Introduction

The Office of Public Health Practice has the opportunity to publish the e-book of abstracts for the summer of 2008. Students at the end of the semester had the opportunity to submit their abstract for the e-book. All the abstracts we have, gives us the unique opportunity because the results are not widely shared and disseminated to others. The Office of Public Health Practice presents these abstracts for fellow students, faculty, and community preceptors to highlight their experience. The spring semester projects represented a wide variety of opportunities with regards to topics and settings. The abstracts in this e-book only represent students who chose to submit their experience for that semester.
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Topic: Access to care policy

Title: Legacy Advocacy Policy Project

By Percetta Curl

Legacy Community Health Services provides a wide range of health services to medically underserved communities including the underinsured, non-insured, migrant workers and non-citizen visitors. As a Federally Qualified Health Center (FQHC), Legacy offers comprehensive primary and preventive health care services in a compassionate, non-judgmental environment irrespective of ability to pay. In addition, Legacy offers wellness programs, STD and HIV testing, social and health education services, and serves as an advocate for those unable to help themselves.

Public Health Significance
FQHCs have become an essential component of the U.S. healthcare safety net as the number of uninsured and under-insured have grown in recent years. Having served one quarter of all low-income persons in 2005, health centers have become the single largest source of comprehensive primary health care for this population.\(^1\) Studies continue to show that people who do not have a usual primary source of health care ultimately results in higher costs for everyone.

A 2003 Institute of Medicine report cited by Fronstin indicates that lost work place productivity due to inadequate healthcare costs the U.S. between $65 and $135 billion annually.\(^2\) A recent collaborative study conducted by the National Association of Community Health Centers (NACHC) found that the use of FQHCs results in substantial healthcare system savings.\(^3\) By providing a usual source of primary and preventive care for the medically underserved, FQHCs reduce costly emergency room visits and avoidable hospitalizations. The savings from serving approximately one quarter of the uninsured and under-insured range from $10 - $18 billion per year. The savings increase as the number of uninsured / under-insured increases.

Approach
After developing an advocacy survey to identify issues of importance to FQHC providers, I conducted research on federal and state legislation and
policies affecting FQHCs. This research provided background and input to the development of several policy statements to be pursued in the next Texas legislative session.

**Findings**

In developing policy position statements, I focused on issues that affect funding, a major challenge faced by FQHCs. The policy recommendations include:

- Regulation of rates paid by private commercial insurers who reimburse FQHCs at a rate of 57% compared to 87% and 70% by Medicaid and Medicare, respectively.
- Revenue sharing between FQHCs and county hospitals of the hospital district property tax since both groups provide services to the same indigent population.
- Direct funding by the state of FQHCs through the incubator program based on demonstrated cost savings generated by Community Health Centers.

**Essential Services of Public Health**

Legacy contributes to public health by assuring the quality and accessibility of health services to underserved communities. Legacy makes its contributions through its service offerings, health education, policy development, and health promotion.

**References**


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Public Health Significance
My practicum experience took place in the Office of Public Health Practice at the Houston Department of Health and Human Services (HDHHS). The main objective of my project was to help assure a competent public health workforce for the City of Houston.

As the fourth largest city in the U.S. that hosts a diverse population with varied needs, Houston needs a strong local public health department to serve its community. The local health department plays a huge role in protecting and promoting the health and social well-being of Houstonians, providing such services as immunizations, disaster preparedness, public health surveillance, HIV/STD prevention, low-cost health clinics, air and water quality control, food inspections, animal control, etc. To best serve the public, HDHHS must strive to protect the health of Houstonians in the best and most efficient ways possible.

Approach
To this end, I sought to encourage a system of continuous improvement to enhance the public health workforce, build internally, and counteract attrition rates. The main activities of my project were the development of a recurring (every 2 year) all-employee survey, roll-out plan, and post-survey follow-up action plan process.

Developed using reliable survey tools from the literature and tailored to HDHHS based on feedback from employees at all levels, the all-employee survey addressed topics such as skill and training needs, work environment, manager effectiveness, etc. The survey results intend to help HDHHS capitalize on its strengths, identify areas that need improvement, and inform organizational development initiatives that are currently in the development phase (accreditation process, evaluation emphasis, leadership academy, diversity initiatives, etc.).
As part of the roll-out process, my team and I made presentations to various employee groups to share information, gather feedback, answer questions, and encourage participation in the survey. Several communication materials were also developed. Pilot tests were conducted on the survey instrument before it was finalized. The survey was made available to all employees using Survey Monkey or paper copies over a 3-week period.

I also coordinated with employee groups and the Partnership Council, which served as an informal steering committee, to create a detailed post-survey action plan process to try and ensure that survey results are meaningful and used.

Findings
My portion of the final product will be in the format of a report of the survey findings. The survey period is not yet over, so there are currently no findings to report.

Once the post-survey action plan process is finalized and approved, the final product will also consist of the action plans that each Division and Bureau will develop based on the survey findings.

Essential Services of Public Health
My practicum project activities primarily addressed Essential Public Health Service # 8: Assure a competent public and personal health care workforce.

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Topic: Barriers For Caring Seriously Ill Children

Title: Defining barriers in caring for seriously ill children in a resource-limited setting: An observational study of 2 children’s hospitals in Haiti

By Heather Chandler

Background
According to the WHO 2007 country report, Haiti lags behind the Millennium Development Goal of reducing child mortality and maintains the highest under-5 mortality rate in the Western hemisphere. Overall, few studies exist that seek to better grasp barriers in caring for a seriously ill child in a resource-limited setting and only a handful propose sustainable, effective interventions.

Objectives
The objectives of this study are to describe the frequency of serious illnesses among children hospitalized at 2 children’s hospitals in Port au Prince, to determine the barriers faced when caring for seriously ill children, and to report hospital outcomes of children admitted with serious illnesses.

Methods
Data was gathered from 2 major children’s hospitals in Port au Prince, Haiti (Grace Children’s Hospital and Hopital d l’Universite d’Etat d’Haiti) using a triangulated approach of focus group discussions, physician questionnaires, and retrospective chart review. 23 pediatric physicians participated in focus group discussions and completed a self-administered questionnaire evaluating healthcare provider knowledge, self-efficacy, and perceived barriers relating to the care of seriously ill children in a resource-limited setting. A probability sample of 240 patient charts was abstracted for pertinent elements including sociodemographics, documentation, treatment strategies, and outcomes. Independent predictors of mortality were analyzed using $\chi^2$ test and Fisher exact test [Minitab v.15].

Results
The most common primary diagnoses at admission were severe malnutrition (21%), gastroenteritis with moderate dehydration (19.4%),
and pneumonia (16%) for GCH, and sepsis (23%), severe respiratory distress (15.7%), and severe malnutrition (14%) for HUEH. Overall, 12.9% and 27% of seriously ill patients presented with “shock” to GCH and HUEH, respectively.

Shortage of necessary materials and equipment represented the most commonly reported limitation (18/23 respondents). According to chart data, 9.4% of children presenting with shock did not receive a fluid bolus, 0% of sent blood cultures returned a result, only 8% of patients presenting with altered mental status or seizures received a glucose check, and 65% of patients with meningitis did not receive a lumbar puncture due to lack of materials.

Hospital mortality rates did not differ by gender or by institution. Children who died were more likely to have a history of prematurity (40% vs 14.5%, p=0.06), an incomplete vaccination record (13.6% vs. 31.2%, p=0.05), or a weight for age <3rd percentile (p<0.001). Case-fatality rates were significantly higher among those who presented with signs of shock compared with those who did not (23.1% vs. 10.7%, p=0.04). Caregivers did not achieve shock reversal in 21% of patients and did not document shock reversal in 50% of patients.

**Conclusions**

Many challenges face those who seek to optimize care for seriously ill children in resource-limited settings. Specifically, in Haiti, qualitative and quantitative data suggest major issues with lack of supplies, early recognition and management of shock, and patient co-morbidities, including malnutrition. A tailored intervention designed to address these issues is needed in order to prospectively evaluate improvements in child mortality in a high-risk population.

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Topic: Behavior Change in Recently Diagnosed HIV Positive Individuals

Title: Behavior Change in Recently Diagnosed HIV+ Individuals

By Rachel Marks

Public Health Significance
In 2008 the Center for Disease Control and Prevention (2008) reported that over 50,000 Americans were newly diagnosed with HIV. Since the introduction of Highly Active Antiretroviral Therapy or HAART in the mid 90s the incidence of death due to the progression of HIV to AIDS has dramatically decreased. The life expectancy for HIV+ individuals has greatly improved in the past fifteen years. With this increase in life expectancy researches are beginning to focus their efforts on prevention of HIV and smoking related diseases in order to improve the quality of life for this unique patient population. Previous research shows extremely elevated rates of smoking among HIV+ individuals as compared to the non-HIV+ population. Elevated rates of tobacco use in the HIV+ community puts this population at great risk for smoking related diseases including cancers. Additionally, studies show that cigarette smoking compounds the effects of HIV, and individuals who are both HIV+ and tobacco smokers report lower QOL and have higher rates of smoking and HIV related cancers such as lung, and cervical cancers. Smoking cessation in the HIV+ community will not only improve the immediate quality of life in these individuals but will also help prevent smoking and HIV-related cancers.

The present study is interested in the effect of HIV diagnosis with regards to attempts to make behavioral change. The study aims to determine if time of diagnosis is a “teachable moment” or if is too overwhelming for patients to consider making behavioral changes such as smoking cessation. Better understanding the effects of HIV diagnosis and the motivations at the time of diagnosis will assist researchers in tailoring smoking cessation programs to this patient population and lowering the prevalence of smoking in these individuals (Vidrine, 2007).
Approach
I assisted in year 1 of the study focusing on preliminary information and supply gathering. My duties included in-depth reading and understanding of the intervention. I worked with the PI to collect the study measures, both in English and Spanish assisting with translation and verification of the Spanish measures. Study measures included previously validated questionnaires focusing on smoking and HIV related outcomes such as the Fagerström Test for Nicotine Dependence, the Contemplation Ladder to measure interest in quitting smoking and various questionnaires from the Medical Outcomes Study HIV Health Survey (MOS-HIV). I also assisted in the preliminary stages of creating the intervention’s Manual of Procedures.

Findings
Collected study measures in English and Spanish.
Preliminary work on the study’s Manual of Procedures.
Towards the end of my practicum I had the opportunity to work on an abstract that I will submit to the Society for Behavioral Medicine’s 2009 annual meeting.

Essential Services of Public Health
My practicum opportunity focused on the essential public health service of Research. It is the hope of the researcher that this study will help identify the most opportune time for a smoking cessation intervention in HIV+ individuals.

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Topic: Breast Cancer Survivorship

Title: SPIRIT- Sisters Peer Counseling In Reproductive Issues After Treatment

By Meera Balasubramaniam

Public Health significance
The public health significance of this project is that it focuses on breast cancer survivorship among young African-American women, a group with a high prevalence of disease and limited access to health care services. This can be termed “care beyond cure.” The study mainly deals with reproductive and sexual issues among these women – their levels of knowledge on how to manage symptoms, their well-being, and their satisfaction with an innovative peer counseling program. Besides obtaining information on the women’s perception of this research-based treatment, this study also serves as a test of cost-effectiveness. Almost 300 women were randomized to get a written workbook on menopause, sexuality, and reproduction after cancer, either along with three one-hour in-person sessions with a trained peer counselor, or with a phone card entitling the participant to up to 30 minutes of phone time with a counselor. If the full peer counseling program did not create better outcomes, the cost of training the peer counselors may not be worthwhile.

Approach
My practicum was to participate in part of the data analysis from the SPIRIT program – a partnership between MD Anderson Cancer Center and Sisters Network, under the guidance of my mentor, Dr. Leslie Schover, the Principal Investigator of this study. The study included young African-American Breast cancer survivors who were diagnosed at least one year previously and who were not currently receiving radiation or chemotherapy. Participants completed questionnaires at four stages – at enrollment, immediately after counseling and at six and twelve months after counseling. In addition, the youngest 10% of the participants were invited to participate in a supplemental phone interview to ask more detail about how their cancer affected their lives and relationships.

The content of the interviews included the participants’ reaction to diagnosis, the issues concerning them, the social support they received,
their coping styles, the quality of medical care and the completeness of information provided by their medical practitioners about reproductive and sexual issues. The participants were also asked to describe their experience with breast cancer as African-American women; what it meant to them, whether they faced any discrimination as well as their overall adjustment with the illness.

My role in this qualitative part of the research study was to read and interpret transcribed versions of these audio taped interviews, each lasting sixty to ninety minutes, for the purpose of identifying relevant themes. The themes identified would then be the focus of developing a coding system for in-depth analysis.

Findings
The study is currently in the process of analysis. My observations of the interviews during this process are as follows:
- A higher incidence of issues related to appearance among younger women.
- Need for greater emotional support, particularly from the partner.
- The participants expressed an overall satisfaction with the medical treatment provided for the cancer. However, reproductive issues, including options like embryo freezing to preserve fertility were not been discussed in many cases. Adequate information regarding sexual health has not been provided in most cases.
- As African-Americans, some women expressed that breast cancer held a different meaning to them because of a relatively lower awareness and more stigma associated with it in their community.
- Support groups and peer counseling were stated as helpful in coping by many participants, particularly when they could meet and relate to survivors from similar backgrounds.

Essential services of Public Health
The aspects of Public Health covered in this study include Health promotion and Health education. The project has the potential to identify needs and assess knowledge, attitudes and practices with the overall goal of making one’s years after cancer diagnosis ‘life’ and not mere ‘survival’. Preliminary analyses of the quantitative data were just completed this week. The women in both groups had significant gains in their knowledge of specific reproductive health information covered in the workbook. They also had significant reduction in hot flashes, though no clear changes in
their sexual function. Women in a committed relationship had improved relationship happiness over time. However, the women who got the full three sessions of peer counseling had a reduction in levels of depression not seen in the phone contact group.

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Topic: Burmese Refugees

Title: Health Need Assessment and Health Educational Tools for the Burmese Refugees in Houston

By Hlaing Min Swe

Public Health Significance
Refugees are those who have been forced to flee their home country due to war or persecution based on their race, ethnicity, religion, political opinion, or membership in a social group. In January 2008, UNHCR documented that there was over 130,000 Burmese refugees residing in the camps along the Burmese-Thai border alone. Each year, hundreds of these refugee families arrive to Houston.

Refugee resettlement agencies, including Interfaith Ministries Refugee Services (IM), are helping these refugees to rebuild their lives and to become full contributing members of their new American communities in Houston. Recently, the Burmese refugees are coming in faster and in greater numbers than other groups which stretches the existing agencies’ resources.

Among their urgent needs, health is an inevitable issue. U.S. Committee for Refugees and Immigrants regards health promotion as an integral part of refugee resettlement and defines that a successful resettlement includes positive long-term health outcomes.

The objective of the internship is to assess the major health needs of Burmese refugees and to develop educational tools for them.

Approach
The target group is the Burmese refugees supported by IM. Planning and orientation to the resettlement work was an important first step to start. Key informant interviews (KII) with case worker and other staffs and
small group discussion with Burmese refugees were conducted. In order to get an comprehensive overview, KII with case workers from other agencies were also made – Catholic Charities of the Diocese of Galveston/Houston, YMCA of Greater Houston Area, Alliance for Multicultural Community Services, Refugee Services Alliance and Harris County Health Department Clinic. Their major health needs and related behaviors, traditions and customs, access to health care, identifying ways to address and choosing media to disseminate were discussed. Then online search and literature review for existing educational tools was made before developing the new ones.

Findings
Refugee resettlement agencies helped refugees settle in United States in various ways, particularly for initial 4-6 months:
- Providing cultural orientation, in-kind and in-cash assistance for first few weeks, housing, health screening/vaccination/referral arrangement, helping enroll in English class, assistance in job hunting, application for Food stamp, Social Security card, Medicaid, Medicare, SSI and employment authorization and getting children into school.
Because of the abrupt transition from the refugee camps to US, there were enormous challenges faced by the refugees. Lack of English language skill, education and vocational skills were major challenges for their long-term survival.

As they had been in exile for at least a decade or longer, their health condition was also at risk. From the interviews and discussion conducted, the five most needy health problems were: cross-cultural/social communication with health care providers, Family planning, Nutrition, TB treatment follow-up, and, Personal hygiene and sanitation. In some cases, mental care and counseling was also critical in the initial period.

While developing the educational tools, their broader social and cultural factors were considered and incorporated. The findings and the draft tools were presented and discussed with the agency. Necessary facts were already gathered to develop information brochure. Transcripts and outline sketch for the video clips were developed and video shooting was being conducted by the time report was due.
Essential Services of Public Health
The internship addressed diagnosing and investigating health problems and educating refugee people whereas cultural competency Skill, analytic/assessment skill and communication skill was exercised.

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Topic: Cancer Care

Title: Customization of controlled vocabulary for specialized cancer care

By Zhen Zhang

Public Health Significance
As the effective preventions and treatments of infectious diseases have been discovered, cancer becomes one of the biggest public health burdens. Cancer care is complicated and effective treatments are still under the process to be discovered. To increase the efficiency of cancer care to serve both clinical purpose and discovery purpose is very beneficial to reduce this big public health burden.

Approach
The clinical and discovery purposes of cancer care result in its data-heavy characteristics. To handle the huge amount of data associated with cancer care efficiently, computerized information system is the best tool to adopt. Computerized information system is not just to restore the data electronically, but also to divide some of the data processing tasks to the computer. To let the computer do some data processing tasks, the first step is to build a controlled vocabulary. A controlled vocabulary means to map several terms with the same meaning to a standard term. This way the computer can “read” the standard terms more accurately. Although UMLS has combined multiple terminology databases including a controlled vocabulary database SNOMED, many terms used in cancer care to serve both the clinical and research purposes are not included in these available terminology databases. Therefore, customization of controlled vocabulary is necessary to increase the efficiency of cancer care.

Findings
My final product is a customized controlled vocabulary. However, because of the time limitation of this internship, only a pilot project of vocabulary
customization has been accomplished. This pilot project uses several physician notes of cancer care. The mapping to standard terms was checked manually and inappropriate mapping was identified. Then a standard term was found manually and either the mapping was changed or the standard term was added into the customized controlled vocabulary.

**Essential Services of Public Health**
This project addressed the essential public health service —- to evaluate the effectiveness, accessibility and quality of personal and population-based health services. With more efficient information system, cancer care will be more cost-effective and the quality will be enhanced.

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**Topic: Cardiac Effects of Anthracycline Therapy in Long-Term Survivors of Pediatric Cancer**

**Title: Development of a database to study the cardiac effects of anthracycline therapy in long-term survivors of pediatric cancer**

By Brady S. Moffett, Pharm.D.; Michelle Grenier, M.D.; Fatih Okcu, M.D., M.P.H.

**Public Health Significance**
As medical care improves, more patients that develop cancer in their childhood years go on to survive well into adulthood.1 The long term effects of many of the medications used to treat cancer in childhood are unknown, and could represent a significant chronic disease burden. In particular, the cardiac effects of anthracycline chemotherapeutic agents in long-term survivor’s of pediatric cancer can be devastating.2,3 Identification of these adverse events, and patients at risk for these adverse events, can improve treatment of pediatric cancer and limit the future disease burden.

**Approach**
A data abstraction form was prepared with the input of the supervising physicians, and revised according to available data and the goals of the project. Subsequently, a database was developed by reviewing hospital records, outpatient records, and the records from the long-term survivor’s clinic at Texas Children’s Hospital.
Findings
The final product is a database prepared for analysis. A total of 747 patients were initially screened for exposure to anthracycline chemotherapeutic agents, resulting in a database consisting of 100 patients that met inclusion criteria. Further analysis of the database will result in the identification of signs and symptoms of cardiac toxicity in the patient population.

Essential Services of Public Health
This project addresses the evaluation of the effectiveness, accessibility, and quality of personal and population-based health services. It also is part of research for innovative solutions to public health problems. The results of the final analysis can be used to develop policies for screening of long-term survivors of pediatric cancer, and will help to diagnose and investigate health problems in our community.

References
Public Health Significance
Changing work, workforce, and work environments directly impact incidence and prevalence of occupational injuries and illnesses. With ever increasing numbers of businesses allowing employees to work a more flexible work schedule (~25% of all workers), there might be a shift from office-based musculoskeletal disorders (e.g. carpal tunnel) to automobile accidents or disorders related to the use of electronic devices (e.g. driving while on cell phone) among workers that run errands during the work day. A shift can be seen between injuries that occur in a stationary building to those that occur out in the on-the-go community on a regular basis.

Shifts can also be seen as corporations globalize and move work operations to new U.S. or other global locations. Injuries and illnesses that had once been predominately prevalent in developed countries, like repetitive stress disorder, carpal tunnel, and silicosis, may have growing prevalence in developing countries where more traditional public health illnesses had reigned supreme (e.g. TB, malaria, etc.). The transfer of technology is often accompanied by a transfer in occupational injuries, illnesses, and fatalities.

It is important to identify these trends in changing work and ongoing (and future) Federal research in order to ensure continuity with the needs of working Americans and the policies and research related to them.

Approach
I was given authority and autonomy within NIOSH in order to email and call NIOSH researchers to identify the changing nature of work in their program areas (healthcare, services/public safety, mining), summarize their current research (in meta-analysis fashion), and identify areas for future research. I summarized all of my research and their feedback into a document, submitted it to NIOSH leadership, and gave a one-hour presentation to NIOSH leaders and researchers on my final day.
Findings
Ultimately, globalization, outsourcing, mergers, acquisitions, technology, and recent disasters (terrorism, mines, and construction fatalities) are responsible for the nature of work changing and ultimately are creating a shift in occupational injuries and illnesses (quickly summarized above). The report that I did focused on healthcare and social assistance, mining, and services including public service. I crafted a 13-page document which included a summary of the changing nature of work around the globe, summarized current NIOSH research and programs related to those elements (in narrative & tables), identified saturation and gaps in research, and offered suggestion for future NIOSH research funding. The report was quite poignant and important for NIOSH leadership as they journey into a new Presidential leadership in January, as they will need to know the global trends and changes in work and the relevant effects on worker safety and health policy and research in order to ensure occupational public health and economic stability.

Essential Services of Public Health
(1) Research for new insights and innovative solutions to occupational health trends in order to (2) develop policies, plans, and research agendas that support National occupational safety and health efforts.

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Public Health Significance
Chickenpox is caused by the Varicella Zoster Virus (VZV). It is a highly contagious pathogen infecting 80% to 90% of exposed people.\(^1\) The live attenuated Varicella vaccine was approved by the United States in 1995 and was recommended for universal administration as 1 dose to children 12 to 18 months of age.\(^2,3\) Consequently, the rate of varicella disease decreased as well as related morbidity and mortality rates.\(^4,5\) As of June 2008, there are approximately only 37 states that mandated at least one dose of varicella vaccine as a requirement for both school and daycare entry, while 3 states still do not require any varicella vaccination at the time of school entry.\(^6\) Outbreaks of varicella disease continue to occur even in well vaccinated populations, and the number of reported cases have not declined in recent years. The occurrence of most varicella outbreaks is known as “breakthrough” disease. Breakthrough disease is defined as wild type disease greater than 42 days after immunization, clinical manifestations are usually mild with fewer than 50 lesions.\(^7,8\) Studies have clearly indicated that the administration of one varicella injection to healthy children have significantly decreased the rates of varicella disease. However, the administration of 2 doses of varicella vaccine decreased the rates of breakthrough varicella disease and increased the vaccine efficacy.\(^9,10\)

We investigated a chickenpox (varicella) outbreak that occurred in a Texas elementary school on April 19, 2008 through April 29, 2008. Based upon survey responses we wanted to investigate and evaluate the parents’ awareness concerning the chickenpox outbreak, the attitudes of the parents towards a 2\(^{nd}\) dose of varicella vaccine and we wanted to know if there was interest concerning a varicella vaccine clinic held at the school site.

Approach
An outbreak of Chickenpox occurred at a Texas Elementary School during April 19, 2008 to April 29, 2008. Twenty five students were affected by this outbreak. A total of about 375 students are enrolled in the
school. The outbreak involved 11 classrooms infecting students from Kindergarten to 5th grade. 262 surveys were distributed to the school site during the month of May 2008. The surveys were completed by the parents of the children in the 11 classrooms that were involved with the chickenpox outbreak. Each classroom involved had at least one confirmed case of chickenpox. The survey addressed the awareness of the chickenpox outbreak as another section of the survey focused on the attitudes towards a 2nd dose of the varicella vaccine.

Findings
Out of the 262 surveys distributed, 192 were returned for a response rate of 73.7%. Of the 192 respondents, 140 parents (72.9%) said they were aware of the chickenpox outbreak in their child’s school. The majority of parents (73.9%) agreed to allow a varicella vaccine clinic in their child’s school. Concerning the attitudes towards a second dose of varicella vaccine, 55 parents of the 192 respondents (39.0%) believed their child had received a second dose already, while 33 parents (23.4%) were not aware of the second dose requirement. Based on these survey responses, we held a varicella vaccination clinic at the school and 66 (25.2%) children participated. Of the 66 students who attended the clinic 9.1% were documented as having no prior vaccination to varicella. Only 4 of the 66 students (6.1%) had documentation of receiving the 2 dose recommendation. A second dose of the varicella vaccine should be required at school entry, to hopefully reduce the number of outbreaks occurring of a preventable infectious disease.

Essential Services of Public Health
The two essential services of public health that was used for this project was inform educate and empower people about health issues and evaluate the effectiveness, accessibility, and quality of personal and population based health services. The survey administered to the parents at the Texas elementary school served as the tool of both informing and educating them on the varicella outbreak and the CDC recommendations of the varicella vaccine. We evaluated the effectiveness of the varicella vaccine clinic held for one day at the school.

References


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**Topic: Childhood Obesity**

**Title:** Addressing Childhood Obesity at the Children’s Nutrition Research Center

**By Paul Aguilar**

**Public Health Significance**
The childhood obesity epidemic in the United States has been well documented over the last few decades. The condition leads to increased mortality and enormