. However, Zika has been reported to affect fetal growth in all trimesters of pregnancy. Travel behaviors of pregnant women residing in an affected area have not been studied. In this study, we aim to assess the knowledge regarding Zika based travel recommendations amongst pregnant women and analyze differences in travel behavior based on trimester of pregnancy.

Methods: A 59-question survey was distributed at 2 antenatal clinics in the University of Miami. Demographic data, including age, parity, race, socioeconomic status (SES; low SES < $50,000 or high school) was noted. Trimester of pregnancy was used as the predictor. Subjective threat of Zika virus to the community, possibility of getting infected with Zika in their location, cautious travel behavior, and consideration of moving away from Florida were assessed.

Results: A total of 85 pregnant women were surveyed in the preliminary analysis. 9.41% of women were in the first trimester, 40% were in the second trimester, and 50.50% were in the third trimester. There were no differences in age, race, employment status, parity, or SES within the trimesters. 52% of women in the third trimester believed Zika was a threat to their community ($X2(2)=8.74$, p=0.013). There were no differences in level of cautiousness about travel, consideration of moving to a different location, and thought of getting Zika in their location.

Conclusion: Travel behaviors were similar in all trimesters of pregnancy. It is important to continue to emphasize cautious travel during pregnancy, as Zika can infect fetal growth at any trimester of pregnancy.

P27

The utility of social media in providing information on #ZikaVirus

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Keywords: Social Media, Zika Virus, Womens Health, Prevention

Introduction and Objectives: The dawn of 2015 brought about an unusual outbreak of Zika virus in Brazil, which eventually spread throughout the Americas. The association of Zika virus with microcephaly and a spectrum of malformations known as congenital Zika syndrome in infants born to infected pregnant women created significant concern for women of childbearing age. Knowledge of prevention through mosquito control, barrier contraception, and avoiding travel to areas of local transmission during pregnancy is vital for young women. Social media is an important platform for health promotion, communication, and education on preventative methods during Zika virus outbreaks. Due to the dynamic nature of Zika virus and rapid turnover of information on social media, providing relevant facts to the public is imperative. We evaluated the utility of social media on providing useful information regarding Zika virus.

Methods: Facebook, Instagram, Twitter, and YouTube were utilized for our study. A search of "#Zikavirus" on Twitter and Instagram, and "Zika virus" on Facebook and YouTube was performed. The first 50 search results were analyzed from each source. Only English, Spanish, or Portuguese results were included. Results were categorized into 3 groups: "Useful", "Not Useful", or "Misleading". The "Useful" category was subcategorized into "Clinical" and "Informative". "Clinical" consisted of articles that directly cite the Centers for Disease Control that are useful for clinicians. "Informative" included health education and outbreak information from news headlines and educational videos. The "Not Useful" category included results on Zika virus that contained related content but were not clinically relevant or informative, and "misleading" category consisted of false information.

Results: The search was conducted on December 17th, 2016, where 185 results were found. Forty (21.62%) were from Facebook, 50 (27.03%) from Twitter, 48 (25.95%) from YouTube, and 47 (25.41%) from Instagram. There was a significant difference in results, in which there was a total of 104 (56.22%) "Useful", 67 (36.22%) "Not Useful", and 14 (7.57%) "Misleading" results (Chi-square: 8.8411, degree of freedom 3, p=0.0315). Of the "Useful" results, there were a total of 14 "Clinical" and 90 "Informative" results. Facebook had the most "Clinical" results and YouTube had the most "informative" results. Instagram had the most "Not Useful" results and YouTube had the most "Misleading" results.

Conclusion-Implications: Overall, social media is a useful resource for providing relevant information on Zika virus. Physicians, however, should always consider directly utilizing evidence-based resources for disease outbreak information.

P28

Intimate partner violence and postpartum contraceptive use: The role of prenatal intimate partner violence screening, race and ethnicity

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Keywords: Intimate Partner Violence, Contraception, Family Planning, PRAMS

Introduction and Objectives: Intimate partner violence (IPV) is a significant public health problem. Previous research utilizing the Pregnancy Risk Assessment Monitoring System (PRAMS) database found that IPV-exposed women reported lower rates of postpartum contraceptive (PPC) use. This study analyzes new data for this association and whether it is modified by ethnicity, race or prenatal screening for IPV.

Methods: Data from 141,376 respondents to PRAMS survey of women following live births in the U.S. from 2009-2015 were analyzed. All information gathered was self-reported. To assess IPV exposure, participants were asked about physical abuse by a current or former partner in the 12 months before or during pregnancy. The association between IPV and PPC was measured calculating odds ratios (OR) and 95% confidence intervals (95% CI), first through bivariate analysis and later using logistic regression to adjust for potential confounders and to assess effect modifiers.

Results: 6,845 women (4.8%) reported exposure to IPV. IPV was significantly (p<0.001) more common among those reporting age <25 years, Black race, Hispanic ethnicity, Medicaid or WIC receipt, less education, unintended pregnancy, inadequate prenatal care, and unmarried status. After adjusting for potential confounders, the odds of not using PPC increased by 50% in IPV exposed women (adjusted OR 1.5; 95% CI 1.2 - 1.9; p<0.001). This association was not modified by ethnicity, race or prenatal screening for IPV. We found no significant difference in the use of PPC for Hispanic women vs Non-Hispanic women (adjusted OR 0.9; 95% CI 0.8-1.0); however, the lack of PPC was significantly higher for participants who identified as Black or Asian. Not being screened for IPV or self-paying health insurance were also independently associated with lack of PPC.

Conclusions-Implications: These findings support the hypothesis that IPV exposure negatively influences PPC, in concordance with prior similar study of U.S. women, but do not suggest that this relationship is modified by race, ethnicity or screening for IPV. We hope these findings will inform efforts to grant women agency in their reproductive health, with future investigation to elucidate the impact and quality of screening and counseling in this population.

P29

Dermatologic problems and suicidal behaviors in children and adolescents

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Keywords: Dermatology, Suicide, Children

Introduction and Objective: Suicide is the second most common cause of death in adolescents. Skin disorders may increase the likelihood of depression and anxiety but there are few studies on the effect of skin disorders on suicidality. Our objective is to compare the frequency of dermatological conditions in suicidal versus non-suicidal children admitted to the Children's Crisis Stabilization Unit (CCSU) at Citrus Health Network. We hypothesize that dermatologic conditions will be associated with a higher risk of suicidality in children.

Methods: A cross-sectional study of patients younger than 18 years old admitted to the CCSU between October 2013 and September 2015. Secondary data analysis was performed on all 1,557 admissions. Prior admissions were excluded. Crude and adjusted odds ratios using multivariate analysis were used to assess the association between dermatologic conditions and suicidality. SPSS statistics software was used.

Results: 53.1% of patients were Hispanic, 29.9% Black or African American, and 11.7% North American. 48.7% of patients had an education level in high school (48.7%) and 34.7% in middle school. Of the 1,557 subjects, 49 had dermatological conditions with acne being the most common (57.1%). Patients with dermatologic problems were more likely to be female (67.3 %), have a history of behavioral treatment (49.0%), arrests (43.8%) , mood disorders (73.5%), impulse disorders (83.7%), suicide history (38.8%), and previous admission (49.0%) compared to patients without dermatologic conditions. Suicidality was more frequently observed among females, North Americans, Hispanics, or "Other" ethnicity, patients with an education in high school, drug history, mood disorder, anxiety disorder, suicide history, and no autism. After adjusting for confounders, no association was found between dermatologic conditions and suicidality [OR 0.97 (95% CI 0.6-1.9); p = 0.93].

Conclusion: We did not find an association between dermatologic conditions and suicidality. It is likely that dermatologic findings were not accurately documented in the psychiatric unit, causing less dermatologic conditions to be found in both groups of patients subsequently introducing non-differential misclassification bias. Similar studies should be performed in settings with more accurate measurement of the exposure.

P30

Factors associated with the perception of quality of care related to provider sensitivity of values and customs by parents of children with asthma

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Keywords: Children, Asthma, Provider, Sensitivity, V alues & Customs

Introduction and objective: A health provider's sensitivity towards individual patient's values and customs can influence the patient-provider relationship. The objective was to analyze whether factors such as primary language spoken at home, race/ethnicity, income level, education, health insurance status, usual place of care, and having a personal doctor/nurse are associated with perception of quality of health care related to individual values and customs by the parents of asthmatic children. We hypothesized language would be the most influential barrier of the characteristics investigated.

Methods: Cross-sectional observational study based on secondary analysis of data. Bivariate and multivariate analysis were done on responses to questions on patient satisfaction from the 2011-2012 National Survey of Children's Health (NSCH). The population was comprised primarily of children who were white, non-Hispanic, and who spoke English at home. A two-point scale (never/sometimes, usually/always) was used to rate the perception of parents regarding the respect of individual values and customs by health care providers.

Results: Non-English speaking parents reported more often that their values and customs were never/sometimes respected compared to English speaking parents (OR 3.5; 95% CI 2.4-5.0; p<0.001). This difference was reduced after adjusting for confounders (adjusted OR 2.1; 95% CI 0.9-4.7; p=0.082). Parents of patients that identified as black were 2 times as likely to feel that their physician did not respect their customs or values when compared to parents that identified as white (aOR 2.7; 95% CI: 1.5-4.9; p=0.001). Parents of patients without insurance were 6 times as likely to report not feeling their customs or values were respected (aOR 6.2;95% CI: 2.8-13.9; p<0.001). Other variables lost statistical significance in the adjusted analysis.

Conclusions-Implications: Once adjusted analysis was performed, language was no longer statistically significant; we still believe it of clinical significance. No insurance status is the variable most strongly associated with negative perception of care; however, only about 4% of the sample size did not have insurance. Medicaid expansion occurred after the survey was done in 2011-2012, and it would be interesting to see if there is any impact on the number of children with insurance and the perception of quality of care by parents.

P31

Association between household income level and diabetes mellitus in children

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Keywords: Diabetes, Children, Poverty, Income

Introduction and Objective: Diabetes is one of the most burdensome diseases in the United States due to its detrimental complications and high health care costs. Socio-economic factors affect the prevalence of this disease in adults, and a better understanding of these relationships in the pediatric setting would help in future interventions aiming to curtail the diabetes risk. Our objective is to establish whether there is an association between household income and diabetes prevalence in American children.

Methods: We performed secondary analysis of data collected cross-sectionally by the National Survey of Children's Health (NSCH) from 2010 to 2012 which included a sample of randomly selected children from the US. Information about Diabetes status (outcome) and federal poverty level (exposure) were based on caregiver report. Independent associations were assessed using multivariate logistic regression. Stata 12 was used for analysis.

Results: Data for 95,644 children was available at the NSCH, of which 475 were reported to have diabetes (0.4%). About 13.7% of children were found to be in families in the lowest income level (0-99% of the federal poverty level). These children were found to have a higher odds of diabetes [Odds ratio (OR) =1.8, 95% Confidence Interval (CI) = 1.0-3.1] than their peers who were >400% FPL cutoff. After adjusting for access to health care,

parents' education level, and exercise status, children of federal poverty level (FPL) ≤99% still have more than twice the odds of having diabetes as those >400% FPL (OR= 2.4, 95% CI= 1.4 - 4.2). Those at 100-199% FPL and 200-399% FPL had also greater odds to have diabetes, but these results were not significant (OR= 1.1, 95% CI= 0.7-1.8 and OR=1.5, 95% CI 0.9-2.7, respectively).

Conclusions-Implications: Our results showed a relationship between poverty levels and diabetes, but there was not a dose-response – that is, only the poorest of children had increased risk for diabetes. This study provides preliminary and exploratory evidence that poverty levels might affect risk of diabetes in children. Such knowledge might aid future efforts to improve prevention by targeting groups with the highest poverty levels.

P32

Correlates of complementary and alternative medicine usage in South Florida

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Keywords: Complementary Therapies, Minority Groups, Hispanic Americans, Socioeconomic Factors, Florida

Introduction and Objective: Approximately 38% of adults and 12% of children in the US use complementary and alternative medicine (CAM). Concerns exist regarding risks for delayed utilization of health care and side effects associated with CAM, which could ultimately worsen prognoses. Better knowledge of CAM usage in the communities might better prepare physicians to address the unique challenges of caring for patients using CAM. Yet, the characteristics of patients using CAM in the culturally diverse Little Haiti population in Miami-Dade are unknown. Objective: To assess the prevalence for CAM usage, its correlates, and the main motivations for CAM usage in a sample enriched with Haitian-descent households in the Miami-Dade area.

Methods: We performed secondary analysis of data from 951 households participating in a population-based health survey in Little Haiti in 2010. The outcome was CAM use considered as present if use of herbal vitamins/nutrients, acupuncture, chiropractor, and/or traditional healer such as a "Curendero" or an herbalist were reported. Correlates assessed included demographic, socio-economic, lifestyle, health care access and satisfaction, and clinical characteristics. Prevalence of selected motivations for CAM were calculated. Associations were tested using multivariate logistic regression.

