

TIPS ON WRITING AN ABSTRACT

Typically, an informative abstract answers the following questions in 150-400 words:

- Why did you undertake this study or project?
- What did you do and how?
- What did you find?
- What do your findings mean?

These are the basic components of an abstract in any discipline:

- 1) Motivation/problem statement:** Why do we care about the problem? What previous research are you building on? What practical, scientific, scholarly, theoretical, or artistic gap is your research filling?
- 2) Methods/procedure/approach:** What did you actually do to get your results? (e.g. analyzed three novels, completed a series of five oil paintings, interviewed 17 students)
- 3) Results/findings/product:** As a result of completing the above procedure, what did you learn, invent, create, or discover?
- 4) Conclusion/implications:** What are the larger implications of your findings, especially for the problem or gap identified in step 1?

However, it is important to note that the weight accorded to the different components can vary by discipline. Here are some tips on how to write:

- Since an abstract will nearly always be read along with the title, do not repeat or rephrase your title.
- Your abstract should be complete enough to stand on its own.
- Your readers expect you to summarize your purposes, methods, and main findings. Emphasize the different points of your study in proportion to the emphasis they receive in your poster.
- DO NOT discuss information in your abstract that is not in your presentation. This is very important and is a little like "truth in advertising." You do not want to give your reader the impression that your study covers information it does not actually contain.
- Avoid using the first person "I" or "we."
- Choose active verbs instead of passive ones (ex: use "the study tested" instead of "it was tested by the study" or "I tested in the study").
- Avoid, if possible, using trade names, acronyms, abbreviations, or symbols in your abstract that you will need to use valuable space to explain.
- Avoid evaluative language in your abstract; report your findings instead of praising or criticizing them.
- Use key words from the document to help indexers more accurately catalog your presentation for future reference.
- Be sensitive to the needs and knowledge of your audience. What might seem perfectly obvious to you after working on a research project may be a brand-new concept to your audience.



SCHOOL OF MEDICINE AND HEALTH SCIENCES

FAM210A and SOST Polymorphisms are Associated with Musculoskeletal Phenotypes in Healthy Young Adults

Recent research has suggested that genetic variants associated with bone mineral density (BMD) and fracture risk may also predict the rate of bone acquisition and peak bone mass. Genetic variants in the muscle-specific FAM210A (rs4796995) and the bone-specific SOST (rs4792909) have been shown to be associated with total BMD and fracture risk in adults. The purpose of this study is to explore the influence of these genetic variants on musculoskeletal phenotypes in three previously developed cohorts of children and young adults. Applied Biosystems Taqman allelic discrimination assays and the QuantStudio 7 Flex Real-Time PCR System were used to perform genotyping. Hardy-Weinberg equilibrium was assessed. Phenotypes were tested in sex-specific cohorts with an additive model using analysis of covariance (ANCOVA) methods. Where applicable, post hoc pair-wise comparisons were performed and the resulting p-values adjusted using the Sidak method. Statistically significant associations were found between variants of rs4796995 and dominant arm baseline bone volume ($p=0.005$) and baseline cortical bone volume (dominant $p=0.004$, non-dominant $p=0.018$) in Caucasian males from an exercise cohort. Associations were also found between rs4796995 variants and the left hand isometric grip strength ($p=0.007$) in African American women and VO₂ max ($p=0.037$) in Caucasian males from a cohort assessing inherited markers of metabolic syndrome. We have demonstrated that variations in the FAM210A gene in healthy young adults are strongly associated with markers of musculoskeletal fitness. These findings suggest that individuals with the minor allele, particularly Caucasian males, may be at risk for developing lower peak bone mass and muscle strength at skeletal maturity. Early identification of genetic variants associated with BMD and fracture risk has the potential to aid the development of personalized medicine strategies designed to mitigate long term fracture risk by maximizing the use of appropriate fitness, nutrition, and other health maintenance strategies.

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Sex Differences in the Peripheral Immune Response to Social Isolation Stress

Social isolation (SI) increases susceptibility to neuropsychiatric illnesses such as depression and anxiety. Various homeostatic imbalances, changes in neurological development, and changes in neurotransmitter release from social isolation stress likely contribute to the behavioral changes seen in such disorders. However, current therapies for these different psychological disorders are inadequate, highlighting the lack of complete understanding of the intricate pathways involved in the pathophysiology of such neuropsychiatric disorders.

There is increasing evidence for the influence of immunological networks and inflammation on psychiatric disorders, but the exact mechanisms are not yet well understood. In the current study, using a rodent model of SI stress we characterized the peripheral immune response to social isolation stress. We hypothesized that SI stress would alter the peripheral immune cellular profile which would be influenced by biological sex.

Male and female mice underwent two weeks of SI stress in which they were singly housed in standard cages. Control mice were housed in standard cages in groups of five mice per cage. Following SI, they were then tested in a battery of behavioral tests that assay social interaction, anxiety, and stress coping behavior. Brain, spleen, and blood samples were collected from all mice. Splenocytes were isolated and stained with adaptive immune cell markers (CD3-APC, CD4-FITC, CD62L-PE, CD45-PerCP-Cy5.5, CD44-PE-Cy7, CD8a-APC-Cy7, CD19-APC-Cy7) and innate markers (CD11b-Pacific Blue, CD11c-APC, F4/80-PE-Cy7) for fluorescence activated cell sorting (FACS). Effector memory cells were characterized as either CD3+/CD4+/CD44+/CD62L- or CD3+/CD8+/CD44+/CD62L-, and central memory cells were characterized as CD3+/CD4+/CD44+/CD62L+ or CD3+/CD8+/CD44+/CD62L+. FlowJo v10 software was used for analysis of data obtained from FACS.

