

# ABSTRACTS

## SECTION IX. HEALTH SCIENCES

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#### Paper Session

Thursday Morning, 8:00 – 10:40 AM

KCC Room A

Ronald N. Hunsinger, Presiding

1. 8:00 ALABAMA ASTHMA COALITION (AAC): EDUCATION, HEALTHCARE, & ADVOCACY THROUGH STATEWIDE PARTNERSHIPS. *Ellen Buckner*, Samford University; *Linda Gibson*, Auburn University. The Alabama Asthma Coalition (AAC) reorganized in 2017 to connect the network of professionals and organizations dedicated to asthma care. More than 50 organizations and individuals are actively collaborating including the Alabama Department of Public Health (ADPH), hospitals, school nurses, asthma/allergy/pulmonary specialists, respiratory therapists, pharmacists, certified asthma educators, and non-profit organizations such as the American Lung Association (ALA). Members represent all geographic areas of the state and a wide variety of backgrounds and experiences. The mission is to identify and support best practices in education, healthcare, and advocacy. The AAC met in face-to-face and virtual meetings in 2017-2018 and identified priorities for action. It established an interactive online site to connect members of upcoming conferences, professional development sessions, and grant opportunities. Initial priorities were determined in breakout groups and all three groups indicated the need to involve more stakeholders and community participants. Education: A survey of Alabama school nurses was implemented in summer 2018 to assess their asthma perceptions and needs. This survey provides baseline data on tools needed to support effective collaboration in asthma self-management. Healthcare: The AAC collaborates with the community, health care providers, and schools across the state to address asthma management barriers such as encouraging common use of an Asthma Action Plan in primary healthcare clinics. Advocacy: Priorities include increasing public awareness, promoting Tobacco-free environments, and funding asthma care/education. The AAC is one of many state coalitions organized under the CDC Asthma Programs in mid-2000s. The coalition continues today as interprofessional volunteers build our agenda. We will highlight the impact of the coalition in its second year of renewal, and will address partnership plans and strategies for upcoming years. Priorities for each area are open to continuing discussion and collaboration.
2. 8:20 \*\*g ENDOTHELIAL TO MESENCHYMAL TRANSITION IN PULMONARY ARTERIAL HYPERTENSION. *Mayen Gonzalez*, *Rebekah Morrow*, *Jonathan Brown*, *K. Adam Morrow*, and *Audrey Vasauskas*, Alabama College of Osteopathic Medicine. Pulmonary arterial hypertension (PAH) is an elusive, yet serious constrictive pulmonary

vascular disease with grim prognosis. Treatment options are limited due to patients' advanced stage of disease at time of presentation. Emerging evidence suggests that PAH develops through a cancer-like progression. Epithelial-to-mesenchymal transition, a hallmark of cancer, is associated with cells' ability to resist anti-proliferative signals. Pulmonary arterial endothelial – to – mesenchymal transition (EndMT) has been implicated in PAH progression and severity, but the mechanisms driving this process remain to be elucidated. It is well-established that mutations in the bone morphogenetic protein receptor 2 (BMP2) predispose individuals to development of PAH. Our research investigates the possible relationship between aberrant BMP2 signaling in pulmonary artery endothelial cells and End-MT in these cells. Here, we discuss preliminary evidence for End-MT in PAECs and possible mechanisms for this reprogramming. Supported by NIH1R15HL137135-01A1

3. 8:40      **\*\*g AN ERP STUDY OF THE NEUROPHYSIOLOGICAL EFFECTS OF VISUAL WORD RECOGNITION.** *Donald Knapp*, and Jack Shelley-Tremblay, University of South Alabama. Prior research on visual word recognition shows a facilitative effect during several visual word recognition tasks when considering phonological neighborhood density. Source localization will be used on event related potentials (ERP) to see which neural networks are contributing to this effect. The subjects decided whether a phrase was a word or nonword while ERPs were recorded. These phrases varied across phonological neighborhood density (PND). The analysis of the ERPs will be done using MATLAB's EEGLab toolbox and the Source Information Flow Toolbox (SIFT). This allows for modeling a causal electrical flow from several sources over the course of three seconds. Previous results have shown that words with a higher PND were responded to more rapidly compared to the lower PND words. Words with lower PND also had a higher voltage during the N450 component. This may indicate additional semantic processing was required for the lower PND words due to a comparatively lower amount of phonological activation. This study has implications for language development and reading.
  
4. 9:00      **THE SECOND VICTIM PHENOMENA: SUPPORTING LABOR & DELIVERY NURSES AFTER A SEVERE MATERNAL EVENT.** *Amy Davis*, University of South Alabama. *Problem:* The national increase in maternal morbidity and mortality, influencing the second victim phenomena, requires organizational evaluation of the patient safety culture. Policies and practices are inconsistent related to organizational support after a severe maternal event for nurses working in labor and delivery. A children's and women's hospital in the southeast United States identified the need for a structured protocol and policy. *Purpose:* The project purpose was to assess implementation of the first component of the Support after a Severe Maternal Event Patient Safety Bundle through the selection of a unit-based protocol and evaluate barriers to implementation. A secondary aim was to provide nursing education on the bundle and purpose of organizational support. *Approach:* The first component was implemented using the Clinician Support Toolkit for Health Care. Recommendations included: (a) evaluate current organizational safety culture and policies, (b) evaluate effectiveness of unit-based drills, and (c) select a unit-based protocol. A multidisciplinary project team was assembled to participate in planning and evaluating departmental readiness. Nurses received education on the bundle, the protocol, and just

culture. *Results:* The assessments revealed a weakness in organizational practices and policies. Positive feedback was received from staff education sessions. A final assessment revealed reasons to reorganize the plan for progression with the remaining components of the bundle. *Implications for practice:* Successful outcomes for nurses and the organization when an event occurs requires planning to prepare for the emotional and psychological responses of the second victim. The bundle provides strategies to improve patient safety and organizational response.

5. 9:20       \*\*g IMPROVING CARE FOR PEDIATRIC PATIENTS WITH ASTHMA IN THE EMERGENCY DEPARTMENT: A QUALITY IMPROVEMENT PROJECT. *Ashleigh F. Bowman* and Lisa Dailey, University of South Alabama. *Objectives:* To examine whether specific asthma education and providing an individualized asthma action plan (AAP) at the time of discharge would impact future return visits to the emergency department (ED) and/or hospital admissions. Additional outcomes include follow-up with the primary care provider (PCP) and increased caregiver knowledge on a pre- and post-assessment. *Methods:* Patients ages 5 to 18 years were identified for inclusion in the project by nursing if they presented to the ED with a primary complaint of acute asthma exacerbation. Parents completed the pre-test of the Asthma Knowledge Questionnaire on arrival. At discharge, families were supplied an individualized AAP by the provider, which also served to guide discharge education. Thirty days following the initial ED visit, a follow-up phone call was completed to determine if the patient had PCP follow-up and/or was prescribed an inhaled corticosteroids (ICS), if he or she qualified per guideline recommendations. *Results:* Seventy-two patients were ultimately identified for inclusion. Over 90% received an AAP at discharge. Thirty-eight patients completed all questions on the pre- and post- questionnaire without a statistically significant increase between scores. Overall PCP follow-up rate was considerably low. ED return visit was 13.8% at 30 days with a subsequent admission rate of 4.1%. *Conclusions:* Providing asthma education with an AAP at the time of ED discharge was effective in increasing caregiver education. Further, potentially collaborative, efforts may be required to increase PCP follow-up rate for asthma. Additional analysis will reveal whether ED visits for asthma can be reduced over the long-term.
5. 10:00       PROPOSAL FOR A CONGREGATIONAL HEALTH MINISTRY IN A CHURCH OF CHRIST. *Tameka Pritchett*, Samford University. According to *Healthy People 2020* (2014), one of the key priorities to promote health and wellness is to provide “access to comprehensive, quality health care services for the achievement of health equity and for increasing the quality of a healthy life for everyone” (Overview section, para.1). The United States Census Bureau (2014b) states that there were 42 million people in 2013 without health insurance coverage. The purpose of the project was to identify needs of one African American congregation for recommendation to implement a health ministry program. The Congregation Health Ministry survey consisted of 52 questions with 43 participant’s  $\geq$  19 years of age. Data was analyzed by a statistician using SPSS for the recommendation of the health ministry program. *Limitations:* Missing data; Participants not honest or gave incorrect information via survey; Majority of participants were females; and Self-reporting of height and weight. *Recommendation/Results:* The need for education on prevention, health maintenance, and access to health services was recommended. Discuss strategies to facilitate health promotion awareness. *Results:* HYPERTENSION- 48%, HEART DISEASE- 7%, DIABETES- 14%, CANCER- 9%.

6. 10:20 DIGITAL BREAST TOMOSYNTHESIS: OUT WITH THE OLD. IN WITH THE NEW. *Donna Cleveland*, University of South Alabama. Digital breast tomosynthesis (DBT) has rapidly emerged as an important new imaging tool that reduces the masking effect of overlapping fibroglandular tissue, thereby improving breast cancer detection. This paper will review the key features of DBT including technique, clinical implementation, and benign and malignant imaging findings. It will also present the benefits of DBT in screening, diagnostic workup, and image-guided biopsy.

Mammography screening can save lives because breast cancer is a progressive disease and early detection enables improved prognosis due to appropriate treatment of small nonpalpable node-negative cancers. Multiple randomized controlled trials and observational studies have shown that mammography can reduce breast cancer mortality by 30% or more [1–3]. Despite the success of mammography, overall sensitivity is limited by the presence of dense fibroglandular breast tissue, which can obscure an underlying cancer [4, 5]. Specificity is also reduced by the presence of overlapping fibroglandular tissue, which can mimic the appearance of cancer. Digital breast tomosynthesis (DBT) represents another significant advance in mammography technology, enabling multiple tomographic images to be obtained in any conventional mammographic view, creating a “semi-3D” mammogram. This enables visualization of a sequential stack of thin image “slices” of the breast, minimizing the masking effect of overlying tissue and enabling improved cancer detection while simultaneously reducing false-positive findings. Tomosynthesis images are acquired as the x-ray tube travels across a limited arc above the breast and multiple low-dose x-ray exposures are obtained. The motion of the tube, the length of the arc, and the time it takes to obtain a complete set of projection images—reconstructed into thin image slices spaced at 0.5–1.0 mm—are variable across different manufacturers. Specifications of tomosynthesis units are manufacturer dependent and currently, there are three FDA-approved tomosynthesis units. Objective: The Food and Drug Administration (FDA) first approved DBT in 2011, and multiple studies have shown that DBT is effective in both screening and diagnostic settings. This paper will review the DBT technique and address practical considerations regarding the implementation of DBT into clinical practice in the screening and diagnostic setting of breast intervention.

Conclusion: Breast Tomosynthesis improves interpretive performance and will likely replace conventional 2D mammography in clinical practice.

**\*\*u or \*\*g** Denotes presentation entered in student competition as an undergraduate or graduate student, respectively.

## SECTION IX: HEALTH SCIENCES

### Poster Session

### Thursday Morning

### *KCC Atrium and Ballroom Foyer*

### Authors Set-up: Begins at 7:30 AM

### Authors Present: 11:00 AM - 12:00 Noon for Viewing and Judging

### Ronald N. Hunsinger, Presiding

8. **\*\*u ANIMAL-ASSISTED THERAPY RESEARCH FOR CHILDREN WITH AUTISM.** *Caitlin Perry*, Faulkner University. This case study focused on the addition of a therapy dog in a clinical therapy session that included children with Autism Spectrum Disorder. The purpose of this study was to determine how Animal Assisted Therapy may benefit and support Autism during a speech language session. The data collected were analyzed to gain an understanding of how the addition of a therapy dog could assist with children in successful speech, language, and behavior of students with ASD. Qualitative methods of research were also used to conduct this study through the use of observations, conducting therapy sessions with and without the therapy dog, in order to test the quality of the child's interactions and behavior during the session. The study focused on different children with autism spectrum disorders. Most that were studied had a behavior problem that caused difficulties throughout the therapy session. This study was conducted over the several months in late 2018. The goal of this study was to determine if the use of a therapy dog during a speech therapy session would increase interaction and good behavior of the patient.
  