Results: About 25% of the households used CAM. The independent correlates of CAM usage were higher age (OR=0.99, 95% CI=0.98-1.00, for each year increase in median household age), education (vocational school/some college compared to less than high school, OR=0.46, 95% CI=0.24-0.86), income (> $40,000 versus < $20,000 dollars/year, OR=1.81, 95% CI=1.05-3.13), having a chronic disease (OR=2.61, 95% CI=1.53-4.48), and dissatisfaction with health care (OR=2.13, 95% CI=1.15-3.93). The top motivations for CAM usage were "it works well and keeps me healthy", "I prefer to try other approaches before going to the doctor or taking prescription medicine", and "I want to avoid using prescription medicine" in 63%, 19%, and 18% of households, respectively.

Conclusions-Implications: Selected demographic, socio-economic, clinical and health-care related characteristics were associated with CAM utilization in the Little Haiti residents area. Such characteristics might help to identify CAM users and possibly guide development of strategies to prevent patients from inappropriately using CAM.

P33

Role of additive assembly in improvement of technical skills involving endovascular devices

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Keywords: 3D printing, Additive Manufacturing, Endovascular, Training, Simulation

Introduction and Objective: A fundamental challenge that interventional trainees face is developing the technical "hand skills" to skillfully manipulate endovascular devices. Traditionally, trainees improve their skills by practicing on live patients. Other methods of obtaining technical practice involve use of sophisticated simulators/models. The use of these tools has shown to be effective, however, their cost can be prohibitive for many healthcare organizations to invest in. 3D printing (i.e. additive assembly) has seen extraordinarily increased use for different applications in medicine; including, but not limited to, prosthesis manufacturing, device development, and pre-procedural evaluation. Therefore, our project seeks to demonstrate the feasibility of 3D printing as a means of producing cost-effective training models.

Methods: A 3D printed model of the circle of Willis vasculature, developed from DICOM CT imaging, was printed by AMERI (Florida International University College of Engineering: Advanced Materials Engineering Research Institute; Miami, FL) using clear resin loaded onto a FormLabs SLA 3D printer. The study population included 23 volunteers comprised of medical students, radiology residents, and attending physicians in the state of Florida. The model was suspended in water and study participants were then timed on four sequential attempts navigating a 0.035" angled glidewire and a 5F angled glide catheter through a predetermined segment of the right middle cerebral artery (MCA) of the vascular model. Participants were aided visually with the model through use of a makeshift lightbox shining through the clear resin model. The overall procedural task time (PTT) was considered a surrogate to evaluate for endovascular technique improvement.

Results: 23 participants in total completed the circle of Willis simulation. The average initial time to navigate the right MCA was 40.63 seconds (s) +/- 36.33s Standard Deviation (SD). The average final time to navigate the right MCA on the fourth attempt was 15.82s +/- 13.96s SD. This demonstrated an average improvement of 24.81s in PTT with a p-value of 0.002.

Conclusions-Implications: This study demonstrates after only 4 attempts to navigate the right MCA, participants demonstrated significantly improved procedural task time, which is considered a surrogate for improved endovascular technique. Similar 3D simulation may be used to further improve trainee techniques on specific skills including: navigating up and over the iliac bifurcation, sub-selection of visceral vessels, and forming Waltman loops. 3D simulations safely and quickly enable trainees to become comfortable with procedural steps, develop muscle memory, improve hand skills and familiarity with various endovascular equipment capabilities; all with zero risk, before puncturing the skin of live patients.

P34

The impact of health insurance status on cervical cancer staging at diagnosis in Florida women aged 18-64, 2003-2012

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Keywords: Cervical Cancer, Health Insurance, Health Care Reform, Medicaid, Florida Cancer Data System

Introduction: Recently there has been a great deal of change and debate surrounding health insurance and preventative care. Cervical cancer is a widely screened for disease and a good benchmark of preventative medicine and screening. The aim of our study is to determine the association between health insurance status and cervical cancer stage at diagnosis in Florida women.

Methods: We analyzed the effects of insurance status and the stage of cervical cancer diagnosis in Florida women aged 18-64 using the Florida Cancer Data System (FCDS) between 2003 and 2012. Cervical cancer stage was examined as local compared to regional/distant and local/regional compared to distant. We used SPSS v21 for chi squared, t test, binary logistic regression, multivariate, and collinearity test analyses.

Results: Our data shows those with Medicaid have 2.6 times (OR 2.6, 95% CI 2.1-3.1) and those with no insurance have 2.5 times (OR 2.5, 95% CI 2.1-3.0) the likelihood of those with private insurance of their cervical cancer diagnosed at a regional/distant stage versus a local stage. Women identifying as black, not married, or tobacco users were more likely to be diagnosed with cervical cancer a regional/distant stage, while Hispanic/Spanish women were less likely. The likelihood of cervical cancer diagnosed at a distant stage versus local/regional was 2.5 times in those with Medicaid (OR 2.5, 95% CI 1.9-3.2) and 1.7 times in those with no insurance (OR 1.7, 95% CI 1.3-2.3) compared to those with private insurance. Women identifying as tobacco users were more likely to have their cervical cancer diagnosed at a distant stage.

Conclusion: Compared to women with private insurance, those with Medicaid and no insurance were significantly more likely to have their cervical cancer diagnosed at a later stage.

P35

Determining the variables for neurologic etiology on syncope patients in the ED

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Keywords: Neurologic, Model, Syncope

Introduction and Objective: Syncope remains one of the most challenging presentations to the Emergency department (ED) physician as well as the Internist taking care of patients in the

medical floor. This is partially due to the intrinsic difficulties of assessing the risks of future adverse outcomes, and partially due to the fact that syncope has a myriad of potential etiologies many of which can have severe consequences if not addressed in a timely manner. The goal of this study is to determine which combination of variables during the clinical encounter at bed side can better predict among all patients presenting to the ED with syncope who is likely to have a neurologic diagnosis and who is not.

Methods: A retrospective chart review was done on a random sample of cases presenting to the emergency department of a Miami hospital between 2014 and 2016.