FACS analysis showed no SI stress or sex differences in populations of CD3+, CD3+/CD4+, CD3+/CD8+, CD11c+, or B-lymphocytes. However, when we examined effector memory cells, the male SI group had increased percentage of CD4+ effector memory cells (44.38%) compared to male controls (32.36%) while the female SI group had a decreased percentage of effector memory cells (39.91%) compared to female controls (46.20%). We observed similar differences in CD8+ effector memory cells (male SI stress (27.65%) vs male control (15.61%) and female SI stress (15.75%) vs female control (25.48%)).

These data suggest a shift towards an inflammatory immune profile (increased effector memory cells) following SI stress that is sex dependent. The impact an immunological memory (effector vs central) shift has on the neurobiological response to SI is not clearly understood. Further studies are needed to examine this neuroimmune cross-talk.

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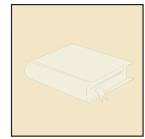
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SCHOOL OF MEDICINE AND HEALTH SCIENCES

Designing a Simulated Clinic to Supplement Recruitment and Leadership Training

Every year, our clinic faces challenges with training new volunteers in time for the official handoff of clinic operations and maintaining patient care at the current standard. Many student-run free clinics experience similar challenges given the intensity of medical school education and the limited terms of clinic leadership. Taking on this role can be overwhelming as many students have been to fewer than two clinic nights themselves prior to the leadership transition.

The strengths of the training included aspects specific to our clinic, including blood draw protocol, the referral process within our Patient Navigator program, and how a clinic night flows. Weaknesses to the training included broader healthcare concepts, such as a lack of increased understanding of what the overall role of a primary care provider is and limited improvement in conceptualizing healthcare delivery in an underserved setting. Overall, the main goal of the mock clinic night was focused on specifics. Additionally, students were also initially more comfortable with these broader concepts as opposed to the specific skills of the GW Healing Clinic which could have contributed to the overall limited improvement in those weaknesses.

This event was overall successful and was able to be done with limited resources. It was a great way to engage volunteers and help them to feel more comfortable in clinic during their initial shifts.

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Pediatric Resident Preparedness for Neonatal Intensive Care Unit (NICU) Disasters: A Mixed Methods

NICU disaster preparedness is essential to safely care for neonates during a crisis. Pediatric residents in the NICU are essential personnel who can play critical roles in a disaster response. However, they are seldom considered in disaster protocols and disaster preparedness research. This study aimed to assess pediatric residents' preparedness, their potential roles during two NICU disaster scenarios, and determine their training needs. To meet this objective, semi-structured interviews with 10 senior pediatric trainees were used to create response choices for a survey (mixed-methods design). Questions addressed resident roles and responsibilities during NICU crises (evacuation and surge), current preparedness, prior experience and perceived training needs. Survey results were used to confirm themes from interviews. Results from the interviews showed central themes: 1) lack of prior disaster training, 2) unpreparedness for evacuation or surge, 3) importance of disaster training, 4) insufficient knowledge of NICU disaster protocols, and 5) primary role of residents as system facilitators e.g. clerical work. Of the 37 senior pediatric residents invited to participate in the survey, 30 responded (81%) (57%, 21 full completion). The survey confirmed that all residents (100%, 30) did not have prior NICU disaster training and most did not feel prepared for either evacuation (88%, 24) or surge scenarios (82%, 23) due to unfamiliarity with content (100%, 24 evacuation, 23 surge) and location of disaster protocols (100%, 23). Potential resident roles included: recruiting other residents (35%, 7), clerical work (26%, 5), and any role assigned by supervisor (21%, 4). Residents agreed that education on NICU disaster protocols (100% evacuation, 91% surge) would make them feel more prepared and most wanted to receive training (90%). Residents believed that a multipronged approach during NICU rotations (53%, 10), in the form of multidisciplinary simulations (89%, 16), a NICU disaster handbook (78%, 14) and a description of residents' roles (72%, 13) should be used. Most were willing to respond to a hospital disaster (84%, 16) but did not know their specific role (96%, 22), even though they believed they had an important one to play (84%, 16). In conclusion, pediatric residents' views on NICU disaster preparedness are quite universal and are not limited to residents who self-selected to be interviewed. Residents lacked experience but were enthusiastic to receive training and participate in disaster response. Educating residents should include NICU disaster protocols and multidisciplinary simulations during NICU rotations to allow them to contribute fully to any disaster response.

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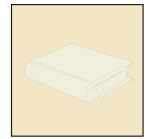
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An Evaluation Guideline for a Service-Learning Curriculum Implemented in Medical Education

The purpose of this project is to evaluate the impact of student community service activities on recall, comprehension, and application of learning objectives from the Clinical Public Health (CPH) aspects of the medical curriculum. CPH theme lectures and Summits were added to the medical curriculum at The George Washington University School of Medicine and Health Sciences (GW SMHS) in 2014. Many GW medical students perform community service during medical school through voluntary student activities such as The Healing Clinic, Whitman-Walker Health and activities of various student organizations. This project is being conducted in the context of an overall evaluation of the CPH curriculum. The specific objective of this project is to create an evaluation guideline for a Service-Learning Curriculum in medical education. This information will aid in the development of the pilot program because it will provide how the program will be evaluated on deliverables.

An initial retrospective analysis of existing literature specific to the area of service-learning curriculum within medical education was undertaken utilizing the following methods: PubMed, Himmelfarb, and Journal of Graduate Medical Education. A deficiency in this specific area was identified. Follow-up discussion with experts in the field provided an outline for critical information which was incorporated into guidelines by our team.

