

# Office of Public Health Practice Practicum Abstracts e-Book



Summer 2009



## **Introduction**

The practicum experience is an integral part of the MPH curriculum. Students from all divisions are afforded the opportunity to interact with public health professionals, apply classroom knowledge, and be integrated into public health practice under the guidance of a community preceptor. Projects completed during the practicum provide students with a meaningful hands-on experience which directly benefits the host organization.

Since Spring 2007, the University of Texas School of Public Health, Office of Public Health Practice has compiled an e-book – a collection of abstracts in which students describe their practicum experiences and the projects in which they were involved. This showcase allows students to share their work with a broad audience and illustrates the breadth and scope of public health practice. Over the last two years, 26 abstracts have been selected for publication in the Texas Public Health Journal to celebrate National Public Health Week.

This eighth edition highlights student practicum experiences completed during the Summer 2009 semester.

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**Topic: Adolescent Sexual Health**

**Title: Teen Pregnancy Prevention and Advocacy for Effective Sexual Health Education**

**By Efrat Karny**

**Public Health Significance**

Adolescent pregnancy and sexually transmitted infection (STI) rates are increasing across the United States and Texas in particular. Locally, youth are having sex at younger ages. Texas stands 3<sup>rd</sup> highest in rates of teen pregnancy and 1<sup>st</sup> in repeat teen pregnancy. School districts in Texas often do not implement effective sexual health education, leading to unsafe sexual practices among teens, which continues to present a challenge that the public health community must address aggressively.

**Approach**

I began my practicum experience, a collaboration between the University of Texas Prevention Research Center (UTPRC) and Planned Parenthood of Houston and Southeast Texas, by assisting in the organization of a summer course for the Houston community on adolescent sexual health. Subsequently, participating in the course helped provide a framework for the remainder of the practicum work. Along with fellow students, I assisted in the development of a webinar that we sponsored through the UTPRC, Planned Parenthood, and the Education Works coalition, to share data about teen pregnancy to parents and community activists across the state of Texas.

A bulk of the practicum experience was spent organizing and developing a new course on adolescent sexual health to be offered at the UT School of Public Health this fall. We worked to identify lecture topics, readings, assignments and projects that will provide valuable knowledge, tools, and skills to public health graduate students.

A third project involved the creation of a Youth Advisory Group (YAG) to the UTPRC, which will operate in conjunction with the existing Community Advisory Group (CAG). Our vision for the YAG was to provide a youth voice to the issue of adolescent sexual health and dissemination of effective sexual health education, which will be the focus of the UTPRC over the next five years. The YAG will empower our young people to become more informed about their duties to maintain their personal health and will enable them to effect change in their communities from a young age, fostering future leadership in the field of public health. This project presented a unique set of challenges in that its evolution required inclusion of many community leaders and agencies. Because there have been some barriers to overcome in the development of the YAG, it is still in process, but youth-serving community agencies have begun to identify youth to serve in this advisory and advocacy group, and it will hopefully be fully underway this fall.

## **Findings**

The final products for this practicum included: Production of the “We Can Do More” webinar, which took place on August 12, 2009; Development of the Fall 2009 course syllabus for the UTSPH Adolescent Sexual Health course; and Beginning of the creation of the UTPRC’s Youth Advisory Group (YAG).

## **Essential Services of Public Health**

This practicum experience fulfilled the public health service of informing, educating and empowering parents, community leaders, youth, and graduate students about adolescent sexual health issues. The projects also mobilized community partnerships to address the problem of teen pregnancy through the collaborative webinar and other work with various community agencies throughout this practicum.

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## **Topic: Adolescent Sexual Health**

## **Title: Adolescent Sexual Health Practicum Abstract**

**By Maura Leahy**

## **Public Health Significance**

Adolescent sexual health is an extremely important public health issue in today’s society. Adolescent sexual activity is more common than many believe; about 1 in 10 sixth graders has had sex, as have almost two-thirds of twelfth graders. However alarming these numbers are, the simple fact that such a large number of adolescents are engaging in sex is not the biggest problem. It is the outcomes of these behaviors that can have harmful and long-lasting effects on adolescents and that affect not only them but also others in society who may think adolescent sexual health is of no concern or interest to them.

Sexually transmitted infections (STIs) and teen pregnancy are two of the outcomes used to measure the outcomes of adolescent sexual behaviors. In the United States, almost half of new STIs occur among 15-24 year olds and half of new HIV infections occur among people under 25. These high numbers of STIs among young people is also financially taxing; the total medical cost for new STIs among 15-24 year olds is \$6.5 billion.

Teen pregnancy is the other major measure of the state of adolescent sexual health and for the US it is a very telling one. The US has the highest teen birth rates of industrialized countries. Teen pregnancy has serious consequences for both teen parents and children. For example, teen parents are less likely to complete high school and more likely to live in poverty and children of teen parents are more likely to become teen parents themselves. In addition, teen pregnancy costs over \$9 billion every year and about \$1 billion of those costs belong to Texas. Thus, adolescent sexual health does not only affect adolescents and their families. It is an important public health issue that affects our whole country.

### **Approach**

I made progress on this topic by reviewing research collected by the UT-Prevention Research Center (UTPRC) and by doing some of my own research. I also attended the 2009 Summer Course on Adolescent Sexual Health.

### **Findings**

My final product is a practicum in adolescent sexual health for students who successfully complete the adolescent sexual health course in Fall 2009. They will receive training in It's Your Game: Keep It Real, have opportunities to work with a teen clinic, Planned Parenthood, and the UTPRC on its core project, and have journal questions that stimulate reflection and continued questioning of beliefs and values related to adolescent sexual health.

### **Essential Services of Public Health**

The essential service of public health that my project primarily addresses is: inform, educate, and empower. Based on the public health significance of adolescent sexual health, it is clear that it is a very important public health issue. However, many people are not aware of just how important it is or how it affects their lives. For this reason, I think one of the most important (and first) things to do is inform and educate people about the issue so that they see what a problem it is, and then to provide them with the necessary tools to empower them to do something about it.

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### **Topic: Adolescent Sexual Health**

### **Title: Teen Pregnancy Prevention through Education and Advocacy**

**By Dennis Li**

### **Public Health Significance**

Teen childbearing is linked to a myriad of negative health and quality of life outcomes for teen parents and their children and comes at tremendous economic cost to society. The United States trails the other developed nations with a teen birth rate of 41.9 births per 1,000 teens aged 15-19, eleven times that of the Netherlands and one and a half times that of the second highest country, the United Kingdom (UNSD, 2006). These data indicate the U.S. is not effectively using its capabilities to affect the situation. The problem is even more pronounced in Texas, which ranks third in the nation for highest teen birth rate and first for repeat births (National Campaign to Prevent Teen Pregnancy, 2009). To address this urgent but preventable public health issue, it is imperative that teens, parents, schools, communities, and legislators be appropriately and effectively educated about adolescent sexual health, its causes, and its consequences.

## Approach

Planned Parenthood (PP) is at the forefront of adolescent sexual health education and advocacy. During my practicum with PP of Houston and Southeast Texas in collaboration with the University of Texas Prevention Research Center (PRC), I was able to assist in endeavors targeting various groups of people. First, I synthesized current research on gay and lesbian youth, an often marginalized and forgotten population, to incorporate data and information relevant to their needs into existing PRC materials. I also helped prepare for a PRC and PP-hosted four-day workshop on adolescent sexual health for youth serving organizations in Harris County. Because it is also important to educate future public health leaders, I helped expand upon the workshop to design a graduate-level course that incorporates additional topics such as culture and religion, dating violence, and sex trafficking. Lastly, educating parents to talk to and advocate for their teens is crucial to affecting change in multiple arenas. Utilizing existing PRC resources, PP parent networks, and new interactive web technologies, I spearheaded the production of a webinar about the current state of teen pregnancy in Texas that was broadcast to participants across the State.

## Findings

The *We Can Do More* webinar was held at lunchtime on August 12, 2009, with at least 45 people in attendance and over 80 people receiving the recording. Live follow-up events in five cities have been scheduled for September. Following the conclusion of my practicum, the PRC also has presentation slides and a fact sheet regarding teen pregnancy and sexual risk factors in gay, lesbian, and bisexual youth. Furthermore, my faculty sponsor and community preceptor will use the Adolescent Sexual Health syllabus in a course they are co-teaching at the School of Public Health this fall. Though these products are small in comparison to the looming issue of teen pregnancy, they are positive strides toward the final goal.

## Essential Services of Public Health

My practicum served to inform, educate, and empower people and mobilize community partnerships to advocate for appropriate and effective sexual health education for adolescents. Teen pregnancy is a not just an adolescent problem but one for all of society.

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National Campaign to Prevent Teen Pregnancy. (2009). 50-state and national comparisons. Retrieved August 25, 2009 from <http://www.thenationalcampaign.org/state-data/state-comparisons.asp>

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**Topic: Adolescent Sexual Health**

**Title: Teenage pregnancy in Texas and its consequences**

**By Jerome Okudo**

Texas has one of the highest rates of teenage pregnancy in the US. This has impacted on the lives of adolescents. This problem is borne out of the fact that Texas does not have a good policy that allows for truthful and effective sex education in schools. Teenage girls who get pregnant are more likely to get pregnant again, are more likely not to complete high school and are more likely to have children who would also become teenage parents. In addition, if teenage girls are getting pregnant because of lack of comprehensive sex education, then one can imagine the large numbers of teenagers that get an STI or HIV/ AIDS.

In collaboration with St Luke’s Episcopal Charities, Planned Parenthood Federation of Houston and The Texas Prevention Research Center, we organized an Adolescent Sexual Health Course for stakeholders which included parents, teachers and adolescents. They were empowered on the needs of adolescents and we did a lot of brain storming on issues affecting the sexual health of teenagers in Texas. In addition, we organized a Webinar where my preceptor also addressed these issues and we encouraged those who benefitted from the webinar to spread the message that they got on these adolescent sexual health issues. We are currently working on a follow up for those who were logged on to the webinar. Statistics on teenage pregnancy were presented as an effective tool.

We used many of the essential public health tools which include giving information, enlightening and empowerment of those who were part of the Webinar and the adolescent sexual health course and we used a lot of community partnerships because Planned Parenthood and St Luke’s Charities were involved. Research was also a major part of our work.

Our final product was to advocate for better and more comprehensive sex education in elementary and high schools to reduce the high number of teenage pregnancy in Texas and reduce ultimately the consequences of teenage pregnancies as well as other adolescent sexual health issues that affect them.

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**Topic: Ageing Population****Title: Multi-Site Geriatrics Assessment- Understanding Medical and Social Challenges Faced by Older Adults****By Hina Budhwani****Public Health Significance**

By the year 2025, an estimated number of people over the age of 60 will reach approximately 1.2 billion throughout the world. According to a recent report from the United Nations population division, the number of older persons has tripled in the past 50 years and will triple again in the next 50 years. In the United States alone, the number of people over the age of 60 has more than doubled, going from 20 million in 1950 to over 46 million in the year 2000 (United Nations). In addition, the older population in the United States is expected to become extremely diverse with an increase from 10.2% to 21.3% of the total population between 1990 and 2050 (Taeuber, 1990). Since physical health declines with ageing, it limits older adults from doing several Activities of Daily Living (ADLs) such as eating, bathing, toileting, dressing, and walking. In addition to challenges with ADLs, medical needs of older adults also increase. Although many elderly people can be looked after by the family members, this is not a viable option for several older adults. Reasons for this includes being too old or too sick to be taken care of by the family members. At this stage of life, long term care institutions such as assisted living facilities, independent living houses, and nursing homes are some of the available options. In order to assure that our growing population of older adults receives adequate care and the opportunity to live with dignity and respect, public health's focus must be to prepare a workforce that is able to care for older adults.

**Approach**

In order to learn about various medical and social challenges that come with ageing, I developed a multi-site practicum. This multi-site practicum included visiting older adults in various assisted living facilities, independent housings, and nursing homes. Meeting with older adults in different settings allowed me to differentiate the kind of care they receive and the challenges they face. I also advocated for nursing home residents by meeting with the residents and asking them about any complain they might have regarding care they receive at the current institution. I then tried to resolve the issue(s) by meeting with appropriate staff members of the nursing home. I also participated in a qualitative study where I collected data on challenges faced by the older adults.

**Findings**

My experience at various long term care settings shows that older adults face many medical and social challenges as part of ageing process. I especially found out the sexual intimacy of older adults is seen by the staff of long term care institutions as problematic and intolerable. To further explore this topic, I chose to focus on this topic for my thesis. In my thesis, I would like to show that sexual intimacy among

older adults is positively associated with their mental being. Therefore, it should not be overlooked.

Based on my experience in this practicum, I believe that we need to find innovative ideas to decrease or eliminate the above mentioned challenges altogether. This can only be done by educating and preparing young professionals to work in healthcare settings that care for older adults.

### **Essential Services of Public Health**

Essential services provided by this practicum include ensuring that the needs of the elderly people are met to the best of staff's social and medical knowledge.

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### **Topic: Air Force: Population Health Division**

### **Title: Air Force Medical Operations Agency**

**By Raymond J. Clydesdale**

### **Public Health Significance**

This practicum was conducted at the Population Health division of the Air Force Medical Operations Agency (AFMOA). The population health division is primarily focused on maintaining a healthy and fit force through various initiatives. Additionally, they focus on dependent care to make sure that the Air Force is maximizing its capabilities in caring for all aspects of health care. The pop health division is both proactive and reactive on a number of fronts. They are vigilant on routine preventative care to include immunizations, annual pap exams, mammograms, etc. They are also proactive in continual surveillance of at-risk populations. One of the most pertinent populations is the basic trainees who live in dormitories on base. AFMOA surveys for all sorts of infectious diseases to include gastro-intestinal, influenza and of course, H1-N1. The military is generally at the forefront of such data collection which is vital for the national defense by keeping the civilian population healthy and to make sure that the force is fit and ready to serve.

We care because the data in the military population is used for multiple studies that are directly applicable to the civilian population. The military is one of the few institutions that actually does electronic medical records and is constantly upgrading and updating to get the best product... which of course will be fielded to the civilian population. In fact, the new programs coming down in the next few years will be designed to actually talk to each other so that data entry will not be redundant.

As previously discussed, the scope is enormous because of the potential application to the U.S. population in general. The military is striving for a cradle-to-grave electronic medical record. Pop health is helping to refine this product. Remember, it was the military that created the internet. If we can perfect the electronic medical record, the benefits can be immeasurable.

**Approach**

I focused on alcohol and the military. Alcohol’s negative impacts (like death and injury from a DUI) can severely diminish the military’s readiness. There was a wealth of opportunity by using the Department of Defense Health Related Behaviors Survey from 2005 to determine if binge or heavy drinking contributed to the overall inability to deploy. Fortunately, the division just received the 2008 version which was briefed to the surgeon generals of all the military’s services. We were afforded the opportunity to watch how they crafted priorities. Is tobacco more important than alcohol? Where do you put your resources?

**Findings**

The final product helped me towards my thesis which is titled, “The Effects of Binge Drinking on Military Readiness: The Inability to Deploy”.

**Essential Services of Public Health**

Although Pop Health touched on every single principal function, the two most prominent would have to be Surveillance/Assessment/Analysis and Evaluation & Accountability.

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**Topic: Alzheimer’s Caregivers**

**Title: Faith Based Intervention for African American Alzheimer’s Caregivers**

**By Andrea James**

**Public Health Significance**

Alzheimer’s disease is often described as a family disease due to the heavy burden the disease places on loved ones. Furthermore, several studies have shown that caregivers experience a greater decrease in immune function, lack of engagement in health promoting behaviors and lower physical health than their non care giving counterparts (Long, C. et al., 2004). Caregivers provide an estimated 644 million hours of care to ADRD patients in Texas and the 6.8 billion dollars of unpaid care (Fairchild, T. J., & Lyon, J., 2008). In accordance with national figures, the ADRD patient population in Texas is expected to increase by 74% between the 2000 and 2025 (Fairchild, T. J., & Lyon, J., 2008). These figures in conjunction with the projected increase in the prevalence of ADRD illustrate the need for the development of an intervention to give caregivers the skills to reduce stress and increase the quality of life for themselves and the care recipient.

**Approach**

The intervention was developed by Dr. Janice Paul at the Harris County Area Agency on Aging. Dr. Paul based this program on the REACH II study in which groups of caregivers were exposed to different intervention tools including support groups,

printed materials, and in home support. The objective of the Faith Based Intervention for African American Alzheimer’s Caregivers is to decrease the amount of caregiver burden experienced by caregivers. My role in the intervention involved recruiting members into the intervention. The target population was African American Caregivers who were members of a local church. Several approaches were used to recruit members into the intervention including community outreach, use of gatekeepers, Senior Citizen Expositions, and Alzheimer’s organizations. Community outreach involved us visiting several churches in the Third Ward, Fifth Ward and Sunnyside areas of Houston. During our visits, we got the contact information for the Chairpersons for the Health Ministry or Senior Ministry. We also built relationships with church secretaries or administrators. A list of gatekeepers in different churches or organizations was developed from other programs already in place within the Area Agency on Aging. We met with the gatekeepers to educate them on the program’s objectives and set up meetings with organizations or churches. We also gathered information on the political climate of the gatekeeper’s prospective organizations. We were present at Senior Citizen Expositions hosted in the city of Houston to present information about Alzheimer’s disease, caregiver burden and the intervention.

**Findings**

The intervention is still in the recruitment stage as we are currently developing new contacts and methods of recruitment. However, the experience shows that there is a need for research that outlines successful faith based intervention recruitment among African Americans.

**Essential Services of Public Health**

As mentioned above one objectives of The Special Program for Alzheimer’s Caregivers program was to reduce the level of caregiver burden associated with caring for a person with Alzheimer’s disease. Therefore, the program would fall under Essential Service #3: Inform, Educate and Empower People about Health Issues. The tools and components of the program were designed to educate caregivers about Alzheimer’s disease and caregiver’s burden. The program also contained coping strategies and techniques to empower the caregiver to better serve the care recipient. Finally, the program enlisted the help of faith organizations to assist caregivers and educate other members about Alzheimer’s disease.

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**Topic: Cardiac Rhythm Management Devices**

**Title: Atypical Infections of Cardiac Rhythm Management Devices**

**By George M Viola**

**Public Health Significance**

Permanent pacemakers and implantable cardioverter-defibrillators, collectively known as cardiac rhythm management devices (CRMD), are being increasingly utilized because of an aging population. Worldwide there are over 3 million CRMD. Infection rates vary from 0.13% to 19.9%. A National Hospital Discharge Survey from 1996 to 2003 indicated that CRMD are being increasingly utilized with a disproportional increase in the number of infections associated with these devices. The combined cost of surgical-medical treatment can easily surpass tens of thousands of dollars per patient.

Due to the high incidence of complications of partially removed infected CRMD, current optimal management comprises complete removal of the infected CRMD coupled with antibiotic therapy. Staphylococcus usually accounts for 70% to 95% of CRMD infections. Other organisms have only been reported as case reports or small case series. Therefore, in order to improve health care and implement preventive measures, it is imperative to perform a large multicenter study to adequately elucidate and identify the most common causative non-staphylococcal pathogens, epidemiological data, risk factors, and patient outcome.

**Approach**

We performed a retrospective chart review multicenter study within the Texas Medical Center. We obtained Baylor IRB approval and subsequent approval from the Michael E. DeBakey VA Medical Center (MEDVAMC), St. Luke’s Episcopal Hospital (SLEH), and Methodist Hospital (MH). Eligible patients were identified through the medical record departments by individualizing patients who had a CRMD-related infection and endocarditis (ICD codes 996.61, 996.72, 424.90, and 421.9). The search commenced when electronic medical records were established (MEDVAMC 6/1996, SLEH 9/2002, and MH 7/2004). We searched through different electronic medical storage systems (VAMC, HPF and Portal). Only those patients diagnosed with a confirmed microbiological diagnosis of non-Staphylococcal CRMD infection were included. After review of the literature, we created a comprehensive data collection sheet which included over 50 variables.

**Findings**

Despite the strict inclusion criteria, we were very successful in including patients. We screened over 1500 patients and found 456 CRMD infections. Ninety-eight (21%) were culture negative, 276 (61%) were staphylococcal-related, and 82 (18%) were non-staphylococcal-related. From the latter group, 25 were co-infected with a staphylococcal organism. Unusual organisms, such as Aspergillosis, Nocardia, and Mycobacterium fortuitum were identified. All infected CRMD systems were removed, except 4 patients who were stratified as having a high surgical risk for whom

suppressive antibiotics were recommended. Moreover, 15% of the studied patients did not have an indication for reimplantation of a CRMD. Furthermore a normal serum CRP value had a 100% NPV for endocarditis, which indicates that we could treat with 2-weeks instead of 6-weeks of antibiotics, if CRP values are normal. After one year follow up we found a 5% mortality rate.

Based on our preliminary analysis, it is reasonable to state that non-staphylococcal infections are highly prevalent. Therefore, we should initiate broad spectrum empiric antibiotics in the initial stage of treatment until full identification of the pathogen is obtained.

The collected information will be further analyzed in details to assess epidemiologic data and potential identifiable risk factors. Due to the promising results, we plan to extend our study to the remaining hospitals of the Texas Medical Center, for my potential final thesis.

### **Essential Services of Public Health**

As described above, CRMD are being increasingly utilized with a disproportional increase in infection rate. This epidemiologic research project may bring us closer toward understanding the main determinants of the escalating rate of CRMD infection. Additional knowledge in this field may enhance our ability in the near future to incorporate primary and secondary preventive measures and eventually decrease the alarming rate of infection and reduce health-care costs.

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**Topic:** *Clostridium difficile*

**Title:** *C. difficile* Related Practicum

**By** Saniah Kazimi

### **Public Health Significance**

*Clostridium difficile* is one of the primary causes of nosocomial diarrhea in the United States. *C. difficile* infections are a major problem for all infection control departments in hospitals. Antibiotic use, anti-ulcer medications use, long hospital stays, old age, chronic and acute illnesses and immune system suppression are some of the ways in which a *C. difficile* infection can occur. *C. difficile* infections can lead to diarrhea, colitis and in some extreme cases even death. Mortality rates due to new strains of *Clostridium difficile* related diseases have increased from 5.7 per million in 1999 to 23.7 per million in 2004 in the United States.

### **Approach**

Since we already know that *C. difficile* infections in hospitals are a major infection control issue it is essential to study if the sanitary measures that were being

implemented at the hospital were controlling the spread of the spores from one patient to another in the hospital.

In my practicum I was responsible for collecting Environmental samples from the rooms of the patients diagnosed with *C. difficile* infection. Whenever a patients stool tested positive for *C. difficile* the study coordinator emailed me the patient's details (name and room number). My responsibility was to collect the samples the same day I received the emails. To collect the samples I would make liquid *C. difficile* media in the lab at the school of public health (if the media wasn't already prepared). The media along with other essential items were taken over to Saint Luke's Episcopal Hospital where the patients were located. Data was collected from 5 specific areas in the rooms of the patients according to a protocol given to me by the lead investigators.

### **Findings**

In the past some of the Environmental samples collected by my colleagues turned positive for *C. difficile* spores. This meant that that there were spores in the room during the stay of the patient with the *C. difficile* infection. However, during the summer the number of patients diagnosed with *C. difficile* infections went down significantly. This is also why the number of patients enrolled in to the study went down. Another reason for there being fewer samples collected during the summer was that by the time the samples turned positive for *C. difficile* the patients were already moved to another hospital or the patients were discharged. Therefore, the data that I collected will be compiled with the previously collected data until there are enough observations on which a meaningful analysis can be done.

### **Essential Services of Public Health**

Collaborations between different organizations while respecting confidentiality of all of the patients in the study as well as the diagnosis and investigation of the *C. difficile* problem in the hospital are two of the most important services of public health that my project is addressing. Both values were highly emphasized by the lead investigators onto the research team. This was important since the practicum involved interaction with human subjects and classified patient data.

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**Topic:** *Clostridium difficile*

**Title:** *Clostridium difficile* Research Team and Laboratory Practice with the St. Luke's Episcopal Hospital System

**By** Jeticia Sistrunk

### **Public Health Significance**

*Clostridium difficile*-associated diarrhea (CDAD) is an increasing cause of gastrointestinal disease and pseudomembranous colitis in hospital patients across the United States. Patients who are elderly, immune compromised or taking wide-spectrum antibiotics are most prone to CDAD infection, which has been associated with a prolonged

hospital stay or even fatality. The collaborative *Clostridium difficile* research team, of which I was a part of, includes personnel from the University of Texas School of Public Health, the St. Luke’s Episcopal Hospital (SLEH) system, and various other institutions within the Texas Medical Center. The *C. difficile* research team is one of the largest *C. difficile* research groups in the country and develops some of the most extensive *C. difficile* research studies regarding host susceptibility, microbial pathogenesis, epidemiology, and alternative treatment methods.

**Approach**

My role within the research team involved the diagnosis and characterization of *C. difficile* strains from patient samples sent to University of Texas School of Public Health laboratory. We collected surveillance data on the *C. difficile* positive strains and stored samples for future and on-going clinical and laboratory-based research projects. During the experience, I had the opportunity to participate in stool sample collection, bacterial culture methods, drug susceptibility testing, and diagnostic techniques for *C. difficile*. I also had the opportunity to shadow several researchers in both clinical and laboratory settings that allowed me to venture outside of the initial scope of my practicum project and learn about the careers of other professionals who contribute to the prevention and control of infectious diseases.

**Findings**

During the practicum, my work contributed to laboratory efforts through sample collection, surveillance, and diagnosis of *C. difficile*. Many of the *C. difficile*-associated research projects are ongoing. Also, my MPH thesis topic arose from the clinical and laboratory work I was involved in during the practicum.

**Essential Services of Public Health**

In the context of the essential services of public health, the research group and laboratory work helped to monitor health by collecting surveillance data of *C. difficile* infection from hospital patients. The work also assisted the diagnosis and investigation of *C. difficile*-associated disease in patients from the St. Luke’s Episcopal Hospital system. Lastly, the clinical work of the research team helped to inform and educate patients diagnosed with *C. difficile* about their disease, treatment options, and current patient research studies in which they could participate.

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**Topic:** *Clostridium difficile*

**Title:** *Clostridium difficile* Associated Diarrhea

**By** Swapna Sreenivasula, MPH

**Public Health Significance**

Diarrhea is a common side effect in about 5%-20% of those prescribed with antibiotics. Among this, majority of cases are due to *Clostridium difficile* and 20% show

recurrence. The severity of the infection ranges from a self-limiting diarrhea to fulminant colitis and death. There had been nosocomial epidemics of *Clostridium difficile* associated diarrhea (CDAD) in many countries. Recently more virulent strains have been identified to be causing the illness. This has been particularly relevant in hospital settings which has led to increase in morbidity, mortality and treatment costs. Not only adults, even children as young as neonates also have shown *C.difficile* colonization with rates in children >2 years of age similar to adults. So this area has a lot of scope for further research which helps to understand the epidemiology of the disease and formulate relevant measures for control and prevention of CDAD.

### Approach

During the practicum, I could work with the *Clostridium difficile* research team and understand how different departments in the hospital work in CD program. Attended the hospital task force and research group meetings to keep track of the progress of the ongoing research and various clinical trials going on at St. Luke's Episcopal hospital. Reviewed the literature about the CDAD in United States and also accessed the physician portal in the hospital which helps to gather the required epidemiological data. Presented a summary of the article “Role of Probiotics in AAD,CDAD and RCDAD” to the journal club held every week. Involved in recruiting the patients to study Antibiotic associated diarrhea and thereby the incidence and risk factors of CDAD in those patients. Also involved in Pen study which aims at studying if pens used to get consent from patients can act as vector to transmit the bacteria. Visited the research laboratory to understand the available methods used for the detection of toxins and culture of *C.difficile*.

### Findings

This practicum opportunity helped to understand the importance of *C.difficile* diarrhea and colitis in United States and specifically in hospital settings along with the current epidemic status. The pathogenesis and risk factors of CDAD has been clearly demonstrated during the course of practicum. Also could get idea about the assay methods used for detection of toxins. By regular rounds in the hospital, could get to see how the illness due to *C.difficile* looks like. The bottom-line is that I could realize the importance of inadvertent use of antibiotics to prevent and possible role of probiotics for control of the infection.

### Essential Services of Public Health

The practicum at St. Luke’s Episcopal hospital mainly address some of the elements of Essential services of public health:

- Diagnosis and Evaluation: The work put in by the *Clostridium difficile* research contributes to the identification of diagnostic tools that can easily and rapidly detect CDAD and evaluate the severity of illness.
- Research: The second most important essential service is the research. The extensive research being done here is aimed at identifying the risk factors, pathogenesis and quick and reliable laboratory techniques used for diagnosis of *C.difficile* and also to appreciate the strains involved. The research also aims at

understanding the current state of epidemic in United States, Canada and Europe. This would help in designing control and prevention measures.

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**Topic: Congestive Heart Failure**

**Title: Abstract of the Practicum**

**By Maithili Shenoy, MPH candidate**

**Public Health Significance**

The issue I am addressing in my practicum was Congestive heart failure [CHF]. It affects a shocking 1 in 56 people in USA and kills 2,60,000 people each year in the country. Half the patients die within 5 years of the diagnosis. The reason I chose this topic was that it is a very common condition and it is imperative to find the correct drugs, doses and regimens to maintain the heart's function. Putting it simply, imagine you want to get to the next block and your heart won't permit you!

**Approach**

30 CHF patients were randomized to receive different accepted drugs for CHF treatment and their improvement in functional capacity, lab values, heart failure biomarkers, exercise tolerance was charted. An important correlation of this study was with the glucose uptake of the heart muscle and their possible improvement or decline with beta blocker therapy. It was a prospective trial being conducted since the past 2 years and I was primarily involved in the database preparation. Various questionnaires were used to assess quality of life [QOL] which we deem to be most necessary in a chronic condition like CHF. Glucose uptake was tested by sequential FDG uptake by PET scans. The study is yet not complete but I ran an analysis to see what direction the results were tending towards.

**Findings**

It is too premature to discuss the findings as yet but the QOL seemed to trend upwards with the treatment and biomarkers also showed a marked improvement. The FDG glucose uptake seems to have improved somewhat but it is too early to comment on their possible correlation with clinical and lab improvement. The t test was used to analyze the findings. To state a bottom line, it would be entirely true to say that CHF management needs rigid compliance with treatment and continued regular follow ups with the physician.

**Essential Services of Public Health**

My practicum addressed a very important aspect of public health - making health care reach out to those who are in need of it. Health disparities are very obvious in our system and this is what we tried to mitigate in the course of the practicum since this was at the Veterans Affairs system, Houston. Some of the veterans are not so affording to have health insurance and tend to neglect their health. As the screensaver

on my VA computer says 'for the fallen veteran, for his widow and for his orphan' I found tremendous satisfaction in serving them.

**References**

[http://www.wrongdiagnosis.com/c/congestive\\_heart\\_failure/stats.htm](http://www.wrongdiagnosis.com/c/congestive_heart_failure/stats.htm)

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**Topic: Dental Care**

**Title: Dental Care for the Homeless**

**By Donna Soleman**

**Public Health Significance**

The purpose of my practicum was to learn how to replicate a community dental clinic for the homeless population in another city. This is an important public health concern because the homeless population is a diverse group, which often has complex dental health care needs, limited access to care, and underutilization of dental services. San Antonio has several facilities where homeless individuals can receive dental services, and it is important to learn how these facilities are set up, so that in the future we can replicate these clinics in other cities where the homeless population may be underserved.

**Approach**

Providing dental services to the homeless population can be accomplished in a number of ways, including through a clinic in the community, or a clinic within a shelter or transitional living center. The method we chose to investigate our questions included site visits, observation and interviews with directors at facilities that provide services for the homeless population. The facilities visited during my practicum included Haven for Hope, the Transitional Living Center on Blanco, The Children's Shelter and Seton Homes.

**Findings**

There are complex considerations when planning a clinic facility geared to provide dental services to the homeless population, including both administrative and clinical aspects.

Some of the facilities like the Children's Shelter and the Transitional Living Center on Blanco have a small clinic setting with one chair within their facility, where residents can be treated as needed. Haven for Hope, on the other hand, has a much larger clinic setting. During the interviews there was an emphasis in the discussion of administrative topics including funding, facility cost, budget, staffing, quality control, program evaluation, defining the population, and computer systems used for tracking patients. The findings were extensive, and complex.

## **Essential Services of Public Health**

The focus of my project was to learn how to replicate a community dental clinic, modeled after Haven for Hope, in order to “Link” the homeless population to needed dental health care services, otherwise unavailable. The focus was to learn what it takes to create a clinic that could provide access to care for a population that may otherwise have difficulty meeting their dental health care needs.

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**Topic: Dental Care**

**Title: Utilization of Dental Care Services Among Insured (Children’s Medicaid and SCHIP) and Uninsured but Eligible Children**

**By Lisa Vu**

### **Public Health Significance**

Dental caries continues to be prevalent among children occurring disproportionately higher in certain racial/ethnic groups, and children from families of lower socioeconomic status. To facilitate access to dental services, Texas’ uninsured, low-income children are eligible to obtain public health insurance through Medicaid or the Health Insurance Program (CHIP). Studies have demonstrated that SCHIP enrollees were more likely to have visited a dentist within the past year relative to their eligible but uninsured counterparts. However, this was not the case for Medicaid recipients. Gaps in dental service use demonstrate that financial assistance from public insurance programs alone may not be enough to improve access to dental care. Many focus groups have identified common barriers associated with the underutilization of oral health services among the insured. However it is important to design a research method that would provide a more quantitative approach to describing this relationship so that barriers that are most relevant for a specific population can be identified and prioritized. The Alief Independent School District represents a vulnerable population that may carry a large disease burden. This study was designed to determine if there is a significant difference in the utilization of dental care services between insured (Medicaid and SCHIP) and uninsured but eligible 3<sup>rd</sup> grade children in the Alief Independent School District (AISD).

### **Approach**

Outcome and exposure variables, methodologies, and a statistical analysis approach were adopted from prior studies which assessed the utilization of dental care services among uninsured (Medicaid and SCHIP) and uninsured but eligible children. Questions for the survey instrument were adopted or slightly modified from the National Health and Nutrition Examination Survey (NHANES), Basic Screenings Survey (BSS), and other surveys.

**Findings**

The primary outcome variable will be the utilization of routine or non-emergent dental services within a 12 month period while the exposure variable will be receipt of Medicaid or SCHIP. An odds ratio will measure of association between insurance status, and the (1) utilization of dental services and (2) other oral health indicators outlined in the BBS model. The association of barriers with the underutilization of dental service use among Medicaid and SCHIP insured children will also be reported. The methodology for the oral health screening will be adopted from the BSS model outlined by the Association of State and Territorial Dental Directors. The screening survey will be cross sectional and descriptive in design and is intended for monitoring dental caries experience, the presence of dental sealants, and the urgency of need for dental care.

The survey instrument will be randomly distributed by mail to parents of 3<sup>rd</sup> grade children who attend public schools in the AISD. It will cover a range of topics including social, economic, and demographic information, the child’s insurance status, utilization of dental services, and common barriers associated with the underutilization of dental care services.

**Essential Services of Public Health**

The project primarily addressed (1) monitoring oral health status and (2) evaluating the efficacy of public health insurance programs for a local population.

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**Topic: Electronic Medical Records**

**Title: Patient Perspective on Clinically Assessed Successful Integration of Electronic Medical Records**

**By Larry D. Mitnaul, Jr., M.S.**

**Purpose:**

Electronic medical records (EMR) have been touted as an integral component in transforming primary care in the US. While studies have focused on the application of health information technology in prescribing, patient-tracking, and cost efficiencies in hospital settings little has been studied on the effect of EMR on the patient-centered experience in health care. Recent articles highlight, anecdotally, the obstacles and successes encountered by private practices implementing EMR (TMA, etc).

This study analyses data from the first National Demonstration Project (NDP) of the Patient-Centered Medical Home. Clinical assessment before the project, clinical staff surveys at three iterations and patient surveys at three iterations throughout the 28-month study were used. We hypothesized that a correlation exists between clinic appraisal of EMR integration and patient perception of quality care.