9. **\*\*u RESPONSE OF ATHLETES TO TWO STRETCHING ROUTINES BEFORE EXERTION.** *Cody Parmer*, Faulkner University. In many sports stretching is an important part of warmup routines before workouts, practices and games. The purpose of this experiment was to determine if static stretching three times per week for one month would shorten timings of a "T-test" and a 40-yard dash run by male college athletes. All of the subjects jogged one lap around a football field and rested briefly before the first timed tests. The control group continued their normal exercising while experimental group added a prescribed month of weekly stretches for the hamstring group, the quadriceps group, the hip flexor group and the gluteus maximus. After the month both groups were again tested and the results were analyzed. The results of the analyses are presented in this report.
  
10. **\*\*u EVALUATION OF NURSE'S KNOWLEDGE AND CONFIDENCE IN ACUTE PSYCHIATRIC CARE.** *Chandler Jones*, Chrystal Lewis, and Sonia Smith, University of South Alabama. **BACKGROUND:** The number of patients with mental disorders is increasing, and for some patients, the only place to receive care is in the emergency room. The staff caring for these patients do not receive any additional workplace education or training on acute psychiatric care. **AIM:** The first aim of this study is to evaluate the knowledge and confidence of the emergency department nursing staff in caring for psychiatric patients. The second aim of

the study seeks to improve the knowledge of the emergency department nursing staff by providing education regarding acute psychiatric patient care.

**METHODS:** This quasi-experimental study utilizes a pretest and posttest questionnaire for data collection. The emergency department nurse's knowledge and confidence in acute psychiatric care will be examined with these questionnaires. A paired t-test will be used to determine if differences exist between data collected before education and data collected after education was implemented.

**RESULTS:** Data collection is currently in progress, results are pending.

**CONCLUSION:** Emergency department nurses would benefit from additional education on acute psychiatric care.

11. **\*\*u SKIN TO SKIN CONTACT IN THE SACRED HOUR OF NEONATAL LIFE.**

*Lauren Gardner, Leigh A. Minchew, and Chrystal L. Lewis, University of South Alabama.* **BACKGROUND:** The importance of implementing skin to skin contact within the first 60 minutes of extrauterine life is endorsed by the World Health Organization and JOGNN. Yet, skin to skin contact for the recommended 60 minutes is not consistently implemented in practice settings.

**AIM:** The aim of this research study was to 1) assess Labor and Delivery (L&D) nurses' knowledge of current skin to skin care policies and national guidelines at an academic health science center hospital 2) determine L&D nurses' perceived barriers to implementing skin to skin contact during the first hour of neonatal life in uncomplicated vaginal deliveries 3) determine L&D nurses' confidence in implementing skin to skin contact during the first hour of life.

**METHOD:** Nurses were provided a survey packet that contained: Demographic and Nurse Survey; Knowledge Questionnaire; and the *Modified Mother-Newborn Skin-to-Skin Contact Questionnaire* (Nahidi, 2014). The survey was collected and evaluated by the researcher. The results will be aggregated and shared with hospital leaders and Labor and Delivery nursing staff.

**RESULTS:** Data collection is currently in progress, results are pending.

**CONCLUSION:** Initial brief data analysis revealed an opportunity to expand knowledge of skin to skin contact, identified lack of maternal knowledge and staffing shortages as barriers to implementation, and demonstrated L & D nurses' felt very confident.

Therefore, L & D nurses feel supported with implementing skin to skin care.

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