Results: Of the total number of cases included in the regression model, 22 (4.0%) individuals had a final diagnosis that was neurologic in nature. The presence of involuntary movements, presence of weakness and/or motor impairment, and presence of an abnormal cranial nerve examination multiplied the odds of being diagnosed with either stroke or epilepsy by 7.5, 2.3, and 42.1 respectively. Similarly, personal history of epilepsy multiplied the same odds 8 times. Lastly, performing an MRI of the brain also multiplied these odds by a factor of 9.5. On the other hand, the presence of lightheadedness, and occurrence of symptoms post rising from a supine position decreased the odds of having a neurological diagnoses. When all significant variables were added to the model, the area under the ROC curve was calculated to be 0.863, thus indicating the relatively high usefulness of this model to predict a neurologic etiology for patients presenting with syncope.

Conclusion and Implications: Syncope has a variety of etiologies some of which are benign in nature like Orthostasis, others carry a high risk of severe detrimental consequences like cardiac arrhythmias or cerebrovascular accidents. Thus, it is imperative to differentiate those patients with a potential of having a life-threatening diagnosis from those that do not. The neurologic model developed during this study showed great potential for development of a stratification risk tool for neurological diagnosis for patients presenting with a syncopal episode to the ED.

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Determining the variables for cardiac etiology on syncope patients in the ED

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Keywords: Cardiac, Model, Syncope

Introduction and Objective: Syncope remains one of the most challenging presentations to the Emergency department (ED) physician as well as the Internist taking care of patients in the medical floor. This is partially due to the intrinsic difficulties of assessing the risks of future adverse outcomes, and partially due to the fact that syncope has a myriad of potential etiologies many of which can have severe consequences if not addressed in a timely manner. The goal of this study is to determine which combination of variables during the clinical encounter at bed side can better predict among all patients presenting to the ED with syncope who is likely to have a cardiac diagnosis and who is not.

Methods: A retrospective chart review was done on a random sample of cases presenting to the emergency department of a Miami hospital between 2014 and 2016.

Results: Of the total number of cases included in the regression model, 25 (4.5%) individuals had a final diagnosis that was cardiac in nature. After analyzing all the variables, the final regression model showed that male patients are 3 times more likely to have a cardiac final diagnosis for syncope than women. Additionally, there is a 5% increased chance of having a cardiac etiology per year increment between the groups. Having palpitations occurring with the event and having a personal history of coronary artery disease multiplied the odds of having a cardiac diagnosis 24.43 times and 3.63 times respectively. Bradycardia on EKG or a prolonged QRS segment (>120ms) multiplied the odds of a cardiac final diagnosis by 4.24 times and 5.06 times respectively. Finally, having a diagnosis of valvular stenosis on cardiac echography multiplied the odds of having a cardiac diagnosis by a factor of 7.35. When these variables were included in the model, the area under the ROC curve was calculated to be 0.901, thus indicating the relatively high usefulness of this model. Creating a model excluding the result of the cardiac echography yielded a ROC curve with an area under the curve of 0.895, which is also very interesting.

Conclusion and Implications: Syncope has a variety of etiologies some of which are benign in nature like Orthostasis, others carry a high risk of severe detrimental consequences like cardiac arrhythmias or cerebrovascular accidents. Thus, it is imperative to differentiate those patients with a potential of having a life-threatening diagnosis from those that do not. The cardiac model developed during this study showed great potential for development of a stratification risk tool for cardiac diagnosis for patients presenting with a syncopal episode to the ED.

P37

A case of aortic dissection presenting with stroke-like symptoms

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Keywords: Aortic Dissection, Chest Pain, Stroke Symptoms, Extremity Weakness

Introduction and Objectives: The classic presentation of an aortic dissection is described as the sudden onset of severe, tearing chest pain that radiates to the back in a hypertensive patient. A subset of patients will present with atypical symptoms, normal vital signs and will be in no acute distress. Five to 15% will not have chest pain. Between 17 to 40% will present with some sort of neurological sequelae with or without pain. Up to 85% of patients do not receive the correct diagnosis initially. The consequences when these neurological symptoms are mistaken for a stroke can be fatal. If tissue plasminogen activator (tPA) is given to a type A dissection, the dissection can extend into the pericardium, resulting in tamponade and death.

Case Presentation: A 72-year-old male with a past medical history of smoking and hypertension presented to our ED reporting left lower extremity weakness. Prior to the onset of symptoms, patient reported mild mid-thoracic back pain. Physical examination revealed normal vital signs, left lower extremity weakness with 1/5 muscle strength and decreased sensation resulting in NIHSS score 4. Stroke alert was called. Upon completion of CT brain, patient reported resolution of symptoms. Repeat physical revealed 5/5 muscle strength in bilateral lower extremities and sensation intact. Patient continued to complain of mid-thoracic back pain, now exacerbated by movement of the lower extremities. CTA of the chest and abdomen revealed a Type B aortic dissection with a dissection flap occluding the origin of the left common iliac artery. Esmolol drip was started to maintain SBP 90-120mmHg. Cardiothoracic and Vascular surgery were consulted and recommended non-operative treatment at this time. Patient was admitted to ICU where he was later discharged under hospice care.

Conclusions-Implications: Aortic dissections presenting similar to strokes can lead to a misdiagnosis that could have severe consequences. In our patient, his rapidly resolving neurological symptoms were a contraindication to tPA, however, if given, the dissection could have propagated and worsened his symptoms. Treatment of aortic dissection requires pain and BP control with SBP goal 90-120mmHg. Type A dissections generally undergo surgical repair due to high mortality rate of complications such as cardiac tamponade. Type B uncomplicated dissections undergo medical management with BP and HR control. Due to the vague presentation of atypical symptoms, physicians should include aortic dissection in their differential diagnosis in patients who present with chest, back, abdominal pain and isolated neurological findings.

P38

Transforming growth factor-β suppresses CFTR biogenesis and function by post-transcriptional gene silencing mechanisms

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Keywords: Transforming Growth Factor-Beta1, CFTR, miRNA, Mucociliary Dysfunction

Introduction and Objective: HIV infection and cigarette smoke has been reported to suppress nasal mucociliary clearance (MCC) in the era of combination antiretroviral therapy (cART). Effective MCC requires optimal ciliary beating which depends on maintenance of airway surface liquid (ASL), function of cystic fibrosis transmembrane conductance regulator (CFTR) activity. TGF-beta signaling suppresses CFTR biogenesis and function and is enhanced by HIV Tat and Cigarette smoke. We demonstrate that HIV Tat and cigarette smoke suppress CFTR biogenesis and function in primary bronchial epithelial cells via a common pathway involving TGF-b signaling. A microRNA array TGF-b signaling induces several microRNAs capable of targeting CFTR.