The evaluation guideline was designed. From the literature and advice from experts, it was emphasized that a thorough evaluation would need both qualitative and quantitative data. In the context of a service-learning curriculum, this means reflections from students and community partners as well as evaluations of perception of success from faculty. In addition to this, quantitative data will be collected in the form of a survey with statements/questions to agree/disagree from a scale of 1 to 5.

To our knowledge, this is the first evaluation guideline of service-learning curriculum in medical education that will be released for universal use. The implications of this evaluation guideline are to be used to determine the success of the implemented service-learning curriculum for GW SMHS and other medical schools.

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Medical Student Perceptions on the Effectiveness of an Online, Interactive Quizzing Tool for Learning Histology and Pathology at the George Washington University School of Medicine and Health Sciences (GWU-SMHS)

A move toward blended teaching in medical school curricula often results in decreased in-class time for disciplines such as Histology and Pathology, as it has at GWU-SMHS. This study proposes to balance loss of in-class time with a self-study quizzing tool to increase medical student learning and comprehension of histology and pathology, which are foundational disciplines in preclinical organ system studies. Since many studies have shown that quizzing increases learning, we developed an online, interactive, quizzing tool that allows students to test their ability to recognize visual features and to recall information important to an understanding of histology and histopathology. This study reports preliminary results on the perceptions of medical students concerning the effectiveness of the quizzing tool as measured by survey.

Images for the quizzing tool were derived from the MicroAnatomy and Pathology Atlas (MAPA) currently used by students for studies of histology and pathology (<http://microanatomyatlas.com/>). The on-line quizzing tool was designed to display representative images without annotations or descriptions until these are activated by the student, allowing students to quiz themselves on the findings (<http://microanatomyatlas.com>). The quizzing tool was provided to students in the GWU-SMHS class of 2022 near the beginning of each system block and used by them at their discretion. On completion of the Pulmonary organ block, students are invited to complete a Google Form survey asking if and how they used the quiz tool and the extent of their use of it, with feedback about what they liked and did not like about the tool. A Likert scale (1-5 most useful) was used by students to rate the usefulness of the tool for their learning.

The quiz tool survey was completed by 29.8% of students (56/188) after the pulmonary organ system block in 2019. The quizzing tool was rated at 5 (most useful) by 60.7% of students, 30.4% rated it at 4, 7.1% at 3, 1.8% at 2, and 0% at 1. In answering the question "Did using the quizzes make you more comfortable about answering histology questions on your exam?", 96.4% of respondents answered yes (54/56).

Preliminary results find that the majority of students perceive that the quizzing tool has a positive impact on learning histology and histopathology. Future studies using the quizzing tool will include additional qualitative analysis of survey results and the impact of using the tool on exam performance.

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SCHOOL OF MEDICINE AND HEALTH SCIENCES

Comparison of Cardiovascular Disease Rates in Women between United States and Costa Rica

Cardiovascular Disease (CVD) is the number one cause of death globally taking the lives of 17.7 million every year. Majority of deaths are due to strokes and heart attacks. Risk factors of developing cardiovascular disease include abuse of alcohol, obesity, tobacco smoking, and people with sedentary lifestyles. Risk factors of death due to CVD include hypertension, hyperglycemia, and hyperlipidemia. This project aimed to compare trends in the rates of cardiovascular disease between the United States and Costa Rica. Data from the Global Burden of Disease, World Health Organization, World Bank was used to analyze prevalence and death rate of cardiovascular disease along with factors such as gross domestic product, life expectancy, and differences in health system. The prevalence of cardiovascular disease is lower in Costa Rica than the prevalence of CVD in the United States. This research analyzed differences in many factors such as access and cost of health care and healthcare delivery systems that may contribute to the difference in prevalence of cardiovascular disease between both countries. Cardiovascular disease is a global burden and causes of CVD must be continued to be assessed.

La enfermedad cardiovascular (ECV) es la principal causa a nivel global, cobra la vida de 17,7 millones de personas cada año. La mayoría de estas muertes, son debido a eventos cerebrovasculares y síndromes coronarios. Los desencadenantes de la enfermedad cardiovascular incluyen el abuso de alcohol, la obesidad, el consumo de tabaco y un estilo de vida sedentario. Los factores de riesgo de muerte por ECV incluyen hipertensión, hiperglucemia e hiperlipidemia. Este proyecto tuvo como objetivo comparar las tendencias en las tasas de enfermedad cardiovascular entre los Estados Unidos y Costa Rica. Los datos de la carga mundial de enfermedades, la Organización Mundial de la Salud y el Banco Mundial se utilizaron para analizar la prevalencia y las tasas de mortalidad por enfermedades cardiovasculares junto con factores como el producto interno bruto, la esperanza de vida y las diferencias en el sistema de salud. La prevalencia de enfermedad cardiovascular es más baja en Costa Rica en comparación con el mismo indicador para los Estados Unidos. La enfermedad cardiovascular produce una carga global, además las causas de ECV deben continuar siendo monitorizadas.

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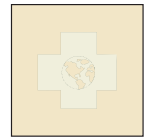
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SCHOOL OF MEDICINE AND HEALTH SCIENCES

The Development of an Emergency Medicine Residency in Kigali, Rwanda

Emergency medicine is quickly becoming its own discipline in various low and middle income countries, including Rwanda. The Human Resources for Health (HRH) initiative was launched in 2012 to address the country's lack of trained emergency physicians. Through this initiative, the Rwandan Ministry of Health partnered with a group of U.S. universities for support and education. Faculty from U.S. medical, health management, and dentistry schools traveled to Rwanda to assist in hospitals, and in various medical / nursing schools. The HRH program aims to develop Rwandan medical specialists to address the issues of health worker shortages, poor quality of education, and management of health facilities. One program under the HRH initiative is the Master of Medicine in Emergency Medicine (MMed) at University Central Hospital of Kigali (CHUK). This paper provides a description of the history, development, and current state of emergency medicine in Rwanda, with specific focus on Rwanda's first emergency medicine residency program at CHUK.

A literature review was conducted using PubMed. Data and descriptions regarding emergency care specifically at CHUK were gathered from relevant websites and peer reviewed articles. Information on CHUK was also obtained directly from hospital personnel during the authors time at CHUK.

As of January 2019, CHUK has graduated 6 emergency medicine residents. The program currently has 8 fourth years, 6 third years, 4 second years, and 1 first year. Graduated residents now hold positions at Rwandan hospitals including: King Faisal Hospital, Rwanda Military Hospital, and Butaro. Additionally, 3 graduates stayed at CHUK, furthering the development of the hospital. At CHUK, these 3 hold positions in the areas of: 1) research, 2) clinical duties, and 3) academics. It has also been observed that emergency medicine training has been associated with significant reductions in mortality in patients presenting to CHUK.

CHUK is well on its way to becoming a sustainable emergency medicine residency. The program currently has 19 residents in training and has graduated 6 students; these 6 are the first emergency medicine physicians in the country. Of these 6 graduated residents, 3 are continuing work at CHUK—which is promising for the future of the program. Furthermore, the decrease in mortality demonstrates the importance of emergency medicine training in a resource-limited setting such as Rwanda.

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Parental Perceptions Regarding Alternative Emergency Medical Services Dispositions

Background: The proportion of patients arriving to emergency departments (ED) by Emergency Medical Services (EMS) has been steadily increasing. Many of these patients may not need emergency services at all, and could be seen more efficiently in a primary care or urgent care office. There is very little literature regarding parental preferences for alternative (non-ED) dispositions for pediatric patients after 911 has been called. In particular there is a paucity of data regarding the views of racial and ethnic minority parents, and those who rely on public insurance. There is no published literature regarding parental attitudes towards a 911-nurse triage line.

Objective: To assess parental attitudes towards alternative EMS dispositions (including a nurse triage line), and to evaluate whether these attitudes vary by patient insurance status and race/ethnicity.

Design/Methods: Single center cross-sectional study using a convenience sample of parents/guardians in an urban tertiary care pediatric ED waiting room. Participants completed a 15 item-questionnaire (5 point Likert scale questions) regarding attitudes towards data sharing, shared decision making, and alternative EMS destinations. Responses by insurance status and race/ethnicity were analyzed using chi square analyses.

Results: Of 203 completed surveys, the majority of respondents were publicly insured (59%) and non-Hispanic (NH) black (74%). Most respondents (94%) want to be involved in decisions regarding EMS destination for their children and 89% support data sharing between EMS, hospitals, and primary care offices. Smaller majorities support EMS being able to transport children to clinic settings (69%) or treat and leave children at home (54%). 61% of respondents agree with following the advice of a nurse triage line. Patients with public insurance show lower levels of support for some aspects of an alternative EMS disposition system. We did not identify significant differences by racial group. On completion of enrollment of additional Hispanic patients we plan to conduct a principal components analysis to identify clusters of questions with similar responses, and then conduct logistic regression analyses on selected questions to identify factors associated with acceptance of alternative EMS systems.

Conclusions: A substantial majority of parents in our study were in favor of many aspects of alternative EMS disposition systems. Support for alternative EMS disposition systems may vary by insurance status.

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SCHOOL OF MEDICINE AND HEALTH SCIENCES

The Relationship between Industry Payments on Research Productivity and Career Success of Academic Radiation Oncologists

The Physician Payments Sunshine Act in 2010 required industry funding of physicians to be publically reported, now enabling assessment of the effects of industry funding on physician productivity in the field of radiation oncology. The goal of this paper is to further investigate whether there is a direct correlation between industry payments and physician productivity and success, as defined by total publications, h-index, or academic rank, for academic radiation oncologists.

This study examined the relationship between industry payments, research productivity, and academic title in academic radiation oncologists. Industry payments data was obtained from the Center for Medicare and Medicaid Services Open Payment database, and bibliometric data was obtained from Scopus. Statistical analyses were performed using on Stata/IC 15.1. Significance was defined as $p < 0.05$.

The annual mean general payments to Professors, Associate Professors, Assistant Professors, and Instructors were \$3626, \$1293, \$622, and \$217 respectively. The annual mean research payments were \$15813, \$7022, \$1616, and \$293 respectively. Our analysis revealed a significant direct correlation between industry funding and H-index for associate professors, assistant professors, and clinicians/other, but this relationship was not significant for professors and instructors. While both general and research payments was significantly associated with H-index when examined separately, this association was insignificant for general payments when controlling for academic rank, region, degrees, research payments, and gender. A multivariate model showed that an increase in \$10,000 annually in research payments was associated with a 1.19-times increase in odds to be in the top quartile of publications and a 1.10-times increase in odds to be in the top quartile of h-index.

Increased research productivity is significantly associated with increased academic rank and industry payments. However, when controlling for confounding variables, research payments, and not general payments, are a significant driver of this relationship.

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Development and Evaluation of a Self-Administered Ambulatory Online Assessment Tool for Assessing Cognitive Functioning in Older Adults

As the US population ages, the prevalence of Alzheimer's disease is expected to rise. By 2050, it is expected there will be 14 million people living with Alzheimer's disease in the US. So simple, rapid and accurate tools will be needed to identify individuals with cognitive impairment that have Alzheimer's disease or mild cognitive impairment that can progress to Alzheimer's disease. This study aimed to create and evaluate a self-administered online web based cognitive screening tool to detect cognitive impairment in older adults. Prior to deployment with an older adult sample, work was done to develop and refine the web-based visual memory subtest component of the cognitive screening tool, using React. React is a Javascript library that can be used to develop web based interactive user interface elements. Once the survey is deployed to older adults for testing, the primary outcome measured will be the scores on the online cognitive test. Performance will be composed of the accuracy on the test subcomponents and the time taken to complete the subcomponents. Statistical analysis will be done using methods to analyze differences in performance on the online test components between clinical groups (ie, normative aging versus mild cognitive impairment). The proposed methods are t-tests and analysis of variance tests. Pearson correlations will be used to explore associations between the online cognitive test variables and relevant clinical and demographic variables. The analyses will be done using SPSS. We are currently in the process of pilot testing the tool with staff to ensure accuracy of data obtained. Subsequently, we will distribute the survey and collect data from a sample of currently enrolled older adult participants in studies in the Oregon Center for Aging & Technology. The data analysis will reveal the usability and accuracy of the tool in discriminating between normal aging and mild cognitive impairment.

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A Systematic Review of Complications and Recurrence following Treatment of Dupuytren's Contracture with Injectable Collagenase Clostridium Histolyticum

To investigate complications and recurrence of Dupuytren's contracture following injectable collagenase clostridium histolyticum (CCH) treatment through a systematic literature review and meta-analysis.

A systematic literature review identified 14 studies that met inclusion criteria, 7 of which investigated complications and 7 of which investigated recurrence following CCH treatment. Studies included were identified from an existing systematic review. Studies excluded did not report complications or recurrences, had recurrence follow up periods of <12 months, or were retracted from publication. Dupuytren's contracture was defined as a fixed-flexion contracture of the metacarpophalangeal joint (MCPJ) or proximal interphalangeal joint (PIPJ) of $\geq 20^\circ$ in one or more non-thumb fingers. Clinical success was defined as a reduction in contracture $\leq 5^\circ$ immediately following CCH treatment.

Complications were reviewed in 1620 patients and 2591 joints (MCPJ=1201, PIPJ=1390) with a mean follow up of 6.9 months (SD=5.9). Initial MCPJ contractures were reduced from 47.4° (SD=4.4) to 7.5° (SD=0.5) within one month of CCH. 66.2% of MCPJs reached clinical success. Initial PIPJ contractures were reduced from 49.2° (SD=6.9) to 21.6° (SD=2.5) within one month of CCH. 28.4% of PIPJs reached clinical success. 55.2% of patients reported at least one treatment related adverse event: major events included tendon and pulley rupture (n=9; 0.56%), tendonitis (n=1, 0.06%), and anaphylaxis (n=1, 0.06%) while minor events affecting over 25% of patients included peripheral edema (90.3%), contusion (64.6%), extremity pain (30.6%), injection site pain (26.4%), and injection site hemorrhage (25.2%).

Recurrences were reviewed 840 patients and 877 joints (MCPJ=609, PIPJ=268) with follow ups ranging 12 to 96 months. Initial MCPJ contractures were reduced from 48.3° (SD=7.0) to 22.8° (SD=34.8) within one month of CCH. 97.9% of MCPJs reached clinical success. Recurrences occurred in 197 (32.3%) of MCPJs. Initial PIPJ contractures were reduced from 43.9° (SD=8.7) to 15.7° (SD=6.9) within one month of CCH. 90.3% of PIPJs reached clinical success. Recurrences occurred in 126 (47.0%) of PIPJs. Interventions were performed in 15% of patients with recurrences.

Trends in CCH outcomes, complications, and recurrences can be identified by systematic review. Meta-analyses will be performed to further investigate CCH therapy complications and recurrences.

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Laparoscopic Hand-Assisted Resection of a Rare Intra-Adrenal Schwannoma

Schwannomas are well-differentiated mesenchymal tumors of the of Schwann cells that are usually benign. A lack of specific radiographic characteristics makes definitive preoperative diagnosis difficult. Therefore, despite the benign nature of these tumors, the gold-standard for symptomatic tumors is surgical resection. Here, we report the surgical management of a 37-year-old male whose pre-surgical evaluation identified a tumor in the right retroperitoneal space between the right adrenal gland and intraperitoneal porta hepatis. As a result of both the preliminary pathologic diagnosis and the close proximity of the tumor to the porta hepatis, laparoscopic hand-assisted surgical resection of the retroperitoneal tumor was performed. Postoperative pathologic diagnosis demonstrated a benign intra-adrenal schwannoma. This case highlights the importance of a broad differential diagnosis for any large retroperitoneal tumor and the requirement for post-operative pathologic diagnosis to characterize the definitive tumor location and malignant potential of the tumor.

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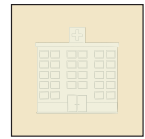
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SCHOOL OF MEDICINE AND HEALTH SCIENCES

Pediatric Prescription Fill Rate for Bacterial Infections after Discharge from the Pediatric Emergency Department

Antibiotics are frequently prescribed in the pediatric emergency department (PED), but fill rates after ED discharge are unknown. Medication nonadherence is associated with increased emergency department visits and adverse health outcomes.

To determine antibiotic prescription fill rate overall and by disease category upon discharge from an urban PED.

We performed a retrospective medical record review of PED visits by children aged 0-21 years from Jan 1, 2018 through March 31, 2018, during which oral antibiotics were prescribed to pharmacies participating with Surescripts e-prescribe network as our electronic health record records when these prescriptions are filled. Common diagnoses were grouped using ICD-10 codes for diseases categories of otic, respiratory, urinary, soft tissue/skin infections, and other. Multivariable logistic regression models were used to determine the association of prescription fill rate with diagnosis category after adjustment for patient-level (age, gender, insurance status, interpreter use) and visit-level (diagnosis, triage level) characteristics.

