CENTER FOR
PUBLIC HEALTH PRACTICE

Public Health Practice Experience Poster Presentation Session

Abstracts

April 27, 2010

Title of the Project: LIFE STYLE FACTORS AND GLOBAL HYPOMETHYLATION IN PERIPHERAL LEUKOCYTE DNA

Student Name: Amy Abraham
Academic Advisor and Department: Dr. Lori Fischbach, Epidemiology
Site Supervisor and Location: Dr. Fang Fang Zhang, Epidemiology, UNTHSC

Background: This study examined whether lifestyle risk factors and obesity are associated with different levels of genomic DNA methylation.

Global hypomethylation is associated with genomic instability and may mediate the association between environmental and lifestyle factors and cancer risk. We aimed to examine the association between lifestyle factors and levels of genomic DNA methylation in the peripheral blood leukocytes of 161 participants in the North Texas Healthy Heart Study aged 45-75.

Methods: We used in-person interviews for demographics and lifestyle factors, a self-administrated Block food frequency questionnaire for dietary data, bioelectrical impedance analysis (BIA) and CT-scan for body composition including fat mass % and areas of visceral and truncal subcutaneous adipose tissues at the L4L5 level. We measured genomic DNA methylation using bisulfite conversion of DNA and real time PCR (MethyLight) for LINE1.

Results: The median level of global methylation was 73.7% in this cancer-free population. Male gender was negatively associated with global hypomethylation (i.e. < median) (OR=0.2, 95%CI: 0.1-0.6). Compared to non-Hispanic whites (n=58), non-Hispanic blacks (n=33) had a significantly higher level of global hypomethylation (OR=4.7, 95%CI: 1.4-16.3). Although Hispanics (n=68) also had a higher level of global hypomethylation, the association did not reach statistical significance (OR=1.6, 95%CI: 0.4-5.9). The percentage of fat mass (FM) was negatively associated with DNA methylation in the univariate model (36.3% among subjects with methylation < median vs. 33.3% among subjects with methylation = median, p=0.02); however, none of the body composition measures were associated with DNA methylation in the multivariate model after adjusting for age, gender and ethnicity, nor were cigarette smoking, alcohol drinking, dietary folate intake and perceived stress.

Conclusions: Although there was no association of lifestyle factors with genomic methylation in the peripheral leukocyte DNA, the strong association with gender and race/ethnicity indicates that interactions between these variables and lifestyle factors need to be explored in a larger sample before firm conclusions can be reached.

Title of Project: RACIAL / ETHNIC DIFFERENCES IN STRESS AGE AMONG WOMEN

Student Name: Stephen Daniel Baird
Academic Advisor and Department: Dr. Martha Felini, Epidemiology
Site Supervisor Name and Location: Dr. Kimberley Fulda, Primary Care Research Institute, University of North Texas Health Science Center

Introduction: The aim of this pilot study is to explore racial and ethnic disease disparities correlating with cumulative stress. The literature suggests that African-American and Hispanic women are more likely to be obese, with African-American women also having higher rates of life-threatening medical conditions as compared to their racial counterparts. The cause of these disparities is still not fully understood, yet the current theory of "weathering" is gaining momentum. The weathering theory refers to premature aging and increased risk for adverse health conditions due to cumulative stress or major distressing events. It is hypothesized that this increased "stress age" across racial / ethnic groups may contribute to the current morbidity and mortality disparity.

Methods: Stress age was measured according to the literature standard of utilizing ratios of cortisol to dehydroepiandrosterone (DHEA) and cortisol to dehydroepiandrosterone sulfate (DHEA-S). Cortisol, DHEA, and DHEA-S levels are measured via blood and saliva samples. These physiological measures are compared to values of self-reported chronic stress. These self-reported stress and discrimination values were measured utilizing several validated questionnaires.

Results: This study is still early in the recruitment period, with active recruitment having started in earnest during the third week of March. Forty-one women have been screened for the study, with 32 women having failed to qualify for the study according to the exclusion criteria. Of the nine women that qualified for the study, 4 have already been processed and completed the study. The remaining five women have tentatively scheduled appointments for participation. As this is a pilot study, recruitment will continue until 105 women are recruited.

Conclusion: The study has been a very positive experience with a main emphasis on active recruitment. Recruitment is truly the ground and grunt work for any study and with many moments of frustration. However, valuable lessons regarding ethics and reproducibility are constantly reinforced.