Methods: Normal Human Bronchial Epithelial (NHBE) cells from human Lungs provided by University of Miami, were isolated, cultured and re-differentiated at Air-Liquid interface (ALI) medium. Electrophysiology experiments were carried out by using Ussing chambers to determine CFTR activity. NHBE ALI cultures were treated with TGF-b. Total RNA was isolated and miRNA array was done. TGF-b mediated changes in miRNA expression profile in NHBE was determined using Exiqon microRNA Human panel I and II, V4. This panle allows us to assay 784 mature human microNAs. All experiments were repeated at least three times, with cultures from at least 3 different donors.Data was analyzed using the GenEX software.

Result: TGF-b treatment showed statistically significant change ($p < 0.05$) in expression of 109 different microRNAs. TGF-beta enhances expression of several miRNAs capable of suppressing CFTR.

POSTER ABSTRACTS

Conclusions-Implications: Our data clearly showed that TGF-b suppresses CFTR via miRNA mediated post-transcriptional gene silencing. This would lead to reduced ASL depth and consequently reduced CBF impacting mucociliary clearance. The application will provide new data to elucidate the role of microRNAs as downstream effectors of CS and HIV Tat mediated CFTR suppression.

P39

Anti-HIV effects of nano-recombinant human chorionic gonadotropin and mechanistic studies

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Keywords: Recombinant hCG, HIV, Antiviral, p24, TNF

Introduction and Objective: To determine if highly purified recombinant hCG has similar antiviral effects against HIV proliferation and infectivity of peripheral blood mononuclear cells as previously studied urinary hCG using p24 and TNF-alpha levels for measurement.

Methods: Whole blood from a donation bank was used to isolate and culture PBMC's in a laboratory setting. Phytohemogglutinin was used to activate the cells to take up the virus. Cells were then infected with the HIV virus and subsequently treated with r-hCG. R&D Systems r-hCG 10 µg coupled to bovine serum albumin was used. The cells were divided into 5 tubes each receiving different dosages of r-hCG from no hCG to 0.1, 1, 10, and 100ng/mL hCG. The contents of each tube were transferred to T75 flasks with RPMI media and placed to culture at 37°C, 5% CO2 environment. The cells were monitored for two weeks and media was collected over time during replenishments. At the end of two weeks, all samples were tested for p24 and TNF-alpha using ELISA.

Results: A significant decline of p24 was observed in all tubes ten days after infection. There was also a noted decline in TNF-alpha levels eight days after infection. The 10ng/mL hCG tube showed more anti-viral effects than any other concentration. Overall, the study showed a general anti-viral trend during the middle of the collection period with no anti-viral effects showing at the beginning or end of the study.

Conclusion: Since the cells were only treated once with hCG in the beginning, we can only conclude that recombinant-hCG does not affect HIV entry into cells. The final outcome of our study, however, remains inconclusive due to the inconsistency of the results. There may be a later stage that hCG does act upon to exert its anti-viral effects. Although a change was noted late into the measurement phase in our study, we can only conclude that hCG perhaps has a latency period and works later in the course of the infection. As an addition to previous studies, our study provided further evidence that concentrations of 1-10 ng/mL have the greatest anti-viral properties. Concentrations lower or higher than 1-10 ng/mL have shown to have a reverse effect and actually increase viral load compared to a control without hCG.

P40

Unusual mechanism of fatal pediatric abusive head trauma: A case report

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Keywords: Abuse, Pediatric, Head, Trauma, Compression

Introduction: Abusive head trauma (AHT) is the leading cause of fatal injury in infants and is usually incurred by shaking or impact with a hand or blunt object. Impact injuries can produce skull fractures and show external signs of trauma, while shaking injuries usually cause retinal hemorrhages and intracranial trauma. We investigated a case of fatal AHT which presented with an isolated linear parietal fracture and severe intracranial brain trauma and report a new and unusual mechanism of AHT.

Case Presentation: A 3 month old male presented to the ED after he was found unresponsive. Upon arrival, there was no visible evidence of trauma, despite history suspicious for abuse. The infant was successfully resuscitated. Head ultrasound showed extensive left frontal intraparenchymal hemorrhage with surrounding edema and midline shift. Head CT showed a unilateral right parietal fracture, left hemispheric subarachnoid hemorrhage, subdural hemorrhage along the falx cerebri and tentorium, and diffuse loss of gray-white matter differentiation. Skeletal survey revealed no abnormalities. There were no retinal hemorrhages on ophthalmic exam. Video EEG showed evidence of diffuse severe encephalopathy. Support was withdrawn and the infant expired.

At autopsy, there was no external evidence of trauma to the body, head, or face. Reflection of the scalp revealed complete absence of soft tissue hemorrhage. There was a full thickness 5 cm long linear right parietal fracture that extended laterally from the mid-sagittal suture. Within the calvarium, a left subdural hemorrhage, diffuse flattening of the left hemispheric gyri, and multifocal subarachnoid hemorrhages (SAH) were observed. Serial coronal sections of the fixed brain showed a large cavity that involved the anterior half of the left cerebral hemisphere. The cavity contained a small amount of residual blood clot and was surrounded by marked necrosis. The cavity connected to the brain surface through a tear in the anterior left frontal lobe. There was no evidence of direct parenchymal injury to the right hemisphere. Following autopsy investigators elicited a confession from the caretaker. He had become angry with the infant and admitted to pushing the infant's head into a mattress. This correlates well with findings at autopsy. The stress from anteroposterior pressure would put maximum stress at the apex of the parietal bone; when the fracture occurred, integrity of the cranial vault was lost, allowing crush injury of the brain, manifested by SAH, SDH, and intracerebral hemorrhage.

Conclusion: This unusual mechanism of anteroposterior compression force does not readily fit into any known category of abusive head trauma. It is inherently different from typical impact abuse and shaking-type trauma and also differs from accidental crush injury because the application time is longer and the amount of force is smaller. Practitioners of pediatrics, emergency medicine, and forensic pathology should be mindful of this unusual mechanism for AHT.

P41

Vaginal cuff complications with barbed vs. non-barbed sutures in total robotic hysterectomy: A retrospective study

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Keywords: Hysterectomy, Vaginal Cuff Complications, Barbed Suture, Non-Barbed Suture, Robotic

Introduction and Objective: With the surgical development of total robotic hysterectomy (TRH), and the recently popularized use of barbed sutures comes the challenge of minimizing negative postoperative outcomes, most concerning of which are vaginal cuff complications. Given the limited body of knowledge available regarding the use of barbed sutures in TRH specifically, this study aims to further the understanding of this topic and aids in setting a new standard for maximal patient outcomes. The goal of this study is to determine if there is an association between the incidence of vaginal cuff complications (VCC) and the use of barbed (V-LocTM/ QuillTM) sutures following a TRH, as compared to the use of non-barbed (Vicryl) sutures.

Methods: This is a retrospective cohort study conducted through the secondary analysis of the Gynecological Research Group database, which includes medical records from patients who have undergone TRH by one of four gynecologic surgeons in South Florida between 2002 and 2015. The sample of this study consists of 762 patients who underwent TRH between 2002 and 2015. The main independent variable was the type of suture used for closure of the vaginal cuff. The dependent variable was the presence of postoperative VCC, including vaginal cuff abscess, vaginal cuff cellulitis, and vaginal cuff dehiscence. A descriptive analysis determined whether the two groups were similar at baseline. A propensity score analysis was performed to mimic randomization in our nonrandomized study design. We then performed a collinearity analysis to determine what associations, if any, existed between all cross-tabulated variables and our dependent variable. Finally, a linear regression analysis was performed to determine the association between suture type and the aforementioned VCCs in both propensity score matched and unmatched data.

Results: There was no significant association between suture type and incidence of VCC (p-value = 0.199). Collinearity analysis showed no association between identified confounders. Propensity score matching resulted in a large reduction in bias, particularly for diabetes comorbidity status and surgeon (95.6% reduction and 96.2% reduction, respectively). Further, linear regression analysis revealed a t-statistic of -0.35 for the matched data and -0.66 for the unmatched data, suggesting that even if the research design had included a randomization clause, there would still have been no significant association between our variables of interest.

Conclusions-Implications: Ultimately, no association was found between the use of barbed or non-barbed sutures and the incidence of VCC. Although propensity score matching reduced bias substantially, the ultimate conclusion did not change. This implies that selection of suture type is not a factor that would threaten patient care in the setting of TRH. However, this topic warrants further research, ideally in the setting of a randomized c ontrolled trial.

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Is correction of more severe pelvic organ prolapse associated with a high risk of developing de novo stress urinary incontinence?

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Keywords: Pelvic Organ Prolapse, Stress Urinary Incontinence, Sever Pelvic Organ Prolapse

Objective: To evaluate if severe pelvic organ prolapse (POP) has a higher incidence of de novo stress urinary incontinence (SUI) in previous continent women after POP surgery compared to less severe POP.

Methods: This was a retrospective database review of patients with a diagnosis of POP who underwent surgical treatment from July 2003 to June 2013 and developed de novo SUI at ≥6 months postoperatively. Included subjects were determined by both a negative standardized stress test and urodynamics. Exclusion criteria included previous incontinence procedures. POP was assessed by the Pelvic organ prolapse quantification system (POPQ). Primary aim was to assess the incidence of de novo SUI in severe POP compared to less severe POP in women with no objective evidence of SUI. Severe POP was defined as points Ba, Bp, or C >3.

Results: There were 207 subjects, 48 with massive POP, and 158 with less severe POP. Women with massive prolapse were older and had higher incidence of hypertension. There was no difference in parity, body mass index, menopausal state, history of hypertension, diabetes, smoking, pulmonary diseases, previous hysterectomy or POP surgery, subjective complaints of SUI, urinary leaks per day, pads per day, or estimated blood loss. There was no difference in de novo SUI rates for massive compared to less severe POP (12.5% vs. 10.1%, p=0.6026). The overall incidence of de novo SUI was 10.6% (n=22). The incidence of de novo SUI in those with no subjective or objective evidence of SUI was 6.3%. In women with no objective findings of SUI, there was a significantly higher rate of de novo SUI in those with a longer POP-Q point D (-9.5 vs -7.5, p=0.0201), and in those having a preoperative complaint of SUI (54.5% vs. 18.9%, p=0.0006), or mixed urinary incontinence (37% vs. 14.6%, p=0.0063). In women with no subjective or objective evidence of SUI, there was a significantly higher rate of de novo SUI in those with a longer total vaginal length (10.5 vs. 9.5, p=0.0030) and those reporting a higher number of urinary leaks per day preoperatively (0.5 vs. 0, p=0.0236).

Conclusions: The severity of POP does not increase the risk of de novo SUI. However, having a subjective complaint of SUI prior to surgery, despite a negative SUI evaluation, was associated with an increase risk. We recommend counseling patients with a negative evaluation, there is up to a 10.6% risk of developing de novo SUI.

P43

Electronic media-usage and depression in children in the United States

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Keywords: Depression, Electronic Media, Children, Adolescents

Introduction and Objective: It has been estimated that approximately 350 million people are suffering from depression worldwide. Scientific evidence on the association between electronic media use and depression in children has been conflictive. This study aimed to assess the association between electronic media usage and depression among 6-17 years-old children in the US.

Methods: We performed secondary analysis of data from the 2011-2012 National Survey of Children's Health was performed. Children (n=54.300) of ages 6 to 17 years without mental/ intellectual disability, psychiatric co-diagnoses, or significant medical pathology were included. Multivariate logistic regression was used to assess the independent association between time spent using two selected groups of electronic media (1) computers, cell phones, and handheld video games; and (2) television-based media (both categorized as 0, 1-59, 60-119, and ≥120 minutes). Depression status was based on parental report of depression diagnosed by a healthcare profession, or occurrence of depressive symptoms more often than 'sometimes' within the previous month. The analysis was controlled for age, gender, race, primary language, income level, proximity to others depressed, mother's mental health, afterschool activities, sleep quality, and daily reading time.

Results: The prevalence of depression was 1.5%. Computer, cell phone, and handheld video games usage of ≥120 minutes/ day was associated with a 1.8 times risk of depression with compared with no usage (OR=1.8, 95% CI 1.0-3.1).TV-based media usage compared to no usage reduced odds of depression (OR=0.3,95% CI 0.2-0.7). After adjustment for other covariates, the odds of depression for ≥120 daily minutes computer, cell phone, and handheld video games usage compared to no usage became stronger (OR=2.9, 95%CI 1.4-5.8). The corresponding odds ratio for those using 60-119 minutes of TV-based media was 0.3 (95% CI 0.1-0.7). No associations were found for other levels of media usage.

Conclusions-Implications: Our results support the 2013 AAP's recommendation for children to use no more than two hours of electronic media daily. Furthermore, using TV-based media in moderation may decrease the risk of depression.