There were 2886 patients with an oral antibiotic prescription. The mean age of patients was 5.6 (+/-4.7) years, and the majority was male (53.3%), publicly insured (70.4%) and Non-Hispanic black race (62.7%). The overall antibiotic prescription fill rate was 66.3% (95% CI: 64.5, 68.0). The fill rate by disease category was: 69.1% for sinusitis, 69.1% for respiratory, 68.1% for pharyngitis, 66.7% for lymphadenitis, 66.5% for soft tissue /skin infections, 65.9% for otic infections, 60.0% for UTI, 64.5% for other and 71.2% if more than one of the above were diagnosed. After adjusting for demographic factors, no differences were identified in prescription filling by diagnosis.

Nearly 40% of patients with bacterial infections discharged from this pediatric ED do not fill their prescriptions. This is the largest study to date of outpatient pediatric ED antibiotic prescription fill rates. The data indicates a timely need to better understand barriers to treatment adherence.

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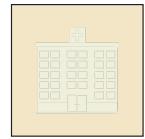
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Reporting Persons With Mental Health Issues: Prospective Study on Gun Control Innovation

School shootings in Parkland, FL and Santa Fe, TX revived debate about early identification of people who exhibit behavior or symptomology associated with violent behavior. People flagged as at-risk may be reported to third-parties such as psychiatrists and law enforcement and may temporarily or permanently become ineligible to possess firearms. Different stakeholders including teachers, therapists, counselors, family physicians, and emergency physicians could be part of an assessment system to flag individuals. Emergency physicians are uniquely likely to see patients who are experiencing some kind of crisis. This study will assist in determining if emergency physicians are willing to take a role in gun control legislated intervention.

An online survey collected information from emergency physicians about: 1) basic demographic characteristics 2) physician knowledge of current firearm eligibility laws 3) physician attitudes about reporting patients to third parties 4) physician attitudes about firearm ownership, permitting and related issues 5) physician political leaning and ideology. The survey will sample emergency departments from a selected urban and rural mix nationwide. Emergency physicians and directors will receive both flyers and emails, directing them to a Qualtrics Web-based survey which includes a consent process. Institutional review board approval for online consent was approved for this study.

A power analysis ($\alpha=.05$; $\beta=.80$) suggested that recruiting between 242 and 346 participants equally divided between rural and urban areas would be very good at detecting minimally acceptable differences.

480 EP responded from 42 states with a mean age of 40 yr. (11 SD) with 50% Attendings in practice <7 years; 80 White 61% Male. Party Affiliations: Democrats 50%, Republicans 30% Independent 20%. Political Ideology: Liberals Outnumber Conservatives 2 To 1. The EP knowledge of gun laws was poor with only 42% obtaining a 70% using the NRA, A summary of federal restrictions on the gun purchasing. Over 80% agree across these 3 measures: limit handgun purchase, background checks and handgun restriction on mentally ill patients.

Emergency Physicians appear willing to report patients with psychiatric illness and ready to play a role in gun control but are not as informed as one would have hoped. Aside from political leanings and pre-survey expectations, this survey found that physicians can be useful and reliable to report patients with mental health to authorities to be sure they do not possess or make future plans for keeping guns out of the hands of mentally unstable individuals.

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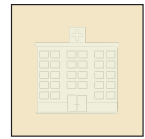
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PREVENTION AND COMMUNITY HEALTH



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Relationship between Parental Psychosocial Stress and Asthma Outcomes among Urban African-American Children

Background: Increased psychosocial stress among parents and children has been associated with worse asthma outcomes, especially in urban children. However, few studies have evaluated the impact of longitudinal changes in psychosocial stress on pediatric asthma outcomes.

Objective: To compare asthma outcomes in children with respect to their parents' reported stress at baseline and changes in their parents' stress over a 12 month intervention period.

Design/Methods: A secondary analysis was performed on data from a recently completed randomized trial of an intervention to mitigate psychosocial stress in African American parents of children with persistent asthma. Children were 4-11 years old, with persistent asthma, and on Medicaid. Asthma outcomes in the children were compared based on (a) baseline levels of self-reported Perceived Stress Scale (PSS) scores in the parents and (b) the change of parental PSS scores from baseline to 12 month follow-up. The primary outcome was change in the child's symptom-free-days (SFDs) over the course of the trial with SFDs being determined from 14-day recall.

Results: A total of 217 African American parent-child dyads were available for analysis. With respect to parental baseline stress, children of parents in the highest tertile of baseline stress had the greatest improvements in SFDs (2.3 ± 5.1) during the 12 month intervention as compared to children of parents in the middle (2.0 ± 4.6) and lowest (1.4 ± 4.3) tertiles ($p=0.4$ for comparison of highest and lowest tertiles). With respect to change in parental stress during the 12 month trial, children of parents who reported a reduction in stress had an improvement of 2.7 ± 4.9 SFDs during the trial as compared to an improvement of only 1.5 ± 4.8 SFDs in children of parents who reported an increase in stress during the trial ($p=0.06$).

Conclusions: Over the course of this intervention trial, there were consistent trends towards better asthma outcomes in children who had caregivers that either (a) had higher baseline stress scores or (b) had better improvements in stress scores at the completion of the trial. This may indicate that stress reduction interventions should be targeted for families with higher levels of stress.