**Methods:**

In a previous paper, the methodology for clinic selection, survey distribution and project design were described (Methods paper not yet published). Clinic data from the baseline survey revealed certain clinics with EMR capability before the study. Of these clinics, the survey captured which practices had changed their software within the year. Clinical and patient surveys were collected at 0, 9 months and 28 months into the study. Two questions from the clinical staff survey and two questions from the patient outcome survey were selected as most representative of the relationship between the level of EMR integration from the clinic perspective and patient observation of EMR utility in their clinical experience.

All correlation statistical analysis was done using SPSS 15 and SPSS 17 statistics software using Scatterplot and linear regression. Clinic-level staff and patient aggregated mean scores were calculated from the survey responses at collection dates of 0, 9 and 28 months. A clinic-level percentage for factor PCPE was also calculated for each collection date.

**Findings:**

A strong positive correlation was seen between staff appraisal of successful EMR integration and how helpful patients found computer connections in practices throughout the NDP study (R squared = 0.28, 28-months). A similar positive correlation was seen between successful EMR integration by clinic assessment and the doctor-patient relationship as perceived by patients (R squared = 0.245, 28-months). Clinics that perceived EMR as a hindrance to the patient-physician relationship positively correlated with the patient perceptions of interference in the patient-physician relationship and computer connections being unhelpful (R square values = 0.1.73, 0.112 at 28 months respectively).

Clinics with established EMR before the NDP had a stronger correlation (R squared = 0.301, 28 months) between the positive patient perception of computer helpfulness and clinically perceived successful integration of EMR than those practices that gained EMR during the study (R squared = 0.158, 28 months).

Clinics with established EMR system before the NDP also had a strong correlation to the patient perception of EMR helpfulness to the physician-patient relationship (R squared = 0.324, at 28 months) and clinical assessment of successful integration of EMR at each iteration. However, practices that developed EMR capability during the NDP showed no correlation with this patient perception (R squared = 0.002).

**Conclusion:**

Clinic and patient perspectives are commensurate in relationship to the effect of EMR on the patient-physician relationship. Additionally, clinics that developed EMR capacity during the study did not show strong association between clinically-assessed EMR helpfulness and helpfulness from the patients' perspective.

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**Topic: Environment and Physical Activity**

**Title: Healthy Mueller Project – Can certain features of the built environment promote physical activity among residents of the Mueller Development?**

**By Emily Neusel**

**Public Health Significance**

During my practicum, I investigated the affect of the built environment on the physical activity levels of residents in the Mueller Development in Austin, TX. This is an increasingly important area of public health, as people pay more attention to the interaction between environmental factors and health behaviors. Research has shown that certain features of the neighborhood can promote or discourage physical activity among residents, i.e. street connectivity, destination proximity, mixed land use, population density, presence of sidewalks and bike lanes, and the presence of green spaces. Many of these features were included in the design of the Mueller Development, which is a live/work/play community that is in the early stages of development. The project I worked on sought to determine if current residents increased their physical activity after moving to Mueller, and if so, which environmental factors may have contributed to the increase.

**Approach**

In order to gain an understanding of the effect of the built environment on physical activity levels, I assisted with several phases of the Healthy Mueller Project. I gathered survey information and entered it into a data analysis program. I also performed audits of the neighborhoods surrounding the Mueller Development. During the audits, another student and I visited the neighborhoods and collected information on the presence (or lack of) features that may influence physical activity, such as sidewalks, bike lanes, traffic calming devices, and speed limit signs. Audits were also performed within the Mueller Development to determine how it compared to surrounding areas.

Another aspect of my practicum was performing preliminary research for a Health Impact Assessment (HIA) that may be performed at Mueller in the near future. The purpose of an HIA is to provide decision-makers with information on the potential health impacts of a proposed policy or project. My research consisted of gathering information on the HIA process, as well as literature reviews on certain features of the neighborhood environment that promote physical activity.

**Findings**

My final products were the results of the neighborhood audits, a written report on HIA, and a presentation of my findings. The information that was collected during the audits will be analyzed at a later date. Although the Mueller survey data has not yet been analyzed, we hope that it will support the hypothesis that the community’s design has encouraged residents to engage in more physical activity. In the research that I

performed, I gained a strong understanding of the HIA process. My final report will serve as a starting point for the formal HIA, which will hopefully be carried out later this year. I found that there is strong evidence suggesting that certain features of the neighborhood have the potential to promote physical activity, and the Mueller Development is one example of a design that has included many of these features.

### **Essential Services of Public Health**

This project primarily addressed the essential service of promoting and encouraging healthy behaviors, specifically physical activity. The project accomplished this by expanding our understanding of how the built environment can affect physical activity behaviors.

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### **Topic: Evaluation**

### **Title: More than Just an Evaluation**

### **By Ayika Emenike**

There may be many ways to solve a problem but when resources are limited and time is of the essence the most efficient ways are priceless. We should constantly review our public health intervention because it is during this evaluation process that we can identify problems, modify approaches and make improvements on selected methods. This will improve the quality of our public health interventions especially focusing our ever limited resources to make more impact. It is imperative that we do not compromise the quality of the public health intervention for the sake of result, even if we do not get to see the end of our goals, a job well done sets a solid foundation for the next person to build on thereof leading to a more sustained effort.

First of all I had to get a background on the project we were going to be evaluating. I carried out an extensive literature review of previous early child education programs to see what worked in terms of program delivery methods, training parents of preschool children in an underserved community criticisms and challenges. I also had talked with experts in the field. I was part of our team that took several visits into the community the Collaborative for Children College Bound Beginning at Birth project was serving and this was very insightful as it gave me a firsthand idea of the characteristic of people receiving the intervention, the challenges the organizations faced or anticipated and a firsthand look of ways things could be improved. This gives the evaluation process a more practical approach because when we interviewed some of the community members it really helped to understand what their real needs were as opposed to imposing logic on them or gathering a bunch of information on paper and sitting down in the office writing a report.

As a public health program evaluator your bottom line should be more than just a report; try to look at the society in terms of helping to improve it; really study the

process in order to help make practical recommendation that can be applied to improving the public health intervention.

You cannot really reinvent the wheel when it comes to certain public health issues like early child education and family support. Our project had some adaptations from a very successful early child education program that had been working for many years, the Harlem Children’s Zone (HCZ).

My community preceptor who is very good in the field of evaluation guided me through the process of identifying evaluation tools from scientific literature, available studies, and methods of developing assessment tools. For instance in order to see how the child development teaching sessions affect parents perceptions we had to modify an existing version of as assessment tool. We pilot tested the tool on a small subset since we were working with participants from a different background.

The evaluation process is ongoing; the team will continue to work with the project closely, reviewing and making recommendations with frequent site visits to monitor activities of the project.

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**Topic: Family Health History**

**Title: Family Health History Discussion in Patient-Provider Encounters**

**By Nina Shiang**

**Public Health Significance**

Ascertaining the family health history (FHH) may provide insight on genetic and environmental susceptibilities specific to a variety of chronic diseases, including type II diabetes mellitus. However, attaining a FHH is often underestimated by most clinicians. Promoting the discussion of the FHH is a necessary tool in preventative medicine and should be applied more stringently in the clinical setting. A number of barriers that discourages the discussion of FHH in patient-provider encounters include lack of time, lack of patient knowledge on FHH, lack of provider knowledge on genetic/predisposition topics, etc. This study details the lack thereof, and inadequacies of the discussion of FHH in a clinical setting. Additionally, this study can provide information on the types of content commonly discussed when FHH is discussed.

**Approach**

Our analysis focused on describing conversation topics (patient/provider education, patient/provider response, and self-care management of type II diabetes mellitus) most frequently encountered when discussion of FHH occurred during patients' visits at the Audie L. Murphy Memorial Veterans Hospital (VHA) in San Antonio, TX. The average age of the patient population was 68 and included 34 males and 2 females. Of the six providers available 3 were Asian, 2 were Caucasian, and 1 was Hispanic.

Content analyses on the basis of FHH were coded and compared across encounters; coding was based on a developed codebook. Quantitative analyses were conducted with the use of STATA 10 and qualitative analyses were conducted with the use of NVIVO 8. To establish inter-rater reliability in the qualitative analyses section, 20 encounters were compared and the kappa coefficient was estimated and reported.

**Findings**

My final product was a paper reviewing literature on FHH topics and its relation to type II diabetes mellitus and self-care management. Additionally, a description of the present study was included. We found that only 16 encounters (43%) of the total 37 total encounters discussed topics of FHH. Only 8 encounters (21.6%) had more than 1 encounter/follow-up visit with discussion on FHH and all had minimal to moderate discussion of the topic. The provider most frequently initiated discussion on FHH (87%) and competent discussion most commonly occurred when counseling on the topic of cancer arose. Patient response/education on extended family members most frequently yielded minimal discussion of FHH (100%). Additionally, the most frequent topic of self-care management with respect to family health history was diet and exercise. Based on these preliminary results, we can conclude that discussion on FHH prompted by both patient and provider has been inadequate and minimal. Further research is necessary to explore the inadequacies of the FHH and perhaps, to design intervention strategies to best facilitate FHH discussion in the clinical setting.

**Essential Services of Public Health**

This project primarily addressed a major essential service of public health – to evaluate the effectiveness, accessibility, and quality of personal and population-based health services. Evaluation of patient-provider encounters and a necessary prevention tool like the family health history is necessary in establishing positive health outcomes for chronically ill patients.

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**Topic: Food-Borne Illness**

**Title: Improvement to Early Identification of Food-Borne Illness Outbreaks**

**By Sarah Calkins**

**Public Health Significance**

Food-borne illness is a significant stressor on the health care system and results in a significant portion of health care spending in the United States. Despite major improvements to sanitation and hygiene in the past century, it remains important to identify early outbreaks of food-borne illness.

### **Approach**

The way that I approached the improvement of the current identification system was to create a set of excel sheets that would allow for earlier identification of outbreaks in the hierarchy of information in the current system. Typically outbreaks go through a system of notifications in the state and United States, which result in delay of outbreak identification. By creating a system in which the central office of the Texas Department of State Health Services is notified earlier, the outbreak can be controlled earlier. I approached this problem by creating a simple set of excel sheets that calculate the presence of particular exposures that have resulted in illness.

### **Findings**

My final product is a set of excel sheets for specific strains of E. coli and Salmonella outbreaks in the months of April through July, 2009 in Texas. The excel sheets contain food exposure information for the individuals that were positively identified with the infection. The sheets calculate the portion of individuals exposed to certain foods, restaurants, and animals. Unfortunately there wasn't enough data in the few months that I attempted this improvement, however with time it might prove useful.

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### **Topic: Global Health Council**

### **Title: Progression at the Global Health Council**

**By Sarah Michel**

### **Public Health Significance**

The Global Health Council works with on the ground member organizations-from implementers to advocates in order to promote awareness and policy change for significant issues in global health. Five topics are at the forefront of the council, health systems, HIV/AIDs, Women's Health, Child Health and infectious diseases.

### **Approach**

Working in the Policy & Communications department, we worked to bring research and newfound information from organizations on the ground to decision-makers who influence policy concerning global health issues. From press releases, to policy dinners bringing speakers such as Jack Lu to address and receive questions from civil society on the ground, or writing Op-Ed pieces for various members of Congress-we basically worked to draw press and power to the issues at hand.

### **Findings**

The bottom line is that in trying to affect change from the top down with policy-makers I have come to realize 'change' is just as slow as it was when I worked bottom up in a grassroots fashion. In order to bring about change and improvements in health worldwide, there needs to be an overall shift in the mindsets of everyone. It is also much harder to focus on global health issues when the nation is focusing on domestic

healthcare issues in the time of an economic downturn. It's much harder to draw focus to those who are hurting overseas, when individuals are hurting at home.

### **Essential Services of Public Health**

To bring awareness to and eventually greater funding and focus Global Health Issues.

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### **Topic: Health Disparities**

### **Title: Community Dialogue Initiative - Alliance for African American Health in Central Texas**

**By Winston Jackson**

### **Public Health Significance**

Confronting racial and ethnic disparities in health is a high priority for the National Institutes of Health according to the 2002 Institute of Medicine report *Unequal Treatment*. Disparities have also been documented in both access and quality of care for African Americans. Disparities remain even after controlling for income, insurance status and other factors. Mortality and disease rates from cancer, heart disease, stroke, HIV and diabetes are significantly higher among African Americans in Travis County. Evidence suggests that African Americans in Travis County bear a greater burden of disease, death and disability across a number of health categories.

### **Approach**

This project used a participatory research model to investigate social and behavioral determinants of health among African Americans in Travis County. The study area was a single zip code in Travis County. Data was collected including participants' age, income, education level and occupation. Participants were surveyed about media use habits including radio, television and print media. Participants were interviewed about health issues including prevention, nutrition, exercise as well as health behaviors and health practices. Community members participated in discussions about the role of family health history, protective health factors and preventive care. Participants also discussed health habits with respect to exercise, nutrition, substance use, mental health and healthcare utilization. Participants identified positive influences, factors that promote and facilitate getting preventive care, as well as perceived barriers to care. These findings were documented and analyzed for content, then summarized in a report for the organization's use.

### **Findings**

Lifestyle factors were important; most participants believed diet and exercise played a significant role in overall health. Participants believed that economic factors and lack of insurance limited access and use of preventive care of among African Americans. Nearly half of participants mentioned that "fear of knowing" about one's health status was a barrier to seeking preventive care. Participants recommended mobile prevention

services at churches and homes. Convenience and access were also mentioned as ways to promote preventive care. Stigma was cited as a perceived barrier to mental health and counseling. Participants also identified a perceived lack of culturally-sensitive services as a potential barrier to care. Finally, community leaders and health role models were identified and invited to participate in interviews as well.

### **Essential Services of Public Health**

This project addressed the essential public health services of education and mobilization. This project was one segment in a community organization effort designed to impact and improve the health of African Americans in Austin/Travis County. The community dialogues served as a means to engage and educate residents on the health issues that impact the community. Dialogues and interviews identified community members' priorities and important resources for mobilizing an effort to address health disparities in Austin.

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### **Topic: Health Reform and Employer Health Programs**

#### **Title: Reform Proposals and their Impact on Employer Sponsored Health Plans**

**By Sirine Jazi**

#### **Practicum Overview**

This year has been an exciting year for healthcare reform, that's one of the biggest topics being debated in Washington. My practicum consisted of analyzing how current Public Health reform proposals may impact employer sponsored health plans.

#### **Public Health Significance**

The significance of healthcare reform for Public Health is immense. Most Americans obtain insurance via their employer. That's why employer sponsored plans are of great importance. If healthcare reform hinders such plans or the companies that offer them, the impact on public health risks being of the great magnitude. Employers are already having a very difficult time containing their costs in terms of providing healthcare coverage. That's why it's important to identify how employer plans will be impacted in the inevitable reform we are about to witness this year.

#### **Approach**

The employer perspective of healthcare reform is not as evident in the media as other stakeholders in the industry. That's why I had to go beyond looking in the news for the employer's perspective. Through the company that hosted my practicum, I approached a few large clients - self funded employers - and asked if they could provide me with information on their efforts and participation in the current healthcare reform initiatives. The result was overwhelmingly helpful. I was provided with many venues of information. They included - consultants for self funded employers offering free

webinars and newsletters, employer interest groups sites and PowerPoint presentations, news articles, etc.

**Findings**

My final product consisted of two deliverables: a written PowerPoint presentation on employer sponsored and their role in healthcare reform and second, a paper answering the following two questions:

1. Select two policy reform proposals and describe the impact on self funded employers as well as the impact on employees/ community (economic, social, and political).
2. Discuss the future of self funded employer health plans - including potential changes and challenges.

**Essential Services of Public Health**

I would say that my practicum primarily related to the following essential public health service: Develop policies and plans that support individual and community health efforts. The current debate on healthcare reform is very important as it shapes what will be “policy” perhaps as early as by the end of this year. Employer sponsored health plans impact a big proportion of covered Americans so it’s essential that we the employer’s perspective is analyzed when developing new policies and plans.

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**Topic: Healthcare at MD Anderson**

**Title: M.D. Anderson Services Corporation and Physicians Network Summer Externship**

**By John Reilly**

**Public Health Significance**

It is evident that there are many issues with the healthcare system, and what direction it should proceed is a highly debated topic. Several problems have occurred to include a lack of funding for those in need, physician reimbursement, access to care, and quality of care.

Health is one the most basic aspects of life. Access to the best care is ideal for optimum health, or, if one is sick, access to the best care in order to restore one’s health is very important.

The goal of M.D. Anderson Services Corporation (MDASC) and Physicians Network (MDAPN) is to help provide the highest quality of care to patients around the United States and the World. This is accomplished through creating host and other affiliate sites that must meet a rigorous standard to ensure that the decisions of care provided to patients is on par with care that would be received at M.D. Anderson Cancer Center in Houston (MDACC). MDASC and MDAPN provide the business structure to review the hospitals and physicians that participate in this program. All told, there are

12 host sites and several more satellite clinics that carry the M.D. Anderson name and are managed by MDASC and MDAPN.

**Approach**

During the time spent there, I worked for Mr. Bill Hyslop, President and CEO of MDASC and MDAPN and his staff. Along with the medical directors and support teams, I met with the various host sites reviewing their progress in their ability to treat patients and their quality of clinical treatment for their patients. MDASC and MDAPN provide a support team for their hosts site, which allows them to contact physicians to consult on how to proceed with a treatment after presentation. There are weekly meetings that I attended that host physicians present these cases to a panel of MDACC physicians in what is termed Multidisciplinary Treatment Planning. Additionally, I was able to participate in doing due diligence on several hospitals that were potential candidates for becoming a host affiliate.

**Findings**

The goal of this project was to be immersed in the administrative side of Health Care, specifically, to observe the process of assessment due diligence and to have a comprehensive knowledge of quality management for both patients’ care and physicians’ decisions. MDASC and MDAPN perform thorough and rigorous reviews of candidate hospitals, current host sites, and physicians. The high demand allows for the best quality of care for patients that will, hopefully, one day, eradicate cancer.

**Essential Services of Public Health**

Arguably, the most essential service of public health that was addressed was the care of cancer patients. This was accomplished in several ways: first, it is ensured that facilities and physicians met standard qualifications and associate care emulated the care that would be provided at MDACC; second, MDAPN has an agreement with several businesses that gives employees the opportunity for preventive care and a MDAPN representative will personally escort patients to appointments and provide education for them; third, and maybe most important, it has created better and more access for patients to receive best practice cancer treatments that are performed in the same sequence and style as performed at MDACC.

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**Topic: Hepatitis B**

**Title: Pharmacotherapy of Chronic Hepatitis B in Adults: Focus on Tenofovir Disoproxil Fumarate**

**By Kanan Garg**

**Public Health Significance**

Hepatitis B is a global epidemic with over 350 million people infected with the virus. It is one of top ten causes of death worldwide. Transmission of HBV is through

multiple routes (mother to child, sexual, percutaneous). However, all routes require high levels of virus. Using the example of HIV, we know that HIV transmission can be decreased by reducing HIV viral load. For example, just giving pregnant mothers HIV meds had eradicated mother to child transmission of HIV.

Hepatitis B treatment reduced HBV viral load. Thus it would affect transmission of HBV. Tenofovir is one of the new drugs available for HBV treatment. It is very potent and has the additional benefit of reducing HBV viral load even if you have virus that is resistant to traditional therapy (lamivudine).

So the public health importance is that HBV large public health problem and liver disease progression is a leading cause of death. By understanding how to better treat HBV, we can make an impact on mortality due to this infection. Furthermore, it may have the added benefit of reduction transmission by just reducing HBV viral load.

### **Approach**

I met with my advisor Dr Jain, we agreed to the timeline and the strategy going forward. Initially I had to do a lot of literature review in the library and gathered many articles on the subject, some old and new. The intent was to have an understanding of the subject since it was very new to me and to do a historical literature review on the information that has been published in the past with regard to the research on the drugs for Hepatitis B.

### **Findings**

I had several meetings and sessions with the Cindy Zoellner, the pharmacologist who also coauthored the paper, and with Dr Jain in her office. We discussed the outline for the paper that needed to be written for publication and what the sections, paragraphs would consist of. The work and research was then divided up between us. I did my reading and writing of the draft and a couple of rounds of corrections with Dr Jain. The final article or paper was then sent to the publisher by Dr Jain for publishing.

### **Public Health Significance**

The two main services of my project are Hepatitis B patient education and awareness about the different treatments and drugs that are currently available. Since the paper discusses the latest findings and research data from the clinical trials, this is important to Hepatitis B patients in informing them of the drug options that are available to them, it also tells them of the side effects and other important findings in the field of Hepatitis B and HIV/AIDS research. The article is an update and summary on all literature that has been published in the past on the drugs for Hepatitis B, which is very important for healthcare advocates, researchers, doctors, students and Hepatitis B patients.

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**Topic: HIV/AIDS Testing**

**Title: Voluntary Counseling and Testing in the Western Cape:  
Addressing the psychosocial needs of a community still struggling  
with the stigma and misconceptions of HIV/AIDS**

**By Ashley McComb**

HIV/AIDS in the Western Cape of South Africa is still a heavy burden on the social, political, and economical environment of many members of the community. Specifically in Cape Town, the need for social programs empowering local members to counsel their peers on the importance of getting tested for HIV is an essential component to the city's goal of reducing the incidence and prevalence of HIV/AIDS. Voluntary Counseling and Testing (VCT) is but one public health program implemented in Cape Town to encourage individuals to get tested for HIV. Pre and post test counseling has been shown to reduce anger and the overall feeling of doom associated with knowing one is HIV+, increase antiretroviral (ARV) therapy adherence, and has increased the number of South Africans getting tested for HIV. Counselors at the primary antiretroviral (ARV) clinics and secondary hospitals throughout Cape Town teach patients about the HIV testing process, help them to identify barriers to testing, address feelings of anxiety toward knowing their HIV status, as well as clarify misconceptions about HIV/AIDS. Prior to HIV testing, VCT counselors provide a pre-testing counseling session in which they address the patient's reasons for getting tested, their understanding of HIV, how they would feel if they found out they were HIV positive, as well as the importance of taking ARV medications if they do receive a positive HIV test. Once the results of the test are disclosed to the patient, post-test counseling occurs by the VCT counselor to ensure the patient understands safe sex practices and the importance of regularly getting tested for HIV. If the patient tests positive for HIV, the VCT counselor also addresses immediate feelings of knowing they are HIV+ and further discusses the follow up appointment with the doctor to find out their CD4 count and ARV regimen. VCT counseling provides jobs to the community as well as addresses an important psychosocial need of the Cape Town community. At GF Jooste, a secondary hospital located within one of the roughest areas of Cape Town, the VCT program serves as the front line to address an increasing incidence of HIV in Cape Town, and provides support to a population still coping with the stigma associated with HIV/AIDS. The hope is that by empowering community leaders to work with those unsure of their HIV status, patients will become more educated about the realities of HIV in their community and will eventually reduce the amount of individuals unsure of their HIV status.

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**Topic: HPV Vaccine**

**Title: Investigating Mothers' Exposure and Reaction to Media**

**Messages About the HPV vaccine**

**By Noor Malik**

**Public Health Significance**

Human papillomavirus (HPV) is a virus that infects over 6 million people each year in the United States. Infection can result in genital warts, cervical cancer, vulvar cancer, vaginal and other female genital cancers, penile and other male genital cancers, anal cancer, and oropharyngeal cancer. There is no cure for HPV infection, making prevention a top priority. In 2006, a vaccine called Gardasil was approved for use in females ages 9 to 26 to prevent infection from HPV types 6, 11, 16, and 18. Reception and uptake of the vaccine has varied, as many are concerned with side effects/safety of the vaccine; others worry that vaccine uptake will result in promiscuous behavior. However, as 20 million Americans are currently infected with the virus, and numbers continue to rise, it is of utmost importance to encourage uptake of the vaccine through education to help save lives. This study aimed at studying mothers' exposure and reaction to media messages about the HPV vaccine in the Dallas/Fort Worth so that relevant educational materials may be developed.

**Approach**

I joined a team of research assistants gathering information from women in University of Texas Southwestern (UTSW) and Parkland family clinics. We approached women and asked if they were interested in filling out a survey regarding the HPV vaccine and the media; those who were interested were asked a series of questions to determine eligibility to participate in the study (if they had a daughter between the ages of 8 and 22). After surveys were completed, women were given study contact information, HPV vaccine information, and surveys were entered into a database that will be analyzed statistically at a later date (when more surveys are collected). The information gathered from the surveys will allow the study investigators to determine what women in the Dallas/Fort Worth area think about the HPV vaccine.

**Findings**

The final product for my practicum experience was a report on lessons learned regarding recruitment at UTSW and Parkland family clinics, accompanied by a presentation. As surveys and data are still being collected, conclusive information has not yet been reported. However, a few preliminary statistical analyses on the data gathered have shown that most mothers have heard of the HPV vaccine (86%), and among those who had heard of the vaccine but did not have their daughters vaccinated, most frequently cited reasons were not knowing enough about the vaccine (41%) and concerns about safety and side effects (16%). It was also found that greater exposure to media messages about the HPV vaccine was associated with positive intentions for

vaccination, thus showing that the media has significant impacts on vaccination behavior.

### **Essential Services of Public Health**

This practicum experience aimed to inform, educate, and empower people regarding HPV and the HPV vaccine. By evaluating HPV vaccine knowledge people have, we will be able to develop educational materials and resources that address specific and relevant concerns people have. Also, providing information sheets from the Centers for Disease Control and Prevention (CDC) about the HPV vaccine will help educate people on the subject.

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**Topic: HPV Vaccine**

**Title: HPV Vaccine and Media Study**

**By Zoveen Siddiqi**

### **Public Health Significance**

The human papilloma Virus (HPV) is a common sexually transmitted virus. The types 16 and 18 are the cause of 70% of cervical cancer incidents in women in US. The HPV vaccine has been developed to prevent the spread of HPV disease and in turn cervical cancer in women. Currently it is available for girls aged 8-26 years who are not sexually active. It is hoped that with the use of this vaccine and regular pap smear test in women the incidence of cervical cancer can be lowered. It will reduce the burden of disease that is placed on society with the untimely death of a woman.

### **Approach**

The purpose of the HPV and media study is to gauge the effect that media has had on the thinking of mothers with young daughters. This is being studied by asking mothers who have daughters in the age range of 8-22 yrs to fill out a carefully constructed survey. The survey asks about the type of media they are exposed to such as books, TV, news, websites, internet etc. It also asks about what they might have heard about the vaccine and what views and opinion they have on the subject.

The procedure undertaken to fulfill this task, was to have research assistants approach women who came for treatment in the family medicine clinic of Parkland hospital and UT Southwestern. Those who were eligible were asked to fill out the survey and were given a small incentive such as a tote bag or UT logo water bottle as a show of appreciation for filling out the survey.

The data collected in this way will be analyzed statistically.

### **Findings**

My final product is a manual that I developed to train future research assistants on how to recruit participants for a study. So far the preliminary data shows that most people have heard about the vaccine through TV or their doctor. It is yet to be analyzed if they are in favor of the vaccine or not.

### **Essential Services of Public Health**

This project primarily addresses the need to educate the public about the vaccine. It strives to find answers and solutions on how best to communicate the importance of the vaccine to the target population. It also addresses the need of prevention of a disease.

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### **Topic: Human Trafficking**

### **Title: Houston Rescue and Restore Coalition Summer Practicum 2009**

**By Audra Moore**

### **Public Health Significance**

Houston Rescue and Restore Coalition (HRRC) is a grassroots organization in that aims to increase awareness about human trafficking and identification of victims in the Greater Houston Metropolitan Area. Estimates suggest that 12.3 million people are working under forced labor by means of force, fraud or coercion. Current research estimates that anywhere from 14,500 to 17,500 persons are trafficked into the U.S. annually (Free the Slaves & Human Rights Center, 2004). Working toward eradication is a worthy effort in that it would free millions of humans from slavery, mostly women and children, as well as uphold basic human rights.

### **Approach**

During the practicum I primarily focused on victim identification by healthcare professionals. I gained a greater understanding of human trafficking in general, specifically in Houston, and about the role healthcare professionals hold in identifying victims. My expanded understanding was reached by regularly attending office meetings at HRRC, special interest meeting in the Houston area that relate to human trafficking, as well as in depth research on the topic. My research included a background study on human trafficking globally and within the US as well as a brief literature review.

### **Findings**

The final product for the summer practicum experience is a research proposal that describes the background of this issue, why it pertains to public health, the role that healthcare professional's play in identification of victims, and proposes that appropriate training developed through intervention mapping methodology will

improve efforts of victim identification in the hospital/clinic setting. However my culminating experience is practice based therefore I will continue to work with HRRC through an extended practicum into the fall semester of 2009. The end result of this will be my thesis project which focuses on training health professionals on how to identify and report a victim of human trafficking.

### **Essential Services of Public Health**

I believe that my practicum served several forms of essential services of public health. Most importantly it served to inform educate and empower and develop policies and plans.

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### **Topic: Human Trafficking**

### **Title: Houston Rescue and Restore Coalition Summer 2009 Public Health Practicum**

**By Christie S. W. Phillips**

### **Public Health Significance**

Human trafficking is a public health and human rights issue because it negatively impacts the physical and mental health of an estimated 27 million people worldwide (Free the Slaves, 2009). Human trafficking, also called “modern day slavery”, equates to people being bought and sold, to people being forced, coerced and deceived to become and to stay enslaved (USDHHS, 2009). Houston Rescue and Restore Coalition (HRRC) is a community-based coalition and non-profit organization that focuses on raising awareness among the general public and certain professionals about human trafficking within the greater Houston metropolitan area. As a public health intern, I am currently working with staff at HRRC to conduct a needs assessment regarding human trafficking in the area this coalition serves.

### **Approach**

Together with the Executive Director of HRRC, I am designing a survey that will Allow HRRC to assess the level of knowledge about human trafficking among key organizations and agencies that have the potential of coming into contact with human trafficking victims and/or perpetrators. This survey will also aim to identify organizations that provide services to human trafficking victims and to assess the types of services and resources offered to victims of human trafficking by the organizations and agencies that participate in the survey.

### **Findings**

The final product that I will offer to HRRC will be the data that we collect and analyze from the survey we design. Human trafficking is an issue that often times seems to be misunderstood or not appropriately defined. HRRC seems to want to know how individuals that work in important organizations and agencies understand human

trafficking and to determine whether or not these people are likely or not to identify human trafficking situations (including victims and perpetrators). Our main objective seems to be to effectively target HRRC's efforts to raise awareness about human trafficking within the greater Houston metro area.

### Essential Services of Public Health

The primary goal of my work with HRRC staff and member organizations is to assist them in increasing or ensuring the effectiveness of their efforts in the community they serve. HRRC's primary goal is to eliminate human trafficking in the greater Houston metro area and I am working to help them to do so. The essential service of public health that I am attempting to provide to HRRC is one of evaluation. Overall, HRRC staff and I are working to evaluate capacity within the greater Houston metropolitan area to eliminate human trafficking.

### References

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**Topic: Immunization**

**Title:** Advisory Committee on Immunization Practices (ACIP)

**By** Varsha Vakil

Vaccines are one of the best and most important breakthroughs achieved by researchers and are considered as one of the most efficient tools for the preventing diseases. With rapid progress in science and technology one may envision a cure or a relevant vaccine for almost all indomitable diseases. The Advisory Committee on Immunization Practices (ACIP) is the Centers for Disease Control (CDC) committee that **develops written recommendations** for the routine administration of vaccines to children and adults in the U.S. civilian population. The ACIP is the only entity in the federal government that makes such recommendations. With the recent economic crisis in the country, pressure on federal and state budget is recognized. Implementation of economic analysis on a regular basis for new vaccines will be a valuable aid to ACIP in its decision making policy.

Thorough understanding of the ACIP is a task that might take years of zealous work; this practicum provided an efficient peek at its overall working and vaccine consideration. Meeting with some of the prominent figures of the committee and attending the ACIP meeting proved fruitful. The most rewarding experience was to be present not only at the non-confidential but also the classified workgroups meetings.

Their meticulous study of the pros and cons of each situation was educational. Although economic perspective was not prioritized it was a requirement to be presented when introducing a new vaccine to the ACIP.

ACIP efficiently fulfills the core functions and the essential services. The two essential services demonstrated by the ACIP workgroups excellent performance is to diagnose and investigate health problems and hazards. And by its diligent work ethics the workgroups are capable of effectively guiding ACIP to expertly inform and educate people about the health issues. In addition ACIP gives recommendations to improve on a situation as well as build excellent communication to reach a large number of people. Its fulfillment of the core functions and the essential services are observed under various challenging public health situations, one such example presented at the meeting is given below.

Outbreak of Hepatitis B virus in diabetic patients at an assisted living community was studied. Mode of HBV transmission was found to be blood contamination from finger stick device used on multiple persons. Other modes were blood contamination of shared glucose testing meters and failure to change gloves. The workgroup established that the cause for the outbreak was poor implementation of infection control programs and activities in long term care facilities. CDC prevention strategies suggested by the ACIP hepatitis vaccines workgroups was to improve implementation and adherence of infection control recommendations. Also, development in technology and safety-engineered devices, and to assess the role of hepatitis B vaccine in prevention was suggested. Presently to fulfill its mission ACIP is primarily focused on achieving it. In future to optimize the use of limited resources the vision of its ingenious members might enable them to implement economic evaluations along with other deliberations on regular basis.

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**Topic: Impulse Noise**

**Title: Characterization of Impulse Noise Based on Common Parameters**

**By Eduardo J. Salazar-Vega**

Impulse noises have been an unresolved issue in environmental and occupational health. The main reason behind this is the fact that the effect of impulse noises is usually relegated because this noises are averaged over an 8-hour or 12-hour shift with common noise dosimeters; this is due basically to the very short duration of the noise. Commercially available noise dosimeters are not capable of measuring properly the variables that characterizes impulse noises. The purpose of this paper is to find a relationship between the common variables reported by those dosimeters that helps predict when an impulse noise is present. The methodology used in for this purpose was to develop a system capable of acquire real noise data that allows measure all the characteristics associated with impulse noise. This system consisted in an external

sound device (Creative EMU-2) with sampling rate up to 192KHZ, commercial sound software Adobe Audition 3.0 and Quest SoundPro. Lab tests were performed to proper calibration and tuning of the system. Currently we are in the phase of measurement in the field with known environmental impulse noises. The final product expected in this study is a combination of parameters that indicates whether or not is an impulse noise present.

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**Topic: Indoor Air Quality**

**Title: Survey Design for Assessment of Building Occupants’ Indoor Air Quality Expectation**

**By Ayela Selome**

**Public Health Significance**

There is a growing health concern associated with indoor air quality in recent years. Approximately, according to Environmental Protection Agency (EPA), 90% American’s life time is spent indoors. There is variation in the perception of indoor air quality among individuals. Building occupants come to a building with certain expectations or a pre-disposition of what the indoor air quality should be. If building occupants’ indoor air quality expectation is set unrealistically higher than what is achievable or recommended by ASHRAE, indoor air quality symptoms will persist even after air quality problems have been rectified. The aim of this study is to systematically design a survey questionnaire that can be used to measure building occupants’ indoor air quality expectations at the University of Texas Health Science Center-Houston and compare them to American Society of Heating, Refrigerating and Air-conditioning Engineers (ASHRAE) recommended comfort range. ASHRAE provides recommendations for basic indoor air quality parameters: temperature, relative humidity, carbon dioxide, carbon monoxide, and total suspended particulates (PM 10).

**Approach**

The questionnaire designed for this study has two sections. Section I consists of 7 questions that will be used to collect demographic and general information on study subjects. 5 of the 7 questions are adopted from the EPA Building Assessment Survey and Evaluation (BASE) study questionnaire. The author’s professional experience and the general principles for formulating questions recommended by Dr. Lu Ann Aday, an expert in the field of designing health surveys was used to carefully craft the other two questions (Aday and Cornelius 518). Section II consists of scales for each indoor air quality parameter indicating ASHRAE’s recommended range. For each parameter, study subjects are instructed to mark an “X” on the scale indicating the level they would expect in their workplace.

### **Findings**

This tool will be used to determine if building occupants' indoor air quality expectations are congruent with ASHRAE's standard. We believe there is a significant value in quantitatively measuring building occupants' indoor air quality expectation and compare it to what is determined to be acceptable indoor air level by ASHRAE. The outcome of this study may validate the need for implementing administrative interventions in order to effectively manage indoor air quality complaints.

A pilot experiment will be conducted using the survey with selected group of participants from University of Texas Health Science Center – Houston for further modification of the tool.

### **Essential Services of Public Health**

Which one or two essential services of public health did your project primarily address?

1. Population focus for analysis and Intervention
2. Epidemiology

This health study is developed to collect data on target population (UTHSC-H employees) for analysis and intervention for indoor air quality complaint.

### **Reference:**

Aday, Lu Ann, and Llewellyn J. Cornelius. Designing and Conducting Health Surveys: A Comprehensive Guide. 111 River Street, Hoboken, NJ 07030: John Wiley & Sons, Inc., 2006

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**Topic: Influenza**

**Title: H1N1 Outbreak Investigation: A Technological Response**

**By Aulasa J. Camerlin**

### **Public Health Significance**

In the summer of 2009, H1N1 influenza pandemic caught the attention of the world, eliciting fear over its potential global devastation. The public health community worked tirelessly to prevent an outcome similar to that of the 1918 influenza pandemic. My practicum was carried out at the Hidalgo and Cameron county health departments during the height of the epidemic in South Texas

### **Approach**

Our primary goals as responders were to investigate the outbreak, determine the epidemiology (incidence, attack rate, vulnerable populations, geocodes, and, in retrospect, dates at which incidence was highest and when incidence began to taper off), and mount an effective response to ensure that people were properly informed and protected, and that the outbreak was contained. As a volunteer for the county

health departments, I was part of a movement to centralize case reporting using online technology.

During the early stages of the outbreak, most case reports were either hand-carried or faxed to the health departments by reporting agencies; on occasion, telephone communication was used to obtain information. This data was then manually entered by volunteers into a centralized database at the county. Recognizing the possible problems associated with these methods, a UTHSC faculty member participating in the response recommended that we streamline the reporting process by utilizing an online service called “Survey Monkey” to collect, process, and export data collected from the various reporting agencies. Rather than filling in paper forms by hand and faxing them to the health departments, reporting agencies could perform this same action online, eliminating the need for data to be re-entered into the centralized database at the county. Using this rapid, real-time technology, we could quickly analyze data and produce figures daily containing epidemiological information that would keep the community informed as well as influence decisions made by the health department.

### **Findings**

A colleague and I learned the ins and outs of “Survey Monkey” and immediately introduced this resource to the Hidalgo County Health Department (others handled the Cameron County end). By demonstrating its ease of use and real-time benefits, we were able to convince the county to adopt this method of data collection and entry, thereby freeing up the valuable time of their data entry volunteers (mostly nurses), and making the reporting process more efficient.

### **Essential Services of Public Health**

Our team was able to contribute to the emergency response by assisting with timely data entry and analysis.

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**Topic: Influenza**

**Title: A Review of Vaccination Policies, Practices and Procedures in Long Term Care Facilities**

**By Leslie A. Platz**

### **Public Health Significance**

Influenza is an acute respiratory disease caused by influenza type A or B viruses which accounts for approximately 36,000 lives each year (CDC, 2009). Additionally, over 90% of these influenza-associated excess deaths affect persons aged 65 years and older; many of which reside within long-term care facilities (CDC, 2009). Because elderly individuals are at higher risk for serious flu complications, it is imperative for these populations to be properly treated or protected from influenza each year (CDC, 2009). Fortunately, when vaccine and epidemic strains of the influenza virus are well matched,

achieving high vaccination rates among persons living in closed settings is important to reduce the risk for outbreaks by inducing herd immunity (Arden et al., 1995). Studies suggest that it may be possible to decrease the risk of influenza exposure to the elderly living in long term care facilities by taking advantage of the protection conferred indirectly by herd immunity (Arden et al, 1995). Increasing herd immunity would require an increase in influenza vaccination in both the elderly residents and health care workers in these facilities. Therefore, it is essential to examine and understand influenza vaccination recommendations and guidelines, long-term care facility vaccination policies and other supporting studies in order to apply sound evidence to logically assess current influenza vaccination practices in facilities containing elderly residents.

### **Approach**

The primary goal of this project was to develop a review of the literature to support a further long term care facility vaccination policy and procedures assessment in Texas Department of State Health Services, Health Service Region (HSR) 7. This information was developed by reviewing various scholarly journals, previous influenza studies, official websites and facility directories and databases. The useful information was further reviewed and compiled within a database and utilized to develop a solid background of evidence to support the development of a long term care facility study. Furthermore, this literature review was useful in that it:

- 1) Summarized articles which address the risks associated with influenza in the elderly population within long term care facilities.
- 2) Provided an overview of current adult influenza vaccination recommendations and guidelines from various public health sources.
- 3) Addressed evidence to suggest the vaccination of health care workers is useful to minimize the spread of influenza in long term care facilities.
- 4) Determined if there is supporting evidence to support logical assessment designs by evaluating different influenza vaccine and long-term care studies.

### **Findings**

The findings of this research suggest there is supporting evidence to warrant a further study of influenza vaccination policies and practices in long term care facilities in HSR 7. The literature proved influenza poses significant health risks to the elderly population, it is important for health care staff to be vaccinated to limit influenza spread in facilities and similar study designs to HSR 7's intentions have been successful in determining policy adherence of residents and employees.

### **Essential Services of Public Health**

This project primarily addressed the essential public health services of research and evaluation. The research from the literature review can be utilized by public health professionals to develop new information to gain a better understanding of how the long term care facility community can be improved. Lastly, the results of an additional study developed by the literature review can be used to evaluate health programs based on analysis of health status and adherence to vaccination policies. This information can then be utilized to provide information necessary for allocating resources and/or reshaping programs.

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**Topic: Influenza**

**Title: Evaluation of Elementary School Survey Responses Following the Novel H1N1 Influenza Outbreak, Dallas County 2009**

**By Cari Stebbins**

**Public Health Significance**

Schools often close in response to influenza outbreaks as a non-pharmaceutical approach to reducing virus transmission. The latest outbreak of the novel H1N1 influenza virus in April and May of 2009 resulted in the closure of several Dallas County schools. The purpose of this study was to evaluate parental opinion of school closure and the burden associated with it. Student flu vaccine history and intention to receive next season’s vaccines were also assessed. Information from these data could provide a better understanding of the effect school closure has on communities. The influenza vaccination results could be informative for future school vaccination campaigns.

**Approach**

Questionnaires were distributed to parents of children attending seven elementary schools in Dallas County following the H1N1 outbreak. Four of these schools closed for several days in response to the outbreak and three did not. Responses to each question from the survey were coded into SPSS for analysis. Frequencies were run to summarize the responses to each question among the schools that closed and those that did not.

**Findings**

Among the parents of the elementary schools that closed, 230 (86.1%) responded that they agreed with the decision to close school due to the H1N1 influenza outbreak. Similarly, 346 (87.8%) of parents from the schools that did not close stated that they would agree with a school closure decision. According to the parents who responded from schools that closed, 11.5% stated that their child had to be sent away from home

for care during the school closure, and 20.3% of these parents paid for childcare. Only 5.9% of the responses from the schools that stayed open stated that the child would have to be sent away from home for care, and 21.1% responded that there would be a cost for childcare.

Of the parents from schools that closed, 37.8% responded that their child had received the flu vaccine last season, whereas 51.3% and 51.7% stated that they intend for their child to receive the seasonal and H1N1 flu vaccines, respectively. Of the schools that stayed open during the outbreak, 39.1% of parents stated that their child was vaccinated last season for the seasonal flu, and 59.6% and 61.2% plan on having their child vaccinated next season for seasonal flu and H1N1, respectively.

Parents who participated in this survey were overwhelmingly in favor of school closure in response to an influenza outbreak. Though there was or would be a burden and cost associated with childcare as a result of school closure, it did not appear to be remarkably high. Also, over half of responding parents plan for their child to receive the seasonal and H1N1 influenza vaccines; however, the parents from the schools that did not close seem more inclined to do so.

### **Essential Services of Public Health**

This project primarily involved investigating a public health issue and could be used to assist in developing future policies and plans regarding school closure in response to influenza outbreaks in Dallas County.

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### **Topic: Influenza**

**Title: To Estimate the Number of Primary and Secondary Cases of Novel Swine Flu in Dallas County and to Characterize the Volume of Bus Traffic from Mexico to Dallas County During April 10<sup>th</sup> to May 5<sup>th</sup> 2009**

**By Uzma Syed**

### **Public Health Significance**

A novel Influenza A (H1N1) virus was first identified by the Centers for Disease Control and Prevention Laboratory (CDC) on April 15, 2009 and the first human cases possibly occurred in La Gloria, Mexico on 02.15.09 (Fraser et al., 2009). On April 26<sup>th</sup>, the Secretary for the U.S. Department of Homeland Security declared a public health emergency in response to the emerging epidemic. Novel Swine Flu has now been declared a pandemic by the WHO and this is why it is important to find how the virus works to develop a safe vaccine that can protect communities.

This study characterizes the volume of bus traffic from Mexico to Dallas County during the initial stages of the novel influenza A (H1N1) epidemic. The aim of this

study is to provide a better indication of person-transit volume locally, as this variable heavily influenced the estimated disease prevalence in Mexico. Also, finding the number of identified infections who had either direct or indirect contact with this area may further assist in determining disease transmission characteristics.

### **Approach**

Dallas County Health and Human Services (DCHHS) investigated all early cases of novel influenza A (H1N1) infections. Cases were described as being probable, confirmed and suspected cases based on the initial CDC case Definitions. Confirmed and probable cases were reviewed to identify primary and secondary contacts, which indicated recent travel from Mexico. Identified primary and secondary contacts case investigation report forms were examined and all-important information was entered into a de-identified spreadsheet.

Information on registered bus companies operating with service directly to and from Mexico were obtained from DCHHS. Bus companies were contacted to determine the estimated number of buses and passengers who traveled to and from Mexico during 4/10/09-5/5/09.

### **Findings**

Of the 145 confirmed and probable cases of novel influenza A (H1N1) infections reported to DCHHS, 3 (2.06%) of these were identified as having a primary contact and 3 (2.06%) of these had secondary contacts identified.

Of the 19 bus companies identified as operating transport to Dallas County, 11 responded (57.9%). During the period of April 10<sup>th</sup> to May 5<sup>th</sup>, approximately 53,562 people traveled to and from Mexico to Dallas County through the identified bus companies. In addition to the large number of international passengers arriving to the Dallas area by airplane, a significant population also is arriving through bus transportation. As a result, models used to estimate disease prevalence by incidence of reported cases in destination countries may be inaccurate if modes of transportation other than airplane are not considered.

### **Essential Services of Public Health**

The project addressed epidemiological surveillance which is important to monitor the prevalence and incidence of the Novel Swine Flu epidemic in Dallas County.

### **References:**

1. Fraser C, Donnelly C, Cauchemez S, et al. Pandemic potential of a strain of influenza A (H1N1): Early Findings. Science. 2009 Ahead of Print.

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**Topic: Influenza**

**Title: Influenza Surveillance at Harris County, Texas**

**By Azar Tavakoli**

### **Introduction:**

I did my practicum at The Disease Control and Medical Epidemiology (DCME) division at Harris County Public Health and Environmental Services. This department is responsible for surveillance of 61 notifiable (infectious) diseases, recognition and investigation of outbreaks in Harris County, recommendation of appropriate public health interventions, and reporting on disease activity.

### **Public Health Significance**

Influenza is a serious contagious disease. Each year in the United States, on average 5 to 20 percent of the population gets the flu, more than 200,000 people are hospitalized and 36,000 people die from seasonal flu complications. Influenza is responsible for a total cost of over \$10 billion per year, and there is an overall increasing trend in the number of flu-related hospitalizations in the United States each year<sup>1,2,3</sup>.

To prevent influenza outbreak in Harris County, the county DCME has in place an active surveillance program where they receive and investigate reports on new cases of flu, or flu like illnesses from schools in their jurisdiction on a daily basis. This surveillance helps the County to detect and prevent an influenza outbreak.

There are numerous reasons why we care so much to collect and analyze surveillance data on influenza and especially on school kids. Children are much more infectious than adults and shed virus from just before they develop symptoms until two weeks after infection. The flu virus is transmitted easily from person to person; Influenza tends to spread rapidly in seasonal epidemics; Influenza produces direct costs due to lost productivity and associated medical treatment. In addition, flu outbreaks in the past have taken many lives and have cost billions of dollars. It has been estimated that a future pandemic could cause hundreds of billions of dollars in direct and indirect costs<sup>4</sup>.

### **Approach**

I used STATA, and Excel to analyze the surveillance data that was collected during the influenza season from Harris County school districts. I used these statistical tools to 1) extract information that could indicate trends, or patterns of the flu disease which could help the county in the future preparation, and implementation of appropriate public health interventions; 2) by finding inaccuracies in the data collected, I made suggestions on improving data collection methods and better reporting on flu and flu like illnesses from schools for the upcoming flu season.

## **Findings**

The final product was a Power Point Presentation where I illustrated the findings – the distribution of Flu-A and Flu-B viruses, the trends in the spread of flu in various school districts, and frequency of influenza viruses in various hospitals in Harris County. I also made suggestion to improve accuracy of data collection, and reduce data-input errors.

## **Essential Services of Public Health**

My projects primarily addressed two essential services of public health.1) Monitoring health status to identify and solve community health problems; and 2) Diagnosis and investigation of health problems and health hazards in the community.

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**Topic: Influenza**

**Title: Swine Flu Rapid Response and Investigation Team**

**By Mary Walsh**

## **Public Health Significance**

When H1N1 hit the Lower Rio Grande Valley in late April 2009, there was great uncertainty about the pathology and epidemiology of the virus. The County, as was the rest of our Global neighbors, were unsure which population was at most risk, the virulence of the virus, and how quickly it would evolve out of Mexico and into other countries. At this time, the need for surveillance was great and urgent, as dozens of new cases were being reported to the Cameron County Health Department, Daily. Our work would help us to understand the spread of the H1N1 in our community in order to provide adequate health services and curb disease transmission.

## **Approach**

After preliminary assessment of the situation, two surveillance systems were to be established to track influenza-like-illnesses and reported influenza cases in the county. For this, I helped organize and lead an influenza-like-illness surveillance system in schools, adult and child day care centers, nursing homes, assisted living facilities and home health agencies. I helped with system design, implementation, data entry, analysis and reporting to Health Department officials. Participating centers would report daily absences to the County through an online or paper survey. This information was compiled into a database, and analyzed to evaluate patterns in absences. This data allowed the Health department to make evidence-based decisions, particularly in regards to school and day care closings. I also led community education sessions where I taught the basic science and epidemiology of influenza, addressed the severity of the outbreak in the Lower Rio Grande Valley, recommended safety precautions, and availability of resources.

## **Findings**

Data from the weekly surveillance system in schools, day cares, nursing homes and health agencies mimicked the epidemic curve found in other data from the County. It showed that the youngest populations in our community were absent due to influenza like illness more than the adult population. This data allowed the Health department to make evidence-based decisions during the peak of the H1N1 outbreak, particularly in regards to school and day care closings.

## **Essential Services of Public Health**

This project mainly provided a monitoring service for Cameron County. We identified and characterized health problems in our community, particularly, which population (age, location) was most impacted by the H1N1 outbreak. My project also worked to inform, educate and empower people across the county. This was accomplished through the community education services held at the health department.

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## **Topic: Knowledge Translation**

### **Title: Knowledge Translation: Interactive Web Portal Development and Systematic Review of Potential Projects**

**By Denise Truong**

## **Public Health Significance**

Though investments are being made in public health research, few are dedicated to getting the valuable results into a form that can be utilized by policymakers, practitioners and the public. This act of translating research into usable and effective applications is called knowledge translation. The UT SPH Institute for Health Policy's Research into Action (RIA) knowledge translation initiative was developed to help address this gap between what we know and what we do. Specifically, the RIA mission is to translate public health research into evidence-based policies and programs to enhance the health of communities. If RIA is successful, public health research will positively impact more communities and the individuals living in them.

## **Approach**

I participated in the creation of an interactive web portal for the international community of knowledge translation (KT) professionals, including the development and management of an internal database of existing portals and their content and the development and evaluation of the RIA portal databases' design and processes. KTEExchange.org launched August 10, 2009 and includes searchable databases of KT bibliography and funding sources, a searchable calendar of KT events worldwide, KT case studies, KT news, and links to RIA's Facebook and Twitter pages. It provides features such as RSS feeds, e-mail alerts, and perhaps most importantly, member abilities to add to our databases, calendar and other KT information as well as create their own KTEExchange.org profile for use in our Facebook-inspired networking tool.

I also helped with the development and conduction of a systematic review process for researching and evaluating potential project topics.

**Findings**

My final product is the result of our team effort over the past months (KTEExchange.org) and a policy brief on one of our first two knowledge translation projects.

**Essential Services of Public Health**

My project primarily addressed essential service #5: Develop Policies and Plans that Support Individual and Community Health Efforts.

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**Topic: Laboratory Quality Management**

**Title: Development of Quality Management System Modules**

**By Brandy Greenhill, MS, MT(ASCP)**

**Public Health Significance**

Laboratories play a crucial role in the diagnosis and treatment of patients. Reportedly, 70% of medical decisions are based on laboratory results. In some countries, such as Africa, laboratories are inadequately resourced and struggle to identify and diagnose infectious diseases and other illnesses. The mission and vision of the Clinical Laboratory Standards Institute (CLSI) is to develop and promote best practices in laboratories and become a leader in improving the standards for medical care throughout the world.

In May of 2003, the President’s Emergency Plan for AIDS Relief (PEPFAR) became public law to address the concerns of AIDS in Africa. It was the largest commitment of a nation to a single disease. The legislature earmarked \$15 billion in 5 years to the PEPFAR program. Since that time, the legislature expanded this to include tuberculosis and malaria in the Henry J. Hyde U.S. Global Leadership Against HIV/AIDS, Tuberculosis, and Malaria Reauthorization act with an additional \$48 billion.

One goal of CLSI, under PEPFAR, is to develop individual modules on each component of a total quality management system and assist foreign laboratories in implementing all or parts of the quality management system into their laboratories to improve the quality of health in those areas.

**Approach**

Modules developed are derived from CLSI’s Key to Quality program. Before beginning a module, it was necessary to review the concepts of the quality management

system as well as examine other previously built modules to ensure consistency across all modules.