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Geographical variation of pediatric asthma: Prevalence and severity in the United States

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Keywords: Asthma, Pediatrics, Geography, Cross-Sectional

Introduction and Objectives: Asthma currently affects approximately 7 million children in the United States. Its causes are multifactorial and it has been proposed, though not thoroughly researched, that geographic location may play a role in the etiology of pediatric asthma. The objective of this study is to determine whether changes in geographic location are associated with variations in pediatric asthma prevalence and severity in the United States.

Methods: Our study is a cross-sectional, secondary analysis of data from the CDC's 2011 National Survey of Children's Health. The survey contains data from 98,019 telephone interviews conducted in the US and the USVI in which parents provided information about their child's health. Our exposure is state of residence and the outcomes are prevalence and severity (rated as mild, moderate or severe) of childhood asthma. The association between location and asthma prevalence was evaluated with logistic regression.

Results: Overall asthma prevalence was 14.2% Asthma prevalence increases steadily and continuously with age, from 6.5% in 0-3 year olds, all the way up to 18.9% in 15-17 year olds, are more common in males (16% compared to 13.2% in females), Blacks (22.9% versus 12.9% and 14.4% in Whites and other races, respectively). Hispanics were less likely than non-Hispanics to have asthma. Prematurity was associated with higher asthma prevalence (20.8% compared to 13.8% in term children). Asthma prevalence was highest in those at or below the poverty level (17.9%) and decreased steadily and continuously through each income bracket, with those at 400% or more of the poverty level having the lowest prevalence of 12.8%. Those with inadequate insurance had higher asthma prevalence (17.3%) compared to those with no insurance (13.4%), or those with adequate insurance (14.6%). Asthma prevalence varied, though not significantly, by geographic region, with the Mountain region having the lowest prevalence of 12%, and South Atlantic having the highest at 16.3%

Discussion: Geographic location, as defined by our study, was not found to be associated with prevalence of asthma in pediatric populations in the United States. However several interesting items emerged upon our data analysis which were consistent with findings from previous studies including higher rates of asthma in African American children, non-Hispanic children, and children with a history of prematurity. We speculate that grouping multiple states into each region may create data groups that are too heterogeneous to elicit more localized differences in asthma prevalence.

P45

Immune and clinical assessment in a cohort of pediatric Hispanic patients with partial DiGeorge Syndrome: An institutional review

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Keywords: DiGeorge Syndrome, Hispanics, Cardiac Defects

Introduction and Objective: DiGeorge syndrome (DGS) is the result of microdeletions of chromosome 22q11.2, resulting in a highly variable phenotype. Since scarce information is available regarding possible racial differences, the purpose of this study was to characterize the immunologic status of Hispanic and Non-Hispanic patients with DGS.

Methods: We studied patients with partial DGS by retrospective medical record review at Miami Children's Hospital from January 2009 to March 2015, and divided them into two comparison groups (Hispanic vs. Non-Hispanic). Information regarding immune studies including lymphocyte subsets counts, mitogen proliferation, serum immunoglobulins levels and specific antibody response, as well as other clinical data, was recorded. Univariate analysis was used to describe the data. Bivariate analysis for the two comparison groups was done with Chi-squared for categorical variables and using t-test for continuous variables. Unadjusted odds ratios were calculated with 95% CI. Significance was defined as $p < 0.05$.

Results: Ninety patients (50 Hispanic and 40 Non-Hispanic) aged 0 to 21 years were included. Two-thirds of diagnosis were confirmed using FISH. Twenty seven patients (30.0%) had normal T and B lymphocyte numbers. Hispanic patients had significantly lower counts in both T and B lymphocytes than Non-Hispanics (26.0% vs.7.5%, respectively, p=0.020). On the contrary, non-Hispanic patients had significantly lower counts in both CD4+

and CD8+ T cells (42.5% vs. 22.0%, respectively, p=0.032). Twelve patients (13.3%) had decreased vaccine titers and seven patients (7.8%) had hypogammaglobulinemia, without significant differences between groups. Pre-diagnosis infections were found in 22.2% of patients and were significantly more common in Hispanic (32%) vs. non-Hispanic (10%) patients (p=0.011). Cardiac malformations were common (85.6%) in both groups. No significant differences were found regarding gastrointestinal, neurological or endocrine systems. Learning disabilities and speech delay were similar in both groups.

Conclusions: Hispanic patients with partial DGS exhibit some clinical and immunological differences when compared to non-Hispanic patients. Further studies are warranted to confirm these findings.

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The association between ethnicity/race and non-medical use of prescription drugs in US adolescents: Secondary data analysis of the 2015 Youth Risk Behavior Surveillance System Survey

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Keywords: Non-Medical Use of Prescription Drugs, Adolescents, Ethnicity, Race

Objective: Primary objective was to assess whether ethnicity/race is associated with non-medical use of prescription drugs (NMUPD) in US adolescents. A secondary aim was to identify risk factors for participating in NMUPD.

Methods: A secondary analysis (cross-sectional analytical study) of the 2015 Youth Risk Behavior Surveillance System survey was conducted. US public and private high school students (14 to 17 years old) with non-missing information on NMUPD were included. Both crude and adjusted (multivariable binary logistic regression) odds ratios (OR) and 95% confidence intervals (95% CI) were computed.

Results: Sample consisted of 12,910 respondents. Only the "Others" category (Native Americans, Hawaiian/Pacific Islanders, and non-Hispanic mixed races) was associated with increased odds of NMUPD: adjusted OR 1.47, 95% CI 1.05-2.06. Other factors independently associated with NMUPD included being bullied, having a history of sexual intercourse, and use of any of the following: tobacco, alcohol, marijuana, electronic vapor products, and illicit drugs.

Conclusion: We cannot attribute our results to one specific race because "Others" is heterogeneous. Future research should clarify the independent role of each subgroup within these ethnic-race categories.

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Advanced prostate cancer manifesting with malignant ascites: A rare presentation of a common disease

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Keywords: Prostate Cancer, Malignant Ascites, Metastasis

Introduction and Objective: Prostate cancer is the second most common cancer in men, with an estimated 1,600,000 cases and 366,000 deaths annually. Its clinical behavior ranges from a well differentiated, microscopic tumor, without clinical significance, to an invasive and aggressive carcinoma with metastasis. Initial manifestation or recurrent disease presenting with malignant effusions, whether pleural or peritoneal, is extremely rare. We present a case of an elderly man with rapid, recurrent ascites, whose diagnosis was missed on numerous hospital admissions. Our discussion will emphasize on awareness of this rare presentation, as well as the diagnostic modalities available to confirm the etiology of metastatic effusion secondary to advance prostate cancer.

Case Presentation: An 80 year of male, with past medical history of essential hypertension and prostate cancer, diagnosed and managed operatively in Cuba, presents to the emergency department complaining of dyspnea and abdominal fullness. This was his third admission for therapeutic paracentesis in the past 3 month. Physical exam was remarkable for a large, tense protuberant abdomen. Abdominal ultrasound showed marked ascites with no evidence of cirrhosis. Laboratory tests revealed mild anemia, with a hemoglobin 12.3 g/dl, elevated erythrocyte sedimentation rate (113 mm/h), slight elevation of Aspartate transaminase (41 U/L), and high prostate-specific antigen (1398 ng/mL). Viral hepatitis serology and alpha fetoprotein was negative. An abdominal and pelvic Computed Tomography scan detected a mass-like soft tissue density in the pelvis, inseparable from the posterior aspect of the urinary bladder and anterior wall of distal sigmoid colon, as well as diffuse sclerotic osseous metastatic disease. A diagnostic and therapeutic paracentesis was performed. The serum-ascites-albumin-gradient was 0.6 with cytological analysis negative for malignant cells. Bone scan suggested extensive skeletal metastases to the vertebrae, pelvic bones, and ribs. Given our finding along with the patient's past medical history, diagnoses of malignant ascites secondary to prostate cancer was made. Supportive and palliative care was advised.

Conclusions- Implications: Prostate cancer can metastasize to almost any organ, common sites being bones, lymph nodes, and lungs. Under 20 cases of malignant ascites have been reported since 1968. Studies suggest peritoneal fluid involvement is caused commonly by secondary primary malignancies, gastrointestinal malignancies being the leading cause. However, there have been postmortem reviews demonstrating no disease elsewhere. Various diagnostic tools to confirm diagnosis have been proposed. Since fluid analysis for PSA and PAP are commonly used, but often are negative in poorly differentiated prostate cancers, specific immunostains have been developed to aid diagnosis. Peritoneal biopsy is used when fluid analysis fails to confirm the etiology.

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Comparison of iterative model based reconstruction and hybrid iterative reconstruction technique in coronary artery image quality in obese patients

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Keywords: Iterative Model Reconstruction, Filtered Back Projection, Cardiac Computed Tomography Angiography, Obesity

Introduction and Objectives: CT image quality is critical for the accurate diagnosis of coronary disease. Post-acquisition algorithms improve image quality by reducing image noise. We propose to evaluate image quality (IQ), signal to noise ratio (SNR), and contrast to noise ratio (CNR) from coronary CTA (CCTA) images in obese patients acquired using two reconstruction techniques.

Method and Materials: We retrospectively analyzed the data of 25 consecutive obese (BMI >30 kg/m2) patients (mean age 51.5 ± 10.8 years, 64 % male) who underwent CCTA studies in a 256 slice scanner. The kV value was adjusted based on BMI (mean 36.3 ± 4.9 kg/m2). For each patient, images were reconstructed using both hybrid iterative reconstruction technique (iDose) and iterative model reconstruction (IMR) technique. Both reconstruction series for each patient were randomized (n=50). IQ was assessed qualitatively (Likert scale (LS) and quantitatively (SNR, CNR) by two experienced blinded readers for the 4 major coronary vessels RCA, LM, LAD and LCX on axial and multiplanar reformatted images. The LS was used as five point score; where 1=non-diagnostic, 2=poor, 3=acceptable, 4=good, and 5=excellent. Image noise was determined by the standard deviation of the pixel values within a 50-mm2 ROI in the ascending aorta.

Results: The mean image noise of IMR images (14.0 ± 4.9 Hounsfield Units [HU]) was significantly lower than iDose images (31.1 ± 11.5 [HU]; p < .001). The CNR improvement in each vessel was statistically significant when comparing IMR to iDose. Furthermore, the SNR had a statistically significant improvement with the use of IMR. Diagnostic confidence was improved for individual coronary segments as well as the overall study (overall diagnostic confidence IMR mean 4.7 ± 0.54, iDose mean 4.1 ± 0.76, p < .001).

Conclusions-Implications: In conclusion, the iterative model reconstruction algorithm provides superior image quality when compared to a hybrid iterative model reconstruction in patients with high BMI without needing to increase radiation dose. This can allow for further applications in radiation reduction and further implementation of CCTA in all populations.

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Association between gender and in-hospital mortality among intubated hemorrhagic stroke patients in Florida

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Keywords: Hemorrhagic Stroke, Intracerebral Hemorrhage, Sex Differences, Gender Differences

Introduction: Stroke is the 5th leading cause of death worldwide, with intracerebral hemorrhage (ICH) accounting for 10-15% of strokes and resulting in a greater degree of morbidity, mortality, and loss of quality of life compared to ischemic strokes.

Objective: To determine if gender differences exist in in-hospital mortality of intubated hemorrhagic stroke patients within Florida and if this relationship is modified by age, ethnicity or race.

Methods: A retrospective cohort study was performed using a sample of 3,409 adult intubated hemorrhagic stroke patients obtained from the Florida Hospital Discharge Database for Stroke. The primary outcome was in-hospital mortality as determined by vital status on discharge. The observation period spanned from 2008 to 2012. Covariables included age, gender, race, ethnicity, insurance status, and various comorbidities. An exploratory analysis of the variables was performed followed by bivariate analysis to assess for the distribution of potential confounders. Tests for collinearity were performed. Multivariable logistic regression was used to calculate unadjusted and adjusted odds ratios for in-hospital mortality between men and women.

Results: There was no statistically significant association between gender and in-hospital mortality (unadjusted OR 1.1, 95% CI 0.9-1.2). Even after adjustment for age, race, ethnicity, insurance status, hospital type, smoking status, hypertension, past MI, CAD, CHF, COPD, atrial fibrillation, hyperlipidemia, and alcohol abuse, there was no significant association between gender and in-hospital mortality (adjusted OR 1.1, 95% CI 0.9-1.3). Logistic regression analysis did not reveal any interactions on the relationship between gender and in-hospital mortality by age, ethnicity, or race. Patients older than 75 years-old had statistically significant higher odds of death both before and after adjustment (adjusted OR 1.9, 95% CI 1.4-2.5). Non-insured patients also had higher odds of death compared to insured patients (adjusted OR 1.7, 95% CI 1.3-2.3).

Conclusions-Implications: There is no difference in in-hospital mortality between men and women in intubated hemorrhagic stroke patients in Florida. However, it is still imperative to continue educating the public about the signs and symptoms of strokes in order to prevent stroke deaths among women who may perceive stroke as a man's disease.