Title of Project: EPIDEMIOLOGY OF THYROID CANCER IN CHILDREN AND ADOLESCENTS IN TEXAS, 1995 – 2006

Student Name: Satish Jagan Mohan Bankuru
Academic Advisor and Department: Lori Fischbach, PhD, MPH, Epidemiology
Site Supervisor and Location: W. Paul Bowman, MD, Cook Children's Medical Center, Fort Worth

Introduction: Thyroid cancer is one of the common cancers in children and adolescents. Though the proportion of pediatric thyroid cancer is low compared to older ages, the proportion presenting with a malignant thyroid cancer is much higher in pediatric population. The current study intends to describe the epidemiology of pediatric thyroid cancer in the ages 0 – 19 years utilizing the secondary data from the Texas Cancer Registry (TCR) through the years 1995 – 2006 and describe the time trends of Pediatric thyroid cancer.

Methods: Thyroid cancer cases are identified by the topography C73.9 according to the International Classification of Childhood Cancer. SAS Version 9.2 was utilized to obtain frequencies of thyroid cancer and to calculate the crude and age adjusted incidence rates. Population data files publicly available from the Texas Department of State Health Services (DSHS) have been utilized for the calculation of the incidences.

Results: A total of 421 Pediatric thyroid cancer cases aged 0-19 years were identified from the TCR. Female patients (n=341; 81 %) outnumbered male patients (n=80; 19 %) by more than four times. The mean age of patients in the study is 15.5 years. Patient population mainly consisted of whites (52.73 %) followed by Hispanic (38.95 %) and Blacks (3.33 %). Papillary carcinoma (62.47 %) and follicular variant of papillary carcinoma (18.29 %) formed the major histological types. The annual overall age adjusted incidence of pediatric thyroid cancer per 100,000 in 2006 is 0.53. Age adjusted incidence rate in the same year for females is 0.76 and that for the males is 0.32.

Conclusion: An average annual increase of 1.68 percent in the incidence rate of pediatric thyroid cancer is noticed from 1995 to 2006. The results obtained in the study are in concordance with existing literature on thyroid cancer and pediatric thyroid cancer.

Cancer incidence data have been provided by the Texas Cancer Registry, Cancer Epidemiology and Surveillance Branch, Texas Department of State Health Services, 1100 W. 49th Street, Austin, Texas, 78756, http://www.dshs.state.tx.us/tcr/default.shtm , or (512) 458-7523.

Title of Project: PREDICTORS OF SEIZURE FREEDOM AFTER RESECTION OF THE EPILEPTOGENIC ZONE IN CHILDREN

Student Name: Ankit Bavariya
Academic Advisor and Department: Subhash Aryal, PhD, Biostatistics
Site Supervisor and Location: Lindsey Brown, MPH, Cook Children's Medical Center

Introduction: Complete resection of the epileptogenic zone is the most important predictor of better outcome after resective surgery for intractable epilepsy, while incomplete resection is not. This study focused on the contribution of pre and perioperative variables including MRI and EEG data as predictors of seizure-free outcome after resection.

Methods: Patients <18 years of age with resection for epilepsy performed at the Miami Children's Hospital with 2 years of follow-up were included. Data primarily analyzed for patients with complete and incomplete resections on seizure outcome at the end of 2 years. Data further analyzed in incomplete resection patients only for the effect of complete EEG resection on seizure outcome in patients with incompletely-resected MRI lesions and vice versa.

Results: 113 patients (65 incomplete and 48 complete) with resection met inclusion criteria. Patients with complete resection by both MRI and EEG (χ^2 =17.59, p=0.0005) were more likely to become SF when compared to patients with incomplete resection. Over 50% of patients incomplete by either MRI or EEG alone became seizure free versus only 24% of patients incomplete by both. Amongst patients with incomplete resection, complete EEG resection predicted SF (p=0.03) whereas completeness of MRI resection did not predict SF if EEG resection was incomplete (p=0.11).

Conclusions: Complete resection of the MRI and EEG defined epileptogenic zone (EZ) is the most important predictor of seizure freedom, though patients incomplete by EEG or MRI alone have better outcome compared to patients incomplete by both modalities. When complete resection is not possible, SF outcome is most influenced by completeness of EEG excision, a finding of importance in presurgical counseling.

Title of Project: PROMOTING HEALTH INFORMATION TECHNOLOGY USAGE IN NORTH TEXAS

Student Name: BreGenna Buckhanan
Academic Advisor and Department: Hsueh-Fen Chen, PhD, Health Management and Policy
Site Supervisor and Location: Pamela Doughty, PhD, Dallas Fort Worth Hospital Council (DFWHC) Education and Research Foundation

Introduction: The Dallas Fort Worth Hospital Council Education & Research Foundation is a group that is committed to fostering safe, high quality healthcare in order to improve community health and it provides support for the goals of the Hospital Council through education and research collaboration. It is one of three auxiliary groups that make up the DFW Hospital Council, which includes the DFW Hospital Council, a nonprofit trade association serving hospitals in the Dallas-Fort Worth area and GroupOne Services, a for profit group that offers hospitals and health care providers services for screening potential employees prior to hire among other services. The Foundation itself is composed of the Information and Quality Services Center, the Workforce Center, Community Health/Public Health and the Research Collaborative. Some of the main functions of the Foundation include cleansing and submitting claims to the state for reimbursement for its 75 member hospitals throughout the DFW region, developing a website for needs assessment data to allow non-profit hospitals the data needed to improve community benefit and reporting results of data from the ISQC, researched for individual hospitals.