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Perioperative Complications Associated with Diabetes Mellitus in Patients Undergoing Tonsillectomies with Adenoidectomies: Insulin-Dependence Makes a Difference

Over 1 million Adenotonsillectomies (AT) are performed each year in the United States, to treat sleep disordered breathing, obstructive sleep apnea, and chronic adenotonsillitis. Although T&A is a common and safely performed surgery, it is not without significant risk of complications (bleeding, acute pain, dehydration, and pulmonary edema). These adverse events tend to be more prevalent in adults with comorbidities in comparison to adults without them. Since patients with diabetes mellitus (DM) comprise a significant population that undergoes AT, determining the correlation between Diabetes Mellitus and post-operative complications could enable physicians to take preemptive cautionary measures, counsel patients on outcomes and expectations, or determine whether the patient is a better candidate for a non-invasive intervention, in order to decrease complications and health care costs.

The ACS-NSQIP database was queried for patients who had undergone tonsillectomies with adenoidectomies simultaneously from 2005 to 2016. These patients were then stratified into three cohorts based on their diabetes mellitus status for comparison in patient characteristics and to analyze the impact of DM on the risk for surgical complications: non-diabetics (Non-DM), non-insulin dependent DM, and insulin dependent DM. Multivariate and univariate analysis was performed to determine the risk of post-operative complications for DM patients.

On multivariate analyses, diabetic patients, as a whole, were at an increased risk for three complications. Diabetes mellitus was a significant independent risk factor for systemic sepsis, extended length of stay of at least five days, and unplanned readmission. However, IDDM patients had a far greater independent risk of complications after the procedure. Irrespective of the patient's demographics or other preoperative variables, it was found that IDDM independently increases the possibility of developing organ/space SSI, pneumonia, unplanned Intubation, deep venous thromboembolism (DVT), systemic sepsis, greater length of hospital stay, and readmission.

The increased risk of post-AT surgical complications in IDDM patients stems from poor glucose control, and post-operative complications can arise from both hyperglycemia and hypoglycemia. Surgical procedures, such as AT, can induce hyperglycemia, which has been a known risk factor for postoperative sepsis, endothelial dysfunction, cerebral ischemia, and impaired wound healing. This study urges preoperative counseling and glycemic index management for IDDM patients. Further research should investigate optimization of care before the surgical procedure, difference in management between IDDM and NIDDM patients to determine the specific cause of increased complication rate in IDDM patients, and the benefits of additional inpatient care.

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Medical Student Patient Navigators: Connecting Hospitalized Homeless Patients to Outpatient Care

Washington, D.C., has extensive resources to serve the homeless population; however, connecting these patients with resources upon discharge from GW hospital remains a challenge. After key informant interviews with local physicians who care for the homeless community, we decided to explore the use of medical students to bridge the gap between patient discharge and follow-up with local resources.

This project aimed to identify community-wide resources to connect patients with comprehensive follow-up care, train internal medicine residents to identify and use specific ICD-10 codes for homelessness, measure the effectiveness of homeless patient identification upon admission, assess the feasibility of using medical students as resource navigators, and determine the use of resources by patients 30 days post discharge.

A literature review and resource mapping exercise were completed to identify the most accurate screening questions for homelessness in a busy clinical setting and to develop a community-wide resource guide for patients. Academic presentation was completed for GW internal medicine residents to introduce the topic, describe protocol, and answer any questions. Data collection comprised of daily patient interviews and retrospective chart analysis, including review of admission dates, clinician coding practices and screening of housing status, discharge dates, and resource guide usage.

Charts analyzed for a total of 8 weeks showed an increase in the proper documentation of homelessness but there is still room for improvement as housing status was often documented in other areas of the chart. It became apparent that identification would be one of the biggest barriers to seeing these patients. This project also provided insight into the barriers a medical student may face when trying to provide resources, including chart review time, presence of housing status documentation, knowledge of DC resources, etc. Furthermore, while many patients could be identified on chart review, it was difficult to speak with each patient to have the opportunity to provide resources.

While a medical student could be used as a resource navigator, there appear to be more efficient methods. GW Hospital needs to continue improving housing status documentation so resources can be automatically provided upon discharge. Also, while interviewing patients, it was apparent that simply handing out the resource guide was not sufficient. Discussing options and learning about each patient was the most valuable. There is significant potential for integrating medical students into the discharge process and I look forward to continuing work towards that goal.

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Risk Factors for Adverse Outcomes and Prolonged Length of Stay in Obstetric Patients with Congenital Heart Disease

Advancements in reparative surgery have remarkably increased the proportion of adults living with repaired congenital heart disease (CHD), with current data demonstrating that 90% of infants born with CHD reach adulthood. After proficient repairs, women with CHD are capable of child bearing, however they are at increased risk for peri- and post-partum complications attributable to the variety of hormonal and hemodynamic changes over pregnancy. Previous studies have suggested that while mortality remains overall low, parous patients with CHD lesions are at increased risk of morbidity including pre-term delivery, caesarian sections, heart failure and arrhythmia. This project sought to evaluate risk factors associated with increased length of hospital stay and other adverse outcomes in parous CHD patients at a single institution, Winnie Palmer Hospital (WPH) for Women and Babies. The project is a retrospective chart review, using paper and electronic records. The study population includes parous patients with CHD who consulted with the anesthesiology department and were admitted to WPH for delivery or management between 1/2000 and 1/2017. CHD was defined as both cyanotic and acyanotic lesions, hypertrophic cardiomyopathy, congenital Long QT syndrome, pulmonary hypertension and genetic diagnoses with chromosomal abnormalities. At this stage of the project, 101 patients were identified for inclusion, with a cumulative 149 pregnancies. Within the included population, CHD diagnoses comprised structural anomalies, aortic valve dysfunction, genetic syndromes and congenital arrhythmias. For eligible patients, data on patient and lesion characteristics, along with cardiac, obstetric and significant neonatal complications was collected. Analysis of data is in progress to create a stratification of CHD lesions through evaluation of antepartum echocardiograms, allowing for a more accurate assessment of lesion specific risk. Univariate and multivariate analysis will be completed to evaluate variables associated with increased peri-partum length of stay and other adverse outcomes, comparing them to a control group of parous patients without CHD. The purpose of this research is to contribute to developing knowledge on recommendations for management of these patients, specifically in relation to obstetric and cardiac care.