Once the modules were reviewed, it was a matter of developing a PowerPoint to introduce the module and provide background material as to its importance in a laboratory setting. Afterwards, it was necessary to build training material for both the “trainer” and the “trainee.” In order to show understanding of the materials, activities and short, simple quizzes are provided with the training module materials.

Each module took two weeks to build, followed up with a review by peers for critique and revisions. Once all corrections/revisions were completed the module is ready for the members of CLSI to utilize in the training of laboratory personnel in Africa.

### **Findings**

The final products were quality management modules on external and internal assessments and an introduction module which provides background and introductory concepts of a quality management system.

### **Essential Services of Public Health**

This project fulfills essential service #8 of assuring competent public and personal health care workforce are available. This essential health service assesses workforce, maintains public health workforce standards, adopting quality improvements, provides for education and training of health professionals, and requires a credentialing service for credentialed and licensed health care workers.

The modules built will advance the quality of the workforce. The modules will assist laboratories in preparing for accreditation, provide accurate laboratory testing, and require internal and external assessment of health care workers and the laboratory processes.

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**Topic: Malaria**

**Title: Malaria**

**By Courtney Peterson**

### **Public Health Significance**

VPWA has instituted an annual month long awareness campaign, entitled *Kick Malaria Out (KMO)*, designed to create much-needed awareness on (1) The rate at which Malaria is killing the West African population, especially children and pregnant women and (2) Measures to prevent and eradicate, if not minimize, the Malaria disease within the community with a special emphasis on educating the population on the need to avoid creating breeding grounds for mosquitoes. Campaign KMO will run from August 20 2009 thru September 20 2009 but the outreach by the combined volunteers

is for first two weeks, in the following countries: Togo, Benin, Nigeria, Ghana, Ivory Coast, & Liberia. I accepted the position to voluntarily conduct research on issues related to KICK MALARIA OUT (KMO) 2009 campaign in West Africa that was published on their blog throughout the summer of 2009. The information in my blogs supported their campaign to educate the West African population on breeding grounds of mosquitoes and ways to avoid creating them. This position of Research Assistant for KMO 2009 was for period of 2.5 months and as a part of my practicum I compiled my research into a single document, and editing of this document will be done to suit ideals of KMO 2009 before the final publication and printing of educational materials.

### **Approach**

1. I developed a deeper understanding of the impact of malaria, especially in the region of West Africa, through reviewing the scientific and practice literature on malaria prevention.
2. I identified and described the strategies that the United States and other countries with low prevalence of malaria have carried out in order to successfully deal with malaria, and I blogged about this information on the VPWA site. I hope that my research can be a powerful tool during the weeks when the VPWA workshops are teaching people of West Africa how to protect themselves from malaria exposure.
3. I gained insights into the organizational structure of VPWA and the strategies employed to promote malaria prevention and treatment in West Africa

### **Findings**

For my final practicum product, I compiled my blogs into a single document to illustrate the knowledge I obtained through researching the dynamics of malaria. Throughout the summer, these blogs were submitted upon completion and to the VPWA website. The compilation outlines the dangers of malaria along with my recommendations for promoting malaria prevention and treatment with people that attend the workshops in the fall during the KMO campaign.

Through this experience I found that Africa is not getting the full amount of assistance that they need to adequately deal with the malaria endemic that they are experiencing. I plan on continuing my work even after the completion of this practicum in order to help provide a voice for the region of Ghana. I will be visiting the region this fall in order to gain a deeper understanding of the needs of the region, and then return home as an informed liaison.

### **Essential Services of Public Health**

This practicum helped me to:

- Inform, educate, and empower people about health issues.
- Research for new insights and innovative solutions to health problems.

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**Topic: Maternal Mental Health**

**Title: Intervention Program to Improve the Mental Health Status of Pregnant and Parenting Female Teens**

**By Rahmat Adejumo**

**Public Health Significance**

Parenting and pregnant teenagers are more vulnerable to developing mental health problems such as depression and are also more likely to have a repeat pregnancy, drop out of school or/and abuse drugs than their peers. Although the primary focus of the program was to improve the mental health status, secondary outcomes for measure following the intervention include the school drop-out rate, repeat pregnancy rate.

**Approach**

The program was designed for the Hogg Mental Grant as a brief intervention to run for two years targeting pregnant and parenting female teenagers of Houston, Alief and Spring-Branch Independent School District. Evidence- based, Community and School-based systems of care were utilized to form an integrative care system. The participants will be case managed by a public health nurse, and linked to appropriate referral services. Computer Assisted Motivational Interviewing will be done by the case manager at home visits, this is a form of behavior change counseling with the aid of a laptop (computer) that aims to assess the mental health status, promote healthy relationships, improve contraceptive use, and promote school continuation. A pre and post assessment will be used to evaluate the intervention program. I was also able to learn the process of literature search and review as well as grant writing with the help of the UTHSC-H, Center for Health Promotion and Prevention Research faculty and staff. The intervention program is still awaiting funds from the Hogg grant to commence.

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**Topic: Maternal Mental Health**

**Title: Filling the Void: Planning and Development of a Maternal Mental Health Program**

**By Roula Zoghbi**

**Public Health Significance**

During my practicum at Texas Children’s Hospital, I have assisted in the planning and development of an academically focused maternal mental health program for the Texas Children’s Maternity Center. Establishing such a program is essential given that Texas and even the greater southwest region offers no such organized service to women with psychiatric illness during pregnancy or postpartum.

The prevalence of psychiatric issues during pregnancy and postpartum is striking. Postpartum blues can affect up to 85% of women after pregnancy<sup>1</sup> and Postpartum Depression (PPD) affects upwards of 20%<sup>2</sup> of women. PPD is considered the number one complication after pregnancy and has implications for mother-infant outcomes including maternal withdrawal, disengagement, hostility and sleep problems, temperamental difficulties, higher stress signs and poor cognitive and emotional functioning, respectively.<sup>3</sup> Additionally miscarriage, the number one complication during pregnancy, can result in mental health issues due to the grief and loss experienced. Infertility also presents emotional suffering and distress to couples. All of these experiences deserve appropriate psychological support, and the evidence for effectiveness of psychological interventions addressing these needs prove to be beneficial to not only the woman, but to the infant, partner, and family involved.

### **Approach**

To move forward on this project, I performed a literature review to understand the various mental health issues facing women during pregnancy, postpartum, and at other various reproductive phases. I also investigated Centers of Excellence in Women's Health, noting their best practices and models for women's psychiatric illness programs. Lastly, I reviewed existing legislation on PPD in Texas and compared it to more progressive states, like Illinois and New Jersey. From this research, I comprised a packet and notes summarizing the findings for our future visioning sessions.

First, I organized a small visioning session with key mental health stakeholders including our lead psychiatrist, the chief of Ob-Gyn at Ben Taub, the administrator of Ob-Gyn for BCM, and the Senior Vice Presidents of TCH Women's Services and the Maternity Center. Together, we categorized the various patient types, as well as resources and needs corresponding to each. We also discussed how research and education would be essential to our program. From there, I organized a larger visioning session with 20 attendees to further the program's development. We established our top priorities, as well as a timeline of action items until the building's opening in 2011. I synthesized the discussions at both of these meetings, sending out results to the group.

### **Findings**

My final product is the synthesis of the visioning sessions and the timeline that will be the roadmap to building this comprehensive mental health program. We have identified our initial patient types, how/when to screen them, what resources we will need to treat them, as well as database items and equipment for research purposes. Plans for educating students in medicine and public health in this field are also in the works.

### **Essential Services of Public Health**

The project primarily addressed the essential service of public health pertaining to assured quality and accessibility of health services. As mentioned, this part of the country lacks access to any such program related to mental health during pregnancy and postpartum. This service aims to fill this void, raise awareness, and provide superb care to this largely overlooked and neglected patient population.

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<sup>1</sup> Pearlstein T, Howard M, Salisbury A, Zlotnick C. Postpartum depression *AJOG* Apr 2009; 200:357-364.  
<sup>2</sup> Postpartum Support International. Postpartum Depression Illinois Alliance Brochure 2006.  
<sup>3</sup> Pearlstein T, Howard M, Salisbury A, Zlotnick C. Postpartum depression *AJOG* Apr 2009; 200:357-364.

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**Topic: Medical Outreach in Zimbabwe**

**Title: Bethany Ministries-Medical Outreach**

**By Alicia O’Gilbert**

**Public Health Significance**

Economic conditions of a country have a profound effect on the general health of the public. According to recent publications, the unemployment rate in Zimbabwe is approximately 90%. Health care workers are not being paid which leads to a shortage in staff. Government hospitals are being overrun with patients who are unable to afford treatment. Hospitals also do not have the necessary medical supplies and equipment to provide proper treatment to the ill. A lack of supplies forces health care workers to improvise in order to care for their patients.

**Approach**

Bethany Ministries' focus is to assist the medical community of Zimbabwe by donating essential medical supplies and equipment to major government hospitals. The beneficiaries include Harare Central Hospital, Gweru Provincial Hospital, Kwe Kwe General Hospital, and United Bulawayo Hospitals with plans to expand. A project proposal is required from each hospital and must contain a prioritized list of necessary medical items. Medical supplies and equipment were sourced in the United States and stored in a warehouse located in Kountze, Texas. The supplies were carefully sorted by category and designated to each hospital depended upon their current needs. Once funding had been raised, the supplies were loaded into 2 40ft containers and shipped to Zimbabwe. The contents were then distributed to the appropriately designated hospitals in mid-August.

Currently in Bulawayo, we have established a home based care project in response to needs expressed by physicians and nurses in the community. This project will assist with overcrowding of hospitals as well as providing medical assistance to those without transport. Bethany Home Based Care will also create jobs within the community.

**Findings**

The final product was the establishment of Bethany Home Based Care in Bulawayo, Zimbabwe. This community based health care program will help alleviate undue strain

on the hospitals within the area while creating jobs and providing excellent nursing care to the citizens. Future plans include expanding the home based care to several other cities in Zimbabwe.

The donated supplies and equipment will assist the medical community in providing quality care to the people of Zimbabwe. We believe that medical care should be provided to all regardless of economic circumstances. With the several consignments, government hospitals will be able to properly treat their patients.

### **Essential Services of Public Health**

Bethany Ministries-container division aims to mobilize community partnerships to identify and solve health problems. A solid partnership has been made with Bethany Ministries and the Ministry of Health in Zimbabwe. The information obtained from the government hospitals is shared with American stakeholders.

Once we began to evaluate the effectiveness, accessibility, and quality of personal and population based health services it was revealed that they were lacking. Bethany Home Based Care was born after it was discovered that many people in the city of Bulawayo needed medical care but either could not afford it or lacked transportation.

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**Topic: National Children’s Study**

**Title: National Children’s Study Practicum**

**By Susan Lackey**

### **Public Health Significance**

The National Children’s Study (NCS) is a long-term, large-scale longitudinal study of over 100,000 children across the United States. NCS aims to follow these children from conception until age 21. It is hoped that the data collected on the environment and genetics of the subjects and families will allow the scientific community to get a better handle on risks to children. From this research, control measures for health outcomes can be developed.

Because of the longevity and scope of the study, effective recruitment is vital. Before data collection begins, it is important to allow the communities involved to be aware of the importance of the study. The issue of dropout is especially great in this study because of the lengthy follow-up. Making sure that the public understands the time commitment and benefits of the study is important to minimize attrition.

### **Approach**

My work on this project was aimed at maximizing study recruitment. NCS will sample neighborhoods and then screen them for potential subjects. The recruitment is such that the entire community (in this case, Harris County) should have a grasp of the

study's goals as well as trust for the scientific community. Without this, the study's data will be biased and attrition will be elevated.

My approach to researching recruitment strategies was to put together a literature review of articles focused on recruitment and retention in long-term longitudinal studies. Many of these articles focused on community-based recruitment. The research done for the literature review was done gradually, over the course of the practicum. As I learned from this research, I conducted searches specifically for Harris County.

I put together lists to be used by the Harris County study center in recruitment. These lists were comprised of trusted groups in Harris County including places of worship, doctor's offices, and police stations. These locations were geocoded and organized by Harris County Quadrant.

I also worked with sampling for NCS. I worked with the Houston-Galveston Area Council and went through over 300 blocks and compared aerial shots from 2008 with those from 2000. This work was aimed at ensuring that sampling will be done accurately and the population of Harris County accurately represented.

### **Findings**

My final work for the study consisted of a literature review accompanied by lists of important people and places in Harris County that are important to the study in terms of gaining the community's trust. Certain groups, mainly minorities, are less likely to participate in the study than other groups. It is thus important to put time and resources into reaching groups that would normally not participate. The bottom line is that no stone should be left unturned when canvassing the community.

The work on sampling consisted of noting which block groups appeared to have drastically changed since 2000. The NCS will take this information and adjust their sampling methods accordingly.

### **Essential Services of Public Health**

My work on the NCS primarily focused on the Research service of public health. By studying children longitudinally, the etiology of many childhood diseases can be effectively explored.

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## **Topic: Nosocomial Infections**

### **Title: The Relationship between Patient Acuity, Patient days, Mean staffing measure to Infection rates**

**By Oluwatoke Omiwade**

#### **Public Health Significance**

Nosocomial infections cause considerable morbidity and costs and are the most significant contributors to prolonged hospital stay and increased hospital mortality. Nursing workload, as well as the patient acuity is one of most important determinants of patient safety and quality of care in ICUs.

If a significant relationship is found between patient acuity, staffing measure, patient days and infection rates, intervention programs may then be implemented in order to begin to find ways to curb these infections.

#### **Approach**

Prior to carrying out this project, I participated in weekly audits with Infection Control Practitioners to observe the different units in Memorial Hermann Hospital at the Texas Medical Center. I took part in a series of educational projects, to get a deeper understanding of the Infection control practices. These educational projects included: understanding the CDC definitions of nosocomial infections, hand hygiene practices, review of microbiology reports, studies on aseptic technique, surveillance, Isolation precautions, just to mention a few.

I also attended Infection control meetings; this assisted a lot in guiding me in the path I wanted my project to follow.

After training, observing and learning through hands on experience with other ICPs as well as guidance from supervisors, I decided to focus on finding the relationship between Patient acuity, patient load and nurse staffing measure on infection rates.

#### **Method**

##### **Parameters measured include**

***Patient Acuity*** -This patient classification system was helpful in determining patients who are similar both clinically and in terms of their consumption of hospital resources. Patient scores were abstracted from hospital data from one year ago (March 2008 – June 2009) for each month for patients in the CVICU

1=minor

2= moderate

3= major and

4 = extreme.

***Patient days*** – This was done by looking at the total patient days for each month (March 2008 – June 2009) for the patients in the CVICU.

**Patient to nurse ratio**- It was calculated by simply looking at the total patients for each month and dividing by the number of nurses available that month for the CVICU. The time frame was also a year back (March 2008 – June 2009).

**Infection rates** - The infections that were observed were Ventilator – Associated Pneumonia (VAP), Bloodstream infections (BSI), and Urinary Tract infections (UTI) for each month from March 2008 – June 2009.

### **Findings**

After analysis of the data, it was found that there was no correlation between the Patient acuity levels, mean staffing measure and patient days to infection rates. The limitation to the study was that only a small sample size was used, and there were several missing data.

This study would be repeated with the Medical Intensive Care Unit (MICU), which has less missing data.

### **Essential Services of Public Health**

**Research:** This was addressed by looking at the various parameters earlier mentioned in order to verify whether they had an impact on Infection rates. The findings from this study would aid in finding new solutions for reducing infection rates

**Inform and Educate:** Throughout my practicum, I found that communication was an important skill for an infection control practitioner, whether it involved informing new employees (nurses and residents) about infection control practices through presentations, or voicing out infections during ICP meetings, in order to find ways to curtail the problem. Education of good hygiene practices for nurses who are directly involved with patient care was a topic that was continually emphasized through effective communication.

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**Topic: Nursing Research**

**Title: Assisting the Statistician at the University of Texas School of Nursing Center for Nursing Research**

**By Eva Parker**

### **Public Health Significance**

This summer I assisted the statistician on staff at the University of Texas School of Nursing Center for Nursing Research (CNR) with statistical analysis and reporting. As stated on the University of Texas School of Nursing website, <http://son.uth.tmc.edu>, the objective of the CNR is to support the research conducted by the faculty and students at UT School of Nursing. Nursing research is public health research in that

the goal is to indentify best treatment practices and apply these practices to the populations most at risk. For example, the study I worked on, the CAREs study (Committed to Assisting with Recovery after Stroke), is a longitudinal intervention study involving stroke survivors and their spousal caregivers. The study looks at differences in the rate of change in outcome variables including functional independence, depression, life satisfaction, and stress between two groups, a "usual care" group and a "home-based intervention" group.

### Approach

My final product was a report comparing changes in caregiver cytokine levels over time between the "usual care" group and a "home-based intervention" group. Cytokine levels are used as a measure of stress in individuals. The analyses were conducted with linear mixed models for repeated measures on both the whole group of caregivers for which cytokine data was available (n=108) and a subset of caregivers that were not on immune modulators or suppressors (n=27). The outcome variables examined include both the transformed values of PHA- and tetanus-stimulated IFN $\gamma$ , IL-4, IL-10, and IL-12 and ratios of PHA- and tetanus-stimulated IFN $\gamma$  to IL-4, IL-10, and IL-12 and PHA- and tetanus-stimulated IL-12 to IL-4, IL-10. The fixed effects examined include days since stroke at baseline (DysStrok), number of days since baseline of cytokine measurement (days), cognitive subtotal of stroke survivor at baseline (Cog\_0), caregiver gender (GenderCG), the response of the stroke survivor to question 1 on the Health Status Questions at baseline (q1\_SS\_0), the stress of stroke survivor at baseline (Sts\_SS\_0), a hemorrhagic right brain stroke (HRBrain), a sleep disorder in the stroke survivor (Comp18), inclusion in home-based or mild educational intervention group (Group), and the interaction term "days\*Group". Additional analysis was conducted using as a fixed effect the categorical variable "month" in place of the continuous variable "days".

### Findings

My final report included a narrative description of the tests performed and the results, a table detailing whether "days" or "month" was significant for each cytokine measure, a table detailing the significant fixed effects for each cytokine measure, and graphs depicting the change of cytokine level over time for the "usual care" and "intervention" group for each significant cytokine measurement.

### Essential Services of Public Health

My project primarily addressed the following essential services of public health (as listed in the PowerPoint presentation from Practicum Seminar 1 "The Historical Development and Legal Authorization of Public Health"):

- Evaluate effectiveness, accessibility and quality of personal and population based health services
- Research new insights/innovative solutions to health problems

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**Topic: Nutrition Education for Refugees**

**Title: Nutrition Education Among Resettled Refugees in the U.S**

**By Gladys Browman**

**Public Health Significance**

Very few organizations have established health promotion programs for refugees to lead a healthy lifestyle once in the United States. In addition, research among refugee populations especially in areas of health promotion interventions has received little to no attention (Barnes, Harrison, Heneghan, 2004). Studies show that refugees lack knowledge about U.S. foods and preparation techniques as well as eating healthy and programs which include shopping practices, nutrition education and alternative food preparation techniques are needed (Willis and Buck, 2007; Hadley, Zodhiates and Sellen, 2007; Patil, Hadley and Nahayo, 2008)

**Approach**

Nutrition education sessions were conducted as part of the Cultural Orientation Sessions provided by Catholic Charities. The education sessions which were mainly done through power point, covered topics on general knowledge of food and nutrition as well as recommendations, weight management, food safety and reading food labels. All sessions were interpreted and clients were also given nutrition education information in their own languages (working with Burmese, Somali and Iraqi refugees) for reference. In addition, the clients were taken on a grocery store tour to enhance what they had learned in the sessions.

**Final Product**

The final products were the PowerPoint presentations for use for future nutrition sessions and handouts on food safety, increasing fruit and vegetable intake, decreasing fat and sugar intake. The handouts can be used by the few refugees who understand English and/or volunteers who are familiar with the language to assist in educating the refugees about eating healthy and food safety practices.

**Essential Services of Public Health**

The project primarily addressed the public health essential service of informing, educating and empowering people about health issues.

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**Topic: Obesity**

**Title: Obesity Prevention Intervention for Low Income Preschool - Age Children**

**By Omegie Linda Anabor**

**Public Health Significance**

Obesity is rising in epidemic proportions worldwide, and in the US it poses a health, economic, financial and social burden, as figures are mounting yearly. The rising incidence is not sparing children as Ogden et al<sup>1</sup> estimated the prevalence of obesity in 2003-2004 to be 16% and 18.2% in girls and boys respectively, rising from about 13.2% and 14% in 1999-2000, with a similar trend in adults. These proportions are documented as highest among the Hispanic and African-American populations and among low income families<sup>2</sup>. Thus, there is a need to address this trend by creating and instituting intervention programs that would address modifiable risk factors such as consumption of unhealthy fatty food diet, reduced physical activity in kids and sedentary life styles in adults. During my practicum, I was involved in a project called the Coordinated Approach To Child Health in Underserved Populations (CATCH – UP) study on obesity prevention among preschoolers, being carried out in Harris County Head start centres in Houston, Texas.

**Approach**

The project was about improving and promoting healthy nutrition amongst preschool children and aiming to increase time spent during physical activity at school and at home. The kids are taught about healthy foods to eat and those not to eat all the time, including games to play. Parents are also taught to reduce the television-viewing time of these kids. I helped design, synthesize and collate questionnaires, modules and materials for use during the intervention, putting in mind the different cadres of people we want to reach out to; from the teachers to uneducated parents/ Spanish-speaking parents, hence the need for diversity. I understood how epidemiologic principles of sample size and the study population had a role to play in designing our study. I was involved in collating and preliminary assessment of pilot data that had been collected from parts of our study groups therefore honing in on my statistical analysis and data management skills which I had learnt in class. I also got first-hand experience in preparing a manuscript for submission in a public health journal.

## Findings

Working on this project with my preceptor exposed me to leadership qualities of hard work, organizational skills and team spirit which she utilized in handling every aspect of the project. This I learnt a lot from. The project is still ongoing but I also learnt about the importance and ways to address vital public health issues, and proffer appropriate solutions.

## Essential Services of Public Health

Our project primarily addresses the essential services of informing, educating and empowering people as well as researching new insights and innovations to a pertinent public health issue such as Obesity.

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2. Ogden CL, Carroll MD, Flegal KM. High body mass index for age among US children and adolescents, 2003-2006. *JAMA*. 2008; 299:2401-2405.

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**Topic: Obesity**

**Title: Creation of the “Get Fit Kit”- Texas Department of State Health Services – Office of Program Decision Support**

**By Elizabeth Ann Zapata**

## Public Health Significance

The *Get Fit Kit* was designed to give school nurses an intervention tool providing basic nutrition and physical activity information to adolescents who have been identified as overweight or obese by FitnessGram, a fitness assessment tool used in Texas public schools.

## Approach

As an MPH intern with the Texas Department of State Health Services (DSHS) and a registered dietitian, I was tasked with creating content to promote healthy living activities for adolescents as one of the Title V Block Grant Measures. At an inter-agency meeting with the School Health Program, Anita Wheeler, the school nurse consultant, indicated a need for an intervention tool for school nurses to utilize once students had been identified as overweight or obese by FitnessGram. Rachel Samsel, the State Adolescent Health Coordinator for the Office of Program Decision Support, decided to merge these two projects into a school nurse toolkit that would serve as a ready-to-use intervention tool available to all public school nurse’s statewide.

I created the content by doing research on what type of information was needed, already available, and sought after by school nurses. I reviewed the literature and met with key stakeholders on the subject matter. Following the creation of the material, the content went through reviews and revisions my multiple internal and external stakeholders. We then used a social marketing firm, EnviroMedia, to creatively illustrate and publish the toolkit.

### **Findings**

The school nurse toolkit, now renamed the *Get Fit Kit*, is an interactive, web-based tool that includes six lessons on:

1. MyPyramid
2. Portion Control
3. Reading Nutrition Facts Labels
4. Fast Food and Snacking
5. Body Mass Index (BMI) and Physical Activity
6. Living with Diabetes

The *Get Fit Kit* will be bilingual to cater to both English and Spanish-speaking students either individually or in small groups. The *Get Fit Kit* will be available to all Texas school districts in the Fall of 2009. School nurses will be given the opportunity to participate in two webinars during September 2009 to learn about the *Get Fit Kit* and how to implement it in their schools and with their students.

### **Essential Services of Public Health**

The *Get Fit Kit* addressed two essential services of public health: 1.) Develop policies and plans that support individual and community health efforts, and 2.) Inform, educate, and empower people about health issues.

First, I developed the *Get Fit Kit* as an information and intervention tool to reach adolescents identified as overweight and obese. This toolkit cannot cure the national obesity epidemic, but by providing information and motivation to children at-risk, it supports and supplements other initiatives to decrease the prevalence of obesity.

Second, the *Get Fit Kit* provides health information on a variety of subjects ranging from nutrition, physical activity, and even living with diabetes. Each lesson touches on key points used to inform, educate, and empower the youth about their health.

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**Topic: Occupational Health and Safety**

**Title: Practicum Abstract**

**By Stefan Malhotra**

**Public Health Significance**

Occupational health and safety are a very important public health concern. People are an organization’s greatest resource, which makes keeping employees safe and healthy a top priority. The H&S program at the Houston Department of Health and Human Services (HDHHS) with which I interned this summer, functions on the principle that workers have the right to leave their work place in the same or even better condition than when they arrived. The program also functions on a financial level, as a workmen’s compensation unit within the health department. My tasks included training employees to be safety coordinators for different departments within the city, update and revise safety policies, and inspect work sites to improve employee safety. By keeping employee risk to a minimum, the program is able to keep costs down and increase productivity.

**Approach**

Making progress on my assigned tasks required much persistence and use of my people skills. Employees are very busy with their own assignments, which made progress on any additional project very difficult to coordinate. However, by building relationships and being flexible, I was able to complete my tasks. I quickly realized that progress is made not only through hard work, but by being very patient with others.

**Findings**

Aside from training employees, the final product of my internship was a complete revision and update of the safety manual for the entire Health Department. With over 100 pages of text, the safety manual was examined and edited by bureau chiefs and myself. It was quite challenging to complete this task, as these employees had many other projects to complete. My task was also to verify the accuracy of the information: the safety manual is intended to be a reference for any Health Department employee, and as such should be clear and easy to read. Any mistakes in the manual could lead to confusion or improper handling of an incident, and possibly cause injury to an employee.

**Essential Services of Public Health**

My project primarily was concerned with informing, educating and enforcing. Informing and educating employees was the main objective of the safety training and manual. By disseminating information about best practices, the H&S program can reduce health risks and promote a safety culture. Creating a safety culture in the workplace can lead to safer practices outside the workplace and ultimately serve everyone’s health interests. Enforcing best practices during inspection of work environments was aimed at improving compliance and changing behaviors. This is

essential as many incorrect work habits may show up in later years and negatively impact employee health.

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**Topic: Occupational Health and Safety**

**Title: Abstract**

**By Rishi Pragg**

**Public Health Significance**

Exposure assessment of physical, chemical and biological agents in the workplace is a necessary role of any health and safety department. It is a mechanism to decide objectively if there is a problem or not arising from inherent job tasks, work stations and job procedures. These hazards and exposures may not be apparent in a laboratory setting and not immediately detected or have an instantaneous effect.

The implications of having an unhealthy workforce can be far reaching and could have many long lasting domino effects on productivity on many scales. The efforts in prevention of occupational illness and injury prevention are relatively small in promoting wellness compared to disease treatment.

The scope of the practicum was to familiarize myself with the management system used by a health and safety department in medical and laboratory settings. More specifically I was assigned to the chemical safety department of environment health and safety for UTHSC. My core responsibilities included Industrial hygiene type monitoring for workplace area noise and noise dosimetry, toxic pollutant monitoring for gases such as VOC's, H<sub>2</sub>S, CO, LEL, Ethylene Oxide, monitoring for correct airflow in fume hoods, particulate monitoring including nano particle monitoring, confined space monitoring, ergonomic assessments, radiation lab surveys, radioactive spill cleanup and proper removal and disposal of hazardous wastes.

**Approach**

I learned about the above assessment and monitoring techniques by actually performing surveys and using the actual instrumentation an industrial hygienist or occupational health professional would use. I worked closely along with other staff members that were responding to real indoor air quality problems and developed a sampling program and with their assistance evaluated the results and made recommendations. Areas within the health science center identified as noisy work environments were identified and monitored. Employees that worked in areas that were thought to be higher than acceptable or that could potentially cause a problem were further monitored by noise personal dosimetry. Work procedures that involved toxic gases such as the ethylene oxide used for sterilization were identified and monitored during the most probable exposure times. Some opportunity for training only happened by chance and I got trained in the proper techniques for a radioactive spill cleanup after a spill occurred. Lab surveys and lab cleanouts for toxic or

potentially hazardous waste were scheduled events that I took part in and assisted and were necessary parts of the job of controlling hazardous exposures to UTHSC employees.

**Findings**

My final deliverables(s) to my department were a series of short memos or reports describing each “incident” we had responded to and what tests/instrumentation were used. The results of these reports suggest that exposures do in fact occur but are not considered unsafe when compared against consensus standards. The whole process of evaluating workplace exposures is ongoing and dynamic as the people and procedures themselves.

Some exposures to materials such as nano particles (very fine particulate matter) still remain largely not understood in evaluating the extent of exposure. The efficiency of measurement techniques commercially available was unknown for these substances.

**Essential Services of Public Health**

The essential service of protection of worker safety and worker health was addressed in this practicum.

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**Topic: Occupational Health and Safety**

**Title: Hearing Loss Caused by Overexposure in the Workplace  
By Rudolph Yen**

**Public Health Significance**

Hearing loss is an important public health issue because it affects the quality of life of individuals who are at risk from occupational exposures. This can be caused by either not wearing hearing protection or improperly wearing hearing protection in an environment where the individual is exposed to noise levels greater than the OSHA 8 hour time weighted average. Some examples of overexposures to noise at NASA include workers running boiler operations, hydraulic techs and machine shop workers.

**Approach**

Noise dosimetry was done on these workers using personal sampling dosimeters that were worn by the worker and the microphone attached to the lapel of their clothing. After a full 8 hours of testing, information collected by the dosimeters were downloaded and a time weighted average was obtained.

**Findings**

After all the data is collected, a report is submitted to the facility manager and workers which includes information about the procedure of the worker, the peak noise level and 8 hour time weighted average, and recommendations for either continued use of current hearing protection or suggestions for new hearing protection. This report is to

inform both workers and their managers in safe practices in order to protect workers from overexposures.

### **Essential Services of Public Health**

This project addressed the promotion of health behavior in the workplace. Follow-up was done to ensure that proper hearing protection was used when required and workers were informed if they were improperly wearing the hearing protection.

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### **Topic: Ovarian Cancer**

### **Title: Differential Expression of Estrogen-Induced Genes and Chemosensitivity in High-Grade Serous Ovarian Carcinoma**

**By Matthew Schlumbrecht, MD**

### **Public Health Significance**

Ovarian cancer is the leading cause of gynecologic cancer death annually. While approximately 75% of patients will initially respond to standard chemotherapy, the majority of responders will ultimately relapse. As patients receive more aggressive salvage chemotherapy, the maintenance of an acceptable quality of life becomes increasingly important. As such, a number of studies have assessed the efficacy of hormonal treatments for ovarian cancer, in the hopes of identifying a treatment that is both effective and tolerable by patients.

In 2008, Ramirez et al published a study that demonstrated a response rate of 26% to single-agent Letrozole, a drug that inhibits the conversion of testosterone to estrogen, in patients with recurrent, platinum resistant, high-grade ovarian carcinoma. Similar studies which included patients with chemosensitive disease, however, have reported higher rates of response to the same drug. Given the greater success of anti-estrogen therapy in cohorts with chemosensitive disease, we hypothesized that chemoresistant ovarian carcinomas would have lower expression of estrogen-induced genes compared to their chemosensitive counterparts. If the expression of estrogen-induced genes is different between tumors of varying chemosensitivity, a biomarker panel including these genes may be created to assist physicians in individualizing cancer treatments.

### **Approach**

Two-hundred nineteen frozen ovarian cancer samples collected between 2004-2007 were identified in the M.D. Anderson Tumor Bank. Only tumors with serous histology and of high-grade were included. Patient characteristics were obtained by medical record review, and included stage, recurrence rates, time to recurrence, and overall survival. Of the initial 219 samples, only 66 met inclusion criteria. Twenty tumors were classified as chemoresistant and 46 were classified as chemosensitive. Resistance to chemotherapy was determined using Gynecologic Oncology Group criteria. Due to insufficient amounts of tumor banked for several specimens, there were a total of 52 tumors (14 resistant and 38 sensitive) used in the final analysis.

RNA was extracted using the Trizol method, and determination of ER-alpha, EIG121, IGF-1, sFRP1, sFRP4, RALDH2, and PR expression was made using quantitative polymerase chain reaction (PCR).

### **Findings**

Mean recurrence-free survival (24.5 months vs. 7 months;  $p < 0.00001$ ) and overall survival (34.2 months vs. 21 months;  $p = 0.003$ ) was significantly shorter in chemoresistant patients. After four years, no deaths were reported in the chemosensitive group, whereas 64% of chemoresistant patients had died ( $p < 0.00001$ ). No differences in the mean expression of RALDH2 ( $p = 0.49$ ), sFRP1 ( $p = 0.22$ ), sFRP4 ( $p = 0.77$ ), PR ( $p = 0.64$ ), EIG121 ( $p = 0.37$ ), ER-alpha ( $p = 0.82$ ), or IGF1 ( $p = 0.53$ ) were measured between sensitive and resistant tumors. Chemoresistance in ovarian cancer, therefore, does not appear to be a function of estrogen-induced genes.

### **Essential Services of Public Health**

This practicum is a demonstration of the public health service of research for new insights and innovative solutions to health problems. Determining the molecular mechanisms of chemoresistance and developing more effective and individualized treatments for ovarian cancer patients continues to be a goal of 21st century oncology. Identifying a prognostic biomarker panel, which was the goal of this study, would allow physicians to better inform, educate, and empower patients during their cancer care.

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### **Topic: Parenting**

**Title: Preempting Parenting Problems – Addressing Children’s Mental, Social, and Emotional Health in the Future by Teaching them How to Parent Today**

**By Leah Hill**

### **Public Health Significance**

Parenting is an important issue. Parent behaviors and habits have great influence across a range of child outcomes, from academic achievement, delinquency, self-esteem, and healthy dating, to obesity and overweight. Parent education is rarely accessible to those who need it and parenting classes are often taken by parents who either do not really NEED the classes or who are ordered to do so by the legal system and thus, are not really interested in the material.

In order to fully impact adult’s behaviors, we must begin in childhood; thus, the Parents Under Construction™ curricula were developed in 1991 by Janet Pozmantier and ChildBuilders. These curricula attempt to teach children in grades K through 12 about healthy parenting strategies, in order to promote the mental health of their own

children. As well, by encouraging students to consider situations relevant to parenting, they improve their own social and emotional awareness through these lessons.

### **Approach and Findings**

My practicum involved updating and adapting this curriculum for electronic use. Through collaboration with Janet Pozmantier and other ChildBuilders staff and volunteers, we identified important changes and updates to be made. I used Adobe InDesign to add updated information and new activities. The curricula are now in PDF file format, which makes it much more versatile. Teachers can elect to use a print or electronic format, depending on their own needs and resources; previously, only a print version was available and printing shipping costs hindered access and distribution. Now, the PUC curricula are available on the ChildBuilders website and on DVD's, for easier dissemination and use by teachers around the country and the world.

### **Essential Services of Public Health**

By focusing on providing an effective curriculum in several formats and through several methods of dispersal, we are addressing the critical public health need of rapid and effective dissemination to community members. These lessons are being taught in several schools around Houston, around the country, and even across the globe. We look forward to additional feedback from users of this program to identify other ways we can improve accessibility and increase our impact on children's mental, social, and emotional health.

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### **Topic: Prevention Strategies and Health Insurance**

#### **Title: Summer 2009: Blue Cross Blue Shield Practicum**

**By Amelia Ubesie**

### **Public Health Significance**

Attention to health prevention strategies on individuals to deter them from becoming high cost claimants is an important health issue because it tackles the question of health care costs. We care about this issue because there are over 4 million people in the U.S. who don't have health insurance. Issues such as overweight and obesity are rising and causing more severe and costly health issues. We care about prevention because in the end people live healthier lives because they prevent it from getting to a bad point and at the same time it saves money.

### **Approach**

I started out by reading a lot of articles on the topic of high cost claimants. Next, I met with various people in different departments within the company, such as the actuarial dept, reporting department, medical directors, and employees over the three companies I was analyzing. After I received the documents on the three companies, I

began to assess the health of the population pulled and what tests were and were not performed. At the last few weeks of the practicum I began to write a report of the various findings from company report data and the readings I had done.

### **Findings**

My final product was a report of the hypothesis that prevention strategies might help drive down the cost of health care in the company. I found that many of the top ten diagnoses for the three companies were identified as diseases that could have been prevented had the methods of care been more aggressive or altered to fit the needs of the population. I also found that a lot of the diagnoses were in line with the national leading causes of death.

### **Essential Services of Public Health**

An essential service of public health that my practicum assessed was prevention at an early stage. A lot of the diseases that were being diagnosed were diseases that have paths of progression. If the path had been intercepted by a prevention method, there might have been a different outcome or dollar amount. My practicum also assessed the issue of cost in healthcare. Many diseases, if left untreated at an early stage, end up costing a lot of money. It is important to look at because these dollars can be used in another avenue of health care.

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### **Topic: Preparedness**

### **Title: Respiratory Protection Program for the Houston Department of Health & Human Services**

**By Melody Hernandez**

### **Public Health Significance**

The Respiratory Protection Program was a piece of the Public Health Emergency Preparedness Grant Deliverables for responder health and safety. Preparedness in the event of a pandemic flu outbreak is essential for the local health department to make an effective and timely response. Public health officials need to be able to protect themselves first, which is why education and training on the necessary personal protective equipment (PPE) is vital.

The potential severity of health risks associated with pandemic influenza is not something to be ignored, especially in light of recent events. Due to airborne transmission, responders need to wear respirator masks at all times to help ensure protection against the routes of exposure. The type of respirator that is used is called the N95 filtering face-piece particulate respirator. Since airborne biological agents are particles, this type of respirator can filter them. Another part of responder protection is the way that the respirator fits the face. A proper tight face seal is essential for the success of the N95 mask, which is what makes fit-testing the responder so important.

### **Approach**

The focus group for this program is all essential personnel who would be the health department responders designated to report to City of Houston Point of Dispensing (POD) sites. The program consists of three steps: awareness training, medical evaluation, and fit-testing, all of which need to have accurate record keeping. The first step was made electronic and available on the HDHHS intranet for easy access. The awareness training video from 3M (the manufacturer of the N95 respirators) automatically runs after the employee logs in with an assigned user ID and covers topics of respirator storage, inspection and proper use. After the video, they are given three chances to pass a True/False quiz and then brought to a medical questionnaire. All information is tracked electronically so I can see who has completed the program and whom I still need to remind. The medical information is automatically sent to the employee health nurse who either passes them on to fit-testing or deems them physically unable to wear a respirator. Those who pass then attend a scheduled fit-testing session where they go through very specific steps to ensure a proper fit and face seal. Beforehand, I had recruited several volunteers to attend a “Train the trainer” fit-testing class from a local 3M representative. They were taught how to perform fit-testing on others, and they are the ones to fit all of the essential personnel.

### **Findings**

At the end of my practicum, all essential personnel for the Houston Health Department had been thoroughly documented as having completed the Respiratory Protection Program. They are now prepared to safely respond to a pandemic influenza outbreak for the city of Houston. I also put together a documentation process report for the Public Health Preparedness supervisor in charge of the entire deliverable.

### **Essential Services of Public Health**

My program focused on Public Health Preparedness and Responder Health & Safety, which are two very important services in the field of Public Health. Preparedness measures prevent chaos and disorder and protecting the safety of those who voluntarily put themselves in the way of danger and health risks is an essential part of successful disaster response.

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### **Topic: Rabies Eradication**

### **Title: Evaluation of Ongoing Rabies Eradication Efforts in Bohol, Philippines**

**By Melissa Nolan**

### **Public Health Significance**

Rabies is a zoonotic disease that is caused by a Lyssa virus. The World Health Organization estimates that over 55000 people die every year from this disease ([www.who.int](http://www.who.int), 2009). Internationally, transmission varies between different indigenous reservoirs; however, in the Philippines rabies is transmitted primarily through bites

from infected stray dogs. Typically, the virus is transmitted by inoculation from infected saliva into the skin at the bite source. Once infected, the virus attacks the Central Nervous System and brain. This disease is prevented by both vaccinations and post-exposure treatment. Unfortunately, for those who do not receive either therapy, rabies is almost always fatal.

### **Approach**

The World Health Organization is currently implementing three pilot programs to eradicate rabies. One of these programs is on the island of Bohol in the Philippines. More information on these ongoing efforts can be found at [www.who.int](http://www.who.int). Myself, along with five other team members from the University of Texas, School of Public Health, were invited to evaluate the current efforts on this island. In a collaborative effort with multiple partners, we chose to evaluate the project with questionnaires administered by our team members and staff from the Office of the Provincial Veterinarian (OPV).

Using the Epi Cluster sampling method, we randomly selected 46 clusters to be surveyed. From each cluster we interviewed a minimum of 10 households with a total of at least 10 owned dogs per cluster. The questionnaires assessed knowledge of rabies, attitudes and beliefs of rabies, treatments for bites, care of dogs, functions of owned dogs, percentage of dogs vaccinated for rabies, etc. At the end of the surveys, we distributed pamphlets, provided by the OPV, with information on rabies. In total we interviewed 460+ households. Finally, we entered all surveys into Epi Info version 3.3.2.

### **Findings**

Analysis of the data is to be completed by Stacy Davlin, MPH as a part of her dissertation project. The final analysis will be made available publically at Ms. Davlin's dissertation defense later this academic year.

### **Essential Services of Public Health**

This practicum helped to control endemic outbreaks of a deadly disease while increasing access to medical care for those afflicted.

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### **Topic: Sanitary Sewers**

### **Title: Annual Monitoring for Sanitary Sewer Release and Silver Recovery**

**By Laurie LeBlanc**

### **Public Health Significance**

The Environmental Health and Safety (EH&S) department at the University of Texas-Health Science Center primary mission is make sure people go home as health and as safe as they arrive. One division of EH&S is called the Environmental Protection

Program (EPP), which is responsible for hazardous waste disposal. This is important because reduces the amount of exposure people have to hazardous wastes. EPP also is responsible for annual monitoring of sanitary sewer releases and silver recovery from x-ray processors. The purpose of annual monitoring is to verify that the UT-HSC is not disposing of hazardous waste in the sanitary sewer system, which is subsequently released into streams and bayous.

### **Approach**

#### *Sanitary Sewer Release:*

Samples were taken from six different sanitary sewers. Each sample was taken by an ISCO sampler over a 24-hour period. Then the samples were analyzed for pH, Biological Oxygen Demand (BODs), Volatile Organic Compounds (VOCs), Resource Conservation Recovery Act (RCRA) metals, Total Suspended Solids (TSS), oil and grease, and formaldehyde.

#### *Silver Recovery:*

Photo processing units use a fixing solution to develop photos and the silver contained in the used fixing solution recycled through silver recovery units. The effluent should not have silver present in more than 5 parts per million (ppm). Silver recovery units prevent disposal of hazardous waste down the drain and the silver is recycled and sold. A sample was taken of the fixing solution before entering the silver recovery unit and another sample was taken of the effluent. The total concentration of silver was measured using copper strips that are able to detect up to 5 ppm.

### **Findings**

#### *Sanitary Sewer Sampling:*

The samples were taken to Environmental Chemistry and the results show that UT-HSC is in compliance with the Publicly Owned Treatment Works (POTWs) instituted by the City of Houston.

#### *Silver Recovery:*

Current influent concentrations indicate greater than 5 ppm before treatment and less than 5 ppm after filtration through the silver recovery. The silver recovery unit in the Dental Branch Building was not used for several months and has been replaced because the results were skewed.

### **Essential Services of Public Health**

These projects mainly addressed diagnoses and investigate health problems/hazards and enforce laws and regulations services of Public Health. Annual monitoring is performed to ensure compliance and to make sure people are not exposed to hazardous wastes that could be produced by the UT-HSC facilities.

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**Topic: Smoking Cessation**

**Title: Practicum Abstract**

**By Erich W. Schroeder**

**Public Health Significance**

This practicum, combined with my research project, could assist in guiding the formulation of policy and the development of programs to assist service members in smoking cessation. It also contributes to the overall understanding of mental health diagnoses, especially given the intense experiences of our service men and women. The ultimate goal of this practicum is improved health and readiness of service members.

**Approach**

Previous research has shown an association between mental health status and cigarette smoking. This practicum and research project examined four specific mental health predictors and the outcome variable any smoking, defined as smoking one or more cigarettes in the past 30 days. The population included active duty military members serving in the United States Army, Air Force, Navy and Marine Corps. The data was collected during the 2005 Department of Defense Survey of Health Related Behaviors Among Active Duty Military Personnel, a component of the Defense Lifestyle Assessment Program. Air Force Medical Operations personnel, to include our preceptor, guided us during this endeavor.

**Findings**

The sample size included 13,603 subjects. This cross sectional prevalence study consisted of descriptive statistics, univariate analysis, and multivariate logistic regression analysis of the four mental health predictors and the any smoking outcome variable. Multivariate adjustment showed an association between the four mental health predictors and any smoking. This association is consistent with previous literature.

**Essential Services of Public Health**

This practicum and project primarily addressed the public health essential service of “Develop policies and plans that support individual and community health efforts.”

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**Topic: State Health Services**

**Title: Texas Department of State Health Services, Region 8**

**By David Rogers, MD**

My practicum experience involved observation and participation with different departments within the Region 8 headquarters in San Antonio, TX. The emphasis area for this practicum involved policy implementation between the state, regional, county, and local levels. The approach of this practicum was self-driven, close interaction with sub-offices in the headquarters building. After introduction and orientation with Dr. Sandra Guerra, Region 8 medical director, I rotated through various departments depending on current activity. I started with the epidemiology department, working on an outbreak investigation of TB within a school. We actually went to the facility to assist with PPD placement for students and were involved with coordination/communication with the school administration, the school nurse, parents, and students. Next, an opportunity to spend time with both the asbestos program inspector/investigator and the environmental lead inspector. I learned these two positions were actually funded and owned by the state-level, but were positioned within the region HQ. Very valuable perspective was gained in those areas. Next I spent time with the disaster preparedness staff where I gained an understanding of their role and operating processes during emergency scenarios. There was fortunately (for learning, not fortunate for those affected) large amounts of recent experience given recent hurricane activity. I toured some of their mobile command control equipment. Next things took on a life of their own when the novel H1N1 (“swine flu”) outbreak occurred. Myself and several other classmates were called in to assist the center in numerous ways. Since we were all experienced physicians, we helped operate the hotline to answer questions from the community. This helped a great deal to relieve the workload on the provider-type staff who were in short supply. I learned much about risk communication and disaster coordination as I attended the update briefings between national, state, and regional levels. I later had the opportunity to attend a state-wide conference on disaster preparedness, which included the Basic Disaster Life Support course. Finally, I had the opportunity to travel to the Texas State Legislature in Austin and see first-hand how public health policy is made within the state. We met several Representatives and discussed public health policy with several Representative staff members. I was impressed with how effective our communication with legislators can be toward driving policy change. Finally, I highly recommend this practicum to increase knowledge and experience in regional level public health policy and practice.

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**Topic: Tuberculosis**

**Title: School Screening for Tuberculosis in High Risk Areas of Texas**

**By Mary T. Brueggemeyer, MD**

**Public Health Significance**

Screening for latent tuberculosis infection (LTBI) is an integral component of an effective tuberculosis control strategy, but one that is often relegated to the lowest priority. In a state with higher than national average rates of tuberculosis, due consideration should be given to LTBI screening. Recent large scale contact investigations in the middle school of Del Rio, Texas, raised questions about the status of school screening for LTBI.

**Approach**

An evidence based approach as described by Brownson, et al. (2003) was used to evaluate school screening in high risk areas of Texas. An Initial Statement of the Issue was created which outlined four main components: Background and Epidemiological Data, Questions about the Program, Potential Solutions Being Considered and Potential Outcomes. The project focused on collecting background and epidemiological data that better characterized the status of school screening for tuberculosis in high risk areas of Texas and resulted in a revised Statement of the Issue.

**Findings**

A review of the literature revealed that the current recommendations for LTBI screening in children are based on administration of a risk factor questionnaire. The questionnaire should be based on the four main risk factors for LTBI in children that have been identified. The current coupling of school screening recommendations to classification of county based on “highest” and “higher risk categories may be misleading. The three year average rate of tuberculosis may not represent the true burden of tuberculosis in the school population.

Six representative areas in Texas were identified for evaluation of the occurrence of contact investigations in schools for the period of 2006 to 2009 and any use of school screening programs. Of the five reporting areas that responded, only one utilized a school screening program; this reporting area had the lowest percentage of contact investigations occurring in schools. Contact investigations were most common in middle schools and least common in elementary schools. In metropolitan areas, colleges represented up to 42.9% of contact investigations. The number of contact investigations has increased from 2006 to 2008. This report represents a small sample, and further research into the frequency, distribution and risk for contact investigations in schools and the efficacy of screening programs should be done. The local health authority should conduct an evidence-based needs assessment for school screening of tuberculosis to determine if one is needed for that community. Whether a proactive (screening) or reactive (contact investigations only) approach is followed, the frequency

and distribution of contact investigations in the school population and program efficacy should be monitored.

### **Essential Services of Public Health**

This practicum-based culminating experience addressed the following essential functions of public health: 1. Monitor health status to identify community health problems and 2. Develop policies and plans that support individual and community health efforts.

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### **Topic: Tuberculosis**

### **Title: Analysis of Data from Bi-National Tuberculosis Patients Using SAS**

**By Reyna C. Ponce**

### **Public Health Significance**

Tuberculosis (TB) plays an important role in order to control leading health problems related to infectious diseases worldwide. Currently, about 1/3 of our worldwide population is infected with TB, and roughly 1.6 millions of individuals infected with TB die every year. (Jeon) To add to the problem it seems as if TB had found its perfect match, diabetes mellitus (DM). In places like India, where diabetes was estimated to affect 20-30 million people in 2000, it has been projected that the numbers will rise to 80 million by 2030. (Stevenson) It is inevitable that the day that we have a diabetes epidemic coming our way. A red flag has risen since DM and TB are known to be associated with each other. (Leung) DM is known for the toll that it takes on the body of an individual making the individual more susceptible to TB. Although for years the United States has kept TB incidence at “historic low levels,” worry rises since we have a growing DM epidemic, this could lead to a rise in TB cases. (Taylor) Therefore it is necessary to better understand the association between TB and DM.

### **Approach**

Methods:

- a) Create a SAS program in which non TB patients were excluded from the database, as well as patients missing a diagnosis for TB.
- b) Only participants who are 20 years and older will be taken into account for the study.
- c) Create a SAS program to analyze how DM relates to the following variables: C-Reactive protein, SGPT, albumin, SGOT, bilirubin direct, triglycerides,

cholesterol, high density level cholesterol, low density level cholesterol, total and high density level cholesterol ratio and insulin level.

- d) Create a SAS program to analyze the role that the following play in DM:
  - i. Sociodemographics: age, gender, country of enrollment, education level, employment and number of persons per household.
  - ii. Social risks for TB: alcohol abuse, drug abuse, history of incarceration, and cigarette smoking.
  - iii. Medical risks for TB: BMI and HIV

### **Findings**

After analyzing data it was concluded that there is no significant difference between liver function lipid metabolism and inflammatory response among the Mexican population DM+ or the DM- patients.

### **Essential Services of Public Health**

Research New Insights/ Innovative solutions to health problems.

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**Topic: Worksite Wellness**

**Title: Practicum Abstract**

**By Julie Griffith**

### **Public Health Significance**

Worksite wellness is a rapidly growing industry seeking to address the health and wellbeing issues of working people. The benefits are seen in both the improved health

of the employee as well as improved productivity, decreased absenteeism, and decreased health care costs for employers. Considering Americans spend a quarter of their lives at work, and the demands of their work affect their health behaviors, workers constitute a captive audience for wellness programs (Schulte et al, 2007). Obese employees have higher disability use, workplace injuries and use sick leave more often compared to healthy weight activities (Schmier et al. 2006). Worksites are quickly discovering the advantages to offering wellness programs to employees.

### **Approach**

The lessons and experience I have gained while interning with Medifit at the Woodcreek Shell Wellness Center will transcend into many aspects of my future career. As a master student working towards a degree in Health Promotion and Behavioral Sciences, many aspects of future career situations were present throughout this internship. One of my largest contributions to my practicum was the development and implementation of an employee wellness program called “Be All You Can Be” Summer Fitness Challenge. The program was aimed at increasing participant’s fitness in three core exercises: pushups, sit-ups and squats. My involvement in the program consisted of; creating the program title, sending out weekly motivational emails to participants located in various Shell sites around the United States, pre-testing participants, conducting weekly fitness classes focused on these specific exercises, developing program incentives, and personally participating and displaying my own personal results in the wellness center each week.

### **Findings**

Participants in the “Be All You Can Be” Summer Fitness Challenge were pre-tested and post-tested on their fitness scores at the beginning and end of the six week program by a health fitness specialist in the wellness center. Participants were encouraged to record their weekly results. As this program was a self-directed program for employees to improve on their original scores, an outcome evaluation was not conducted. The program was well received and the feedback from participants was positive. The suggested improvements I would make for the program would be to encourage participants to email or log their weekly results to the wellness center staff, to increase accountability and competition within the program.

### **Essential Services of Public Health**

Although my practicum experience consisted of many additional features and activities essential to improving the health of Shell employees, this particular project intended to inform, educate, and empower employees to increase their fitness levels. Providing employees with information and demonstrations on the proper exercise form, weekly fitness classes in the wellness center directed at improving their fitness levels, motivational emails, and providing self-directed worksheets to track their individual progress helped aid in educating and empowering employees to improve their strength.

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