With the passing of the HITECH Act with the 2009 stimulus package (American Recovery and Reinvestment Act), health information technology has become an issue of great concern throughout the Dallas Fort Worth area. As a result, the foundation began planning strategies for responding to the Act. This study focuses on acquiring grant funding to help healthcare providers throughout the DFW community comply with new health information technology mandates.

Methods: The foundation applied for both the North Texas Regional Extension Center (NTREC) Grant and the Beacon Grant. Both programs are designed to help stimulate HIT usage throughout the region by providing funding for interventions that will make health information technology more accessible.

Results: The NTREC Grant funds were awarded to the Foundation on April 6, 2010. The grant proposal was successfully completed and submitted for the Beacon grant; however, the foundation has not yet received any funding from this venture. Only 4 of 72 applicants were chosen as recipients of this funding.

Conclusion: The Foundation has achieved great success initiating plans to combat the lack of health information technology in North Texas. Currently, the Foundation is working on creating an operational plan which specifically outlines how the NTREC funds will be allocated. The due date for submission of this plan is May 15. Once this is submitted, the specific components of this program may be implemented under the leadership of the program's executive director, Mr. Mike Alberson.

Title of Project: FAITH COMMUNITY NURSING, USING CHURCHES AS A CONDUIT TO PUBLIC HEALTH EDUCATION

Student Name: Rebecca Kelm Good
Academic Advisor and Department: Christine Moranetz PhD, SPH Office of the Dean
Site Supervisor Name and Location: Paulette Golden MS, RN, Texas Health Harris Methodist Fort Worth

Introduction: Faith Community Nursing (FCN) is the specialized nursing practice that focuses on the care of the spirit as part of the process of promoting holistic health and preventing or minimizing illness in a faith community. Texas Health Resources (THR) partners with Faith Community Nurses to provide health education and assistance within the faith community. The Faith Community Nurse meets with a faith community nurse manager to determine beneficial programs and to identify program implementation strategies for their individual faith community. These nurses meet bi-monthly to discuss successful programs, to hear guest speakers, and to become familiar with services THR offers.

Methods: The THR Faith Community Nursing Manager desired an evidence-based program that would provide tangible qualitative and quantitative results. A complete literature review was completed to identify theories that could best be utilized through the classroom style education programs typically being offered by the Faith Community Nurses. The Health Belief Model was selected as the most useful evidence-based theory for this program. Two health education programs were created and presented at a monthly meeting of the FCN managers: 1) Cholesterol-Reduction and 2) Seasonal Flu Influenza. THE FCN managers participated in discussion sessions that integrated the six steps of the Health Belief Model into the health education programs. Sessions were also conducted for practicing Faith Community Nurses during a bi-monthly meeting.

Results: As a result of participation in the session on the Health Belief Model, the Faith Community Nurses indicated they could utilize an evidence-based approach to planning and implementing future education programs.

Conclusions: The use of the Health Belief Model proved to be an effective planning tool in designing health education programs for faith communities.

Title of Project: COMPLEMENTARY AND ALTERNATIVE MEDICINE (CAM) USE FOR PERINATAL DEPRESSION

Student Name: Thomas Horn
Academic Advisor and Department: Kris Lykens, Ph.D., Health Management and Policy
Site Supervisor Name and Location: des Anges Cruser, PhD, MPA, UNTHSC

Background: Between 15% and 20% of all women experience some form of pregnancy related depression or anxiety. Perinatal depression is the presence of symptoms of depression during pregnancy or postpartum. Balancing the risks and benefits of conventional antidepressant medications with the risk of untreated depressive disorders is difficult during pregnancy and lactation. Complementary and Alternative Medicine (CAM) therapies are widely used, accessible, and understudied for psychiatric conditions such as depression. National estimates are that nearly 40% of reproductive age women use CAM therapies. The use of CAM therapies in primary care settings in Texas is widespread.

Methods: Twenty-five women already participating in an on-going prevalence study were interviewed for CAM therapy use. The study participants were pregnant or up to 6 months postpartum, and between the ages of 21 and 45. Each study participant answered questions about her knowledge and use of CAM therapies, including: exercise, yoga, omega-3 fatty acids, s-adenosyl methionine (SAM-e), folate, St. John's Wort, acupuncture, prayer, bright light therapy, and osteopathic manipulation. Each respondent was asked about her perceived benefit of the CAM therapies used. We examined the relationship between survey responses and depression scores on the Edinburg Depression Scale.