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Predicting Venous Thromboembolism in Obese Pregnant Women in a National Study

Venous thromboembolism (VTE) in pregnancy and postpartum is a leading cause of maternal morbidity and mortality in developed countries, where obesity is a known risk for this complication. Current guidelines vary in which patients qualify for VTE prophylaxis, precluding a uniform approach for management. The purpose of this study was to derive a risk prediction model for VTE in obese pregnant women. We performed a retrospective cohort analysis using the Consortium on Safe Labor (CSL) database. The CSL includes detailed information from the electronic medical record for >200,000 deliveries from 19 hospitals across the United States from 2002 through 2008. Women ages 16-45 who were pregnant with singletons and had an obese body mass index (BMI>30kg/m²) were included in our study population. Maternal characteristics and preexisting conditions as well as pregnancy-related conditions and complications were analyzed to identify differences between those who had a VTE and those who did not. Multivariable logistic regression was used in order to identify predictors of VTE.

Of the 83,500 women who met inclusion criteria, on average women were 27.8 ± 6.0 years old, 38.6 ± 2.21 weeks gestation, with BMI of 35.8 ± 5.45 kg/m², and cesarean delivery (CD) incidence of 35.2%. The racial makeup of our cohort was 45.1% Caucasian, 27.2% African American and 20.2% Hispanic women. 109 women (0.13%) experienced a VTE event. Independent predictors of VTE in our final multivariable predictive model included: mode of delivery, BMI, pregestational diabetes, chronic heart disease, preeclampsia, blood transfusion (intrapartum or postpartum), prenatal history of thromboembolic disorder, and postpartum maternal length of stay. A receiver operating characteristic curve was developed to assess the model; area under the curve was 0.826. We developed a strong predictive model using a large, retrospective database to distinguish risk of VTE in obese pregnant women, which may provide the foundation for future protocol development of obstetrical thromboprophylaxis in obese women.

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Exploring Traditional Birthing Methods in Ecuador as a Model for U.S. Implementation

Ecuador, a country rooted in traditional healing practices, serves as a premier example of where biomedicine and traditional knowledge often intersect, and sometimes conflict, when addressing women's prenatal care. Many women seek *parteras*, or midwives, for their prenatal care while others choose to see an Obstetrician. Acknowledging the need for a more combined approach to women's health, Ecuador's Health Ministry implemented a program called "Attention for Culturally Appropriate Birth" that helps doctors learn more culturally appropriate birthing methods and allows *parteras* to have a more active role in hospital births. My objective was to explore how traditional and integrative methods are used in combination with western practices to address women's health needs in Ecuador and to better understand how the U.S. might be able to implement these practices. Methods used to explore these research questions included key informant interviews, site visits, literature review, and shadowing Ob-Gyn physicians and traditional Ecuadorian midwives (*parteras*) over 4 weeks. Student gained an in-depth understanding of how Ecuador has worked to integrate traditional birthing practices. Vertical birthing is a common method used in Ecuadorian indigenous communities allowing women to remain upright during childbirth so that the baby's head passes with more ease. This method is associated with fewer epistomies, C-sections, and fetal heart abnormalities, and less pain during labor. In our modern era, current prenatal health services often leave out traditional belief systems, which can inadvertently threaten a woman's access to prenatal care and this can lead to less safe delivery outcomes. Ecuador's initiatives can serve as a helpful model for the U.S. The use of midwives for prenatal care and birth is increasing rapidly in the U.S. and it is extremely important that we also learn how best to integrate traditional and biomedical aspects of health care.

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SCHOOL OF MEDICINE AND HEALTH SCIENCES

Characteristics and Outcomes of Mothers Receiving Tranexamic Acid during Delivery

In October 2017, the American College of Obstetricians and Gynecologists (ACOG) released a practice bulletin endorsing the use of tranexamic acid (TXA) to treat postpartum hemorrhage (PPH). The purpose of this study was to describe characteristics and outcomes of women receiving TXA in the peripartum period. Patients were included as a multicenter retrospective cohort study between January 2015 and June 2018. All delivery types were included. Patients under the age of 18 or above the age of 50 were excluded. Patients were grouped based on whether or not TXA was administered and their demographics and outcomes were compared. Data trends in terms of time periods and geography was also analyzed. Of the 103,617 patients included, TXA was used in 133 patients at the time of delivery. Among our cohort those who received TXA compared to those who did not were more likely to have history of postpartum hemorrhage (26% vs 2%, $p < 0.0001$), placenta previa (4.5% vs 0.3%, $p < 0.0001$), anemia with hematocrit less than 32% (30% vs 16%, $p < 0.0001$) and magnesium for neuroprotection (23% vs 5%, $p < 0.0001$). There was no significant difference in rate of deep venous thrombosis or pulmonary embolism. Perinatal outcomes are also presented. TXA use was also evaluated by date and geographic sector. TXA was used at highest rates in the last quarter of 2018, with the East sector reporting higher rates compared to all other regions. Women who received TXA at delivery were more likely to have cesarean delivery, $EBL > 1000$ cc, blood transfusion, and ICU admission, among other complications or comorbidities. Risk of venous thromboembolism was not increased with peripartum TXA use. More numbers are needed to assess if pre- and post-publication of the ACOG guidelines resulted in lower rates of hemorrhage complications.

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