Results: Of all the CAM therapies, exercise and prayer were recognized and used the most. One respondent used osteopathic manipulation, but she perceived it to have a great benefit for her mood. Prayer was the most frequently reported CAM therapy used by these respondents, and viewed as having the greatest benefit for improving mood or symptoms of depression

Conclusions: Perinatal depression remains both under recognized and under treated, and CAM therapies could potentially help these patients. Some CAM therapies are not widely known to both health providers and patients. More evidence-based research on CAM for perinatal depression is needed. CAM therapies may be used to improve patient outcomes and lower costs.

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Title of Project: RETROSPECTIVE DATA ANALYSIS OF METHYLENETETRAHYDROFOLATE REDUCTASE POLYMORPHISMS COHORT

Student Name: Poorna Chandra Rao Lelsani
Academic Advisor and Department: Swati Biswas, PhD, Department of Biostatistics
Site Supervisor and Location: Sanjay Awasthi, MD, Texas Oncology

Introduction: MTHFR (Methylenetetrahydrofolate Reductase) is an enzyme responsible for folate metabolism. Folate is a cofactor in the remethylation of homocysteine (Hcy). Without remethylation, Hcy levels increase, leading to thrombo-embolic episodes. Mutations can occur at one of two sites of the MTHFR gene- C677T and A1298C. The current study considered cases with these mutations grouped into heterozygous and homozygous for each mutation, and a group with compound heterozygosity. The purpose of the study was to test 1) if any of the polymorphisms was associated with increased Hcy levels in the body 2) if Hcy levels were different among the groups and 3) whether folate and Vitamin B12 therapy significantly reduced the Hcy concentrations.

Methods: Data collected from MTHFR cohort (n=100) was used for analysis. Chi-square test was used to test association between Hcy (classified: normal and elevated) and different mutations, age, gender and group. Analysis of variance (ANOVA) was used to compare the level of Hcy (continuous variable) among various groups. Paired t-test was used to compare the level of Hcy pre- and post-therapy.

Results: Chi-square test showed that only age is significantly associated with Hcy levels. ANOVA showed that there is a significant difference in the levels of log Hcy among the groups, and was significant only for C677T mutation (P=0.021). Paired t-test showed that there is no significant reduction of Hcy in response to therapy.

Conclusions: Age and C677T mutation are the factors responsible for elevated Hcy levels in this population. Further analysis of this cohort to analyze the trend of Hcy in different groups at various time-points will help us understand the effects of these mutations.

Title of Project: PREVENTION QUALITY INDICATORS VALIDATION STUDY AMONG SERVICE AREAS IN THE DALLAS-FORT WORTH METROPOLITAN SERVICE AREA

Student Name: Chris Lewis
Academic Advisor and Department: Martha Felini, PhD, Epidemiology
Site Supervisor Name and Location: Brad Walsh, MPH, Parkland Hospital, Office of Strategic Planning

Background: AHRQ Prevention Quality Indicators (PQIs) are a recent development in understanding preventable hospital admissions and their relation to the primary care network of an area. The purpose of this study is to cross-validate these supposed measures of access to high-quality primary care against demographic variables such as insurance status, race, income, language spoken, and education, as well as against emergency department use data, all of which are thought to be associated with access to healthcare.

Methods: This is an ecologic cross-sectional study using 2007 population and hospital inpatient data from thirty-one service areas in the Dallas-Fort Worth Metropolitan Service Area. Demographic and inpatient data were collected from Claritas and Texas Department of State Health Services, respectively. The level of study is the service area, a sub-county geographic unit. Associations were calculated using Pearson's correlation coefficients and related p-values with Bonferroni adjustment for multiple comparisons.

Results: Preliminary analysis via correlation matrix suggests strong correlation between demographic variables and PQI measures. Especially strong were correlations for per-capita income and education level against PQIs. Several PQIs correlated strongly against avoidable emergency department visits as well.

Conclusions: PQIs, which represent the most current understanding of measurement of access to high-quality primary care, correlate strongly with other predictors of healthcare access in the Dallas-Fort Worth Metropolitan Service Area.

Title of Project: TARRANT COUNTY PUBLIC HEALTH DEPARTMENT

Student Name: Jan Luchetski
Academic Advisor and Department: Dr. Liam O'Neill, Health Management and Policy
Site Supervisor Name and Location: Lou Brewer, Tarrant County Public Health Department

Introduction/Background: The purpose of the practicum experience was to gain knowledge and experience in the Public Health discipline. The practicum focus was to focus on evaluating methods of ensuring community health, safety and preparedness; to apply principles of strategic planning and marketing to public health; and communicate health policy and management issues using appropriate channels and technologies.

Methods: To meet the goals, discussions with different staff members at the Tarrant County Public Health Department were held. In addition, observation additional interdepartmental meetings was employed. Participation in the Fetal Infant Mortality Review process was part of the process also.

Results: Tarrant County Public Health Department has adopted a proactive approach to meet the community health needs. In place is a program targetted at ensuring community health, safety, and preparedness. For example, through the Advance Practice Center automatic syndromic monitoring of 55 local hospital emergency rooms provides real time information of disease or exposures to biological agents. Priniciples of strategic planning and marketing to public health are utilized to communicate results from the Fetal Infant Mortality Review process and to promote the Live a More Colorful Life Campaign aimed at obesity reduction and improved nutrition. Also, the Tarrant County Health Department partners and collaborates with numerous agencies to improve the distribution of health improvement strategies. Communication of health policy and management issues is achieved through numerous mechanisms including a robust departmental website, press releases, and a Facebook page during flu season. Dr. Parker, the Medical Director, also publishes articles in the *Tarrant County Physician* to provide current information on local health issues.

Conclusions: The Tarrant County Public Department is actively promoting wellness strategies, health improvement initiatives, and collaboration with other agencies with the goal to improve the community's health. I have valued the experience and have gained a greater understanding of the public health disciplines goals, challenges, and rewards.

Title of Project: ANALYZE AND COMPARE COMMUNITY BENEFIT EFFORTS AMONG NON PROFIT HOSPITALS IN THE DALLAS FORT WORTH METROPLEX

Student Name: Dominique N Lynch
Academic Advisor and Department: Fernando Wilson, PhD, Health Management and Policy
Site Supervisor Name and Location: Benjamin Jacob, MPH, Dallas Fort Worth Hospital Council (DFWHC) Education and Research Foundation

Introduction: The foundation is a nonprofit organization and it is an extension of the DFWHC, which is a trade association for hospitals located in the Dallas-Fort Worth area. The Education and Research Foundation conducts research and data submission for all of its participating hospitals; ensures the community is benefiting sufficiently from the participants so that their tax-exempt status can remain intact; and implements programs for educating participants and improving care through its Information and Quality Services Center as well as its Workforce center.

In 2008, the US Government Accountability Office (GAO) released a report detailing the inconsistencies in community benefit reports of nonprofit hospitals. The study included four states; Texas, California, Massachusetts and Indiana. The various entities of the Baylor Health Care System, the Methodist Health System, Texas Health Resources, and two Stand Alone/Specialty Hospitals were researched and evaluated on how they define and meet community benefit requirements. The findings were used to verify adequate community benefit is being provided and to determine whether hospitals should remain tax-exempt.

Methods: The study reviews literature on Texas's community benefit reporting requirements and the history of Charity Care and the Federal Tax Exemption for Nonprofit Hospitals. Major issues facing nonprofit hospitals regarding provision of community benefit from a legislative and demographic perspective were also analyzed. The findings were compared to nonprofit hospitals throughout Texas and the USA.

Results: All of the hospitals have provided the necessary reports required by the state of Texas and the IRS.

Conclusion: Findings prove these nonprofit hospitals should remain tax-exempt; however, suggest a consensus be made between government agencies, the states, and industry groups in regard to what justifies community benefit.

Title of Project: ABHR IN PALLIATIVE CARE: EXTENSIVE RESEARCH NEEDED

Student Name: Amee Mehta
Academic Advisor and Department: Dr. Fang Fang Zhang, Epidemiology
Site Supervisor Name and Location: Dr. Jatin Dave, Department of Aging, Brigham and Women's Hospital, MA.

Introduction: Terminally ill patients commonly experience symptoms like nausea and vomiting which are very distressing. Recently, use of compounded medications like ABHR (Ativan, Benadryl, Haldol, Reglan) gels have been found effective in alleviating nausea and vomiting in the palliative care settings. Unlike the traditional medications, compounded medications provide better quality of life to patients at their end-of-life stages due to their easy of application. This article focuses on reviewing the current literature about use of ABHR gels/ointments/ rectal suppositories and their role as comfort care medicines in palliative care.

Methods: A comprehensive literature search was done using MEDLINE, SCOPUS, Academic Search Complete, CINAHL, CCTR, EMBASE and Google Scholar using terms like "ABHR", "ABH", " ativan benadryl haldol reglan", "Lorazepam Diphenhydramine Haloperidol Metoclopramide", "vomiting", " nausea", "palliative", "hospice", "gels". This search was complemented by manually searching reference lists of relevant articles, newsletters and Journals. The quality of the studies was also graded according to the Agency for Healthcare Research and Quality grading system (AHRQ). Meta- analysis was not carried out due to quality of the studies.

Results: Out of 35 articles identified by the search, only 6 articles were included in the review as per the criteria. Although all the included studies favored use of ABHR gel in improving nausea and vomiting, they were inconsistent and did not follow any standard protocol. Data on symptom measurement, nature of interventions, evaluation methods was not clearly explained. Studies lacked comparisons with control groups and randomization, thus regarded as "Insufficient" strength of evidence according to AHRQ.

Conclusion: Despite the demonstrated effectiveness of the ABHR gel in clinical settings, no evidence of controlled studies was found. Extensive research is warranted for recommending use of the compound ABHR as a standard therapy. The article also mentions about the challenges in doing controlled trials and recommends carrying out N-of-1 trials for special situations.

Title of Project: TRUST IN PHYSICIANS IN THE GOODNEWS COMMUNITY TRIAL, DALLAS, TX

Student Name: Mahendra Nehra
Academic Advisor and Department: Dr. Swati Biswas, Biostatistics
Site Supervisor Name and Location: Brad Walsh, Parkland Health and Hospital System, Dallas, TX

Introduction/Background: Trust in physician is an important aspect of patient care. Patients with a higher level of trust in their physician have better clinical results due to better patient compliance. Previous studies find that African American patients have a lower level of trust in their physician in comparison to patients from other ethnic groups like Non-Hispanic Whites. But there has been little research concerning, factors contributing to low physician trust within the African American community.

Method: Our study is part of GoodNEWS (Genes, Nutrition, Exercise, Wellness, and Spiritual Growth) project. GoodNEWS is an intervention, through urban African American churches in Dallas area, aimed at placing lay health workers in churches to improve church member's health knowledge, health behaviors, clinical findings and utilization of the healthcare system. In GoodNEWS, a questionnaire examining a broad series of issues, including access to healthcare, knowledge and attitudes, dietary and physical activity, history of chronic disease diagnoses and treatment, and healthcare utilization is administered to 400 African American church members before intervention. For our analysis, the baseline data are analyzed for trust in physicians in African American community for “partial” and “full” trust and associated factors with less than full trust in physician in this community. We calculated bi-variate correlations and logistic regression models using SAS software.

Result: Pre-intervention data of the GoodNEWS project shows that 55.2% of participants trust their physicians "partially" and 44.8% trust “fully". Results of logistic regression suggest that having higher number of chronic diseases risk factor/diagnosis is significantly associated with greater trust in their physicians with Odds Ratio: 1.52 (p value-.0037).

Conclusion: Successes of the lay health promoter intervention in the GoodNEWS trial can be greatly influenced by trust of African American community people in their physician. With this background GoodNEWS investigators can explore new ways to improve healthcare access and utilization in African American community in Dallas area.

Title of Project: CARNAVAL DE SALUD: 2009 SURVEYS RESULTS

Student Name: Arpankumar Patel
Academic Advisor and Department: Dr. Karan Singh, Ph D., Biostatistics
Site Supervisor: Micky Moss Moerbe, M.P.H., Epidemiology and Health Information, Tarrant County Public Health

Introduction: Carnival de Salud has been hosted by Tarrant County Public Health (TCPH) every year since 2006 as part of Binational Health Week (BHW). BHW works to promote health awareness among underserved immigrants and migrants from Mexico and Latin America. In 2009, Carnival de Salud was held on October 3rd at TCPH. A survey was conducted to assess the health care issues among the participants of the health fair.

Method: Participants, 18 years and older, who volunteered to take the survey were included in the study sample. Two hundred three participants completed the survey. The Survey was administered in English and Spanish. Participants were given a $5 gift card as incentive for completing the survey. The survey captured information on the participants' experience at this event, barriers to accessing health care and health facilities, insurance coverage, chronic disease history and their utilization of various health screening opportunities.

Results: The majority of the participants were 35-44 years old, Hispanics and females. John Peter smith was listed as the health care provider among 48% of respondents. Health care cost was mentioned by most of the participants as the biggest obstacles to receive health care services. More than half of the participants were uninsured. In term of physician advice on chronic disease within last 12 months 53% have not received advice, while 25 percent and 22 percent participants were received advice on blood pressure, diabetes respectively and 20 percent were received advised on obesity/overweight. Respondents have also received screening test of Glucose (23%), vision/dental (21%), cholesterol (20%) and blood pressure (17%) at this event.

Conclusions: The Survey results underscore the importance of having more targeted chronic disease preventive programs in order to improve the health status of the immigrants from Mexico and Latin America.

Title of Project: HEARING CONSERVATION PROGRAM FOR HELICOPTER TRANSPORT PERSONNEL IN HEALTHCARE

Student Names: Parthavkumar Patel and Inder Patel
Academic Advisor and Department: Dr Terrance Gratton, DrPH, Environmental & Occupational Health
Site Supervisor and Location: Joyce Hood, MPH, RN, COHN-S, Cook Children's Healthcare System

Introduction: Noise is a significant risk factor in aviation. The goal was to assess the noise exposure levels (in flight) of pilot, crew (nurse, respiratory therapist etc.) and passenger (e.g. parent) and subsequent development of Hearing Conservation Program at Cook Children's Hospital, Fort Worth, Texas. Although there is already one program in place, development of more robust is desirable.

Method: Two noise exposure surveys were conducted, one in old helicopter and second in new helicopter. These surveys were carried out on a pilot, a simulated parent and a simulated crew member to measure individual exposure level. The sound level exposure was measured by three standards (ACGIH TLV, OSHA HCP and OSHA PEL) with the help of dosimeter, although the assessment of hearing conservation program requires only OSHA HCP. Overall sound level exposure was measured by sound level meter. Review of current hearing conservation program and current PPE being used for hearing protection was also done, keeping in mind the need for communication with the patient in flight.

Results: After reviewing the readings of both the helicopters, it was determined that outside and inside the helmet/headset sound exposure level readings were higher in the new helicopter as compared to the old one. The sound exposure level results which were measured by the SLM in the new helicopter were also higher than the old helicopter. This shows the correlation of SLM reading and dosimeter reading.

Conclusion: Although current HCP is facilitating in reduction of noise exposure, these study suggests that more stringent hearing conservation program is required for better protection to aviation staff of the hospital.

Title of Project: OUTBREAK OF *BURKHOLDERIA CEPACIA* IN CRITICAL CARE PATIENTS — TEXAS, 2009-2010

Student Names: Sandipkumar Patel and Umang Shah
Academic Advisor and Department: Raquel Qualls-Hampton, PhD, Epidemiology
Site Supervisor and Location: Micky Moss Moerbe, M.P.H., Tarrant County Public Health Department

Introduction: Between May 2009 – January 2010, 12 patients at a local hospital had cultures positive for Burkholderia cepacia. Isolates were from respiratory tract of patients in critical care units. Tarrant County Public Health Department (TCPH) in collaboration with the Texas Department of State Health Services (TX DSHS) and the Centers for Disease Control & Prevention (CDC), conducted an outbreak investigation. The aims of the outbreak investigation were three-fold: 1) to identify potential sources of B. cepacia transmission, 2) to identify risk factors for infection or colonization, including breaches in infection control and 3) recommend control measures to minimize further spread in the facility.

Methods: A case control study was designed to identify the potential sources of infection. The ration of controls chosen was 3:1. Hospital laboratory records were reviewed for inpatients from 2006-2010.Confirmed case was defined as a positive *B. cepacia* culture, taken from 3 calendar days after admission to 1 calendar day after discharge, with at least one previous negative culture prior to the positive culture between February 1, 2009 and February 1, 2010 in patients admitted to Hospital. Controls were randomly selected from all patients present in affected critical care units on days of positive cultures cases, frequency matched to cases based on presence in affected critical care units, any B. cepacia-negative culture (respiratory, blood, urine) at least three days after hospital admission, and those who stayed in affected critical care units for at least 1 calendar day. Data abstracted using a case and control abstraction form that was created by TCPH and the CDC.

Results: Pending

Conclusions: Pending

Title of Project: INTRAOPERATIVE MAGNETIC RESONANCE IMAGING (iMRI) FOR THE MANAGEMENT OF PEDIATRIC BRAIN TUMORS

Student Name: Parna Prajapati
Academic Advisor and Department: Raquel Qualls-Hampton, Ph.D., Epidemiology
Site Supervisor Name and Location: John Honeycutt, M.D., Department of Neurosurgery, Cook Children's Medical Center

Introduction: Intraoperative MRI (iMRI) is a recent advancement in MRI technology which allows real-time intra-operative imaging to guide surgical intervention. Several studies have shown the effectiveness of iMRI in achieving greater resection of intracranial neoplasms in adults, but only a handful of data is available in the pediatric population. Here we report descriptive statistics of pediatric patients undergoing tumor resection at Cook Children's Medical Center using iMRI. Factors associated with re-operation rates during the operative period were evaluated.

Methods: Ninety-two patients under the age of 21 years (57 males, 35 females) underwent resection for brain tumor using iMRI between 2007 and 2010. Retrospective analysis was conducted to confirm association between outcome variable ('go back' status) and independent variables ('age', 'gender', 'location', 'pathology', 'number of scans', 'grade') using Fisher's Exact Test (FET). Logistic regression models were performed between outcome variable and independent variables.

Results: Of the 92 patients, 42% had to 'go back' (have additional surgery) during the operative period secondary to iMRI results. Only 32% of patients with 1 iMRI scan went back for additional resection as compared to 100% of patients with 3 iMRI scans. The need for immediate re-operation was significantly (FET-18.81, $p<0.05$) associated with the number of iMRI scans patients underwent during surgery but was not associated with age (FET-4.08, $p>0.05$), gender (chi-square-0.637, $p>0.05$), location (FET-5.31, $p>0.05$) or tumor pathology (FET-4.81, $p>0.05$).

Conclusions: iMRI helps facilitate maximum surgical benefit during pediatric brain tumor operations. Demographics and tumor characteristics were not associated with the need for re-operation. Future studies are aimed at analyzing the impact and effectiveness of iMRI on patient outcomes and cost effectiveness.

Title of Project: DISCOVERY OF MARINE ANTIFOULING AGENT WITH REDUCED TOXIC LIABILITY

Student Name: Pratikkumar Sheth
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Site Supervisor and Location: John Schetz, PhD, UNTHSC

Introduction: Ninety percent of all goods worldwide are transported by ships. Marine biofouling, an undesirable accumulation of organisms on submerged surfaces, is a major concern for the shipping industry. Macrofoulers drastically increase the fuel consumption which ultimately increases pollution and the cost of shipping. Effective marine antifouling agents contain toxic metals or other persistent poisonous compounds that travel up the food chain and directly impact humans.

Methods/Discussion: Four test compounds, a parent compound and three derivatives, were analyzed on the marine hooked mussel (*Ischadium recurvum*), a model organism for macrofouling. Each group for each experiment consisted of 16 mussels and experiments were repeated three times. Mussels were exposed for 48 hours to test compounds diluted in Artificial Sea Water (ASW) and compared to mussels not exposed to any compounds. The number of live attached and dead mussels was recorded. Live mussels were then transferred to fresh ASW for 48 hours to observe any residual effects of the test compounds. After this post-exposure period, the number of live attached and dead mussels was recorded. The same compounds at the same concentration were then tested in a cumulative lethality assay using brine shrimp (*Artemia salina)*, a non-target model organism for toxicity studies. Brine shrimp were also exposed to a positive control (isothiazolone). For these experiments, each group consisted of 20 brine shrimp and was repeated three times. Following the exposure, number of dead brine shrimp was recorded at 24, 48, and 72 hours.

Results: The parent compound and one of its derivatives, IITD-012, had significantly prevented mussel attachment compared to the control. While IITD-012 had some toxicity towards mussels compared to the negative control, its toxicity was lower than the parent compound. All four compounds, tested at the same concentration as in mussel attachment assays, had limited toxicity towards brine shrimp compared to positive control.

Conclusion

The parent compound was originally discovered for its antifouling activity on fresh water mussels. The same compound also had antifouling activity on marine mussels; however, the toxic liability was greater than for fresh water mussels. One derivative, IITD-012, had improved antifouling activity and reduced toxic liability.

Title of Project: CHILD HEALTH SURVEILLANCE SYSTEM

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Site Supervisor Name and Location: Dean Lampman, Regional Surveillance Coordinator; Tarrant County Public Health

Introduction/Background: After creating a successful surveillance system within the Tarrant County School Districts, Tarrant County Public Health plans to create a similar surveillance system within childcare facilities. Children are the most susceptible to and are viable carriers for influenza. Children in childcare facilities, as well as personnel are more susceptible to the flu. Influenza leads to a loss of personnel to maintain operations from illness as well as a financial burden from scrambling to find qualified personnel as replacements. This study aims to alert early changes in influenza activity in the pre-school community.

Methods: A focus group was conducted to gather information on how to engage childcare facilities to participate. It was determined that providing presentations on healthcare topics pertaining to childcare facilities would be of interest to give back to these agencies. Creating a partnership with Campfire, a training agency for child care personnel, helped establish a location to implement the training sessions. Five sessions have been created and approved. Each session will focus on a different health topic to increase awareness on preventing infection and disease, followed by training on inputting data into the surveillance system. Incentives to further engage personnel include: temporal thermometers, hand sanitizer dispensers, Managing Infectious Diseases in Child Care & Schools, and a Parent Resource center where handouts that contain information of public health concern among these populations can be distributed. Additional presentations have been made for future use if more are needed when the program is restarted in August.

Results: Due to the delay in engaging Campfire and coordinating schedules, the program has yet to begin. A process evaluation and an outcome evaluation will be conducted. The forms for each type of evaluation have been created and will be implemented once the program begins.

Conclusions: No conclusions could be made about the program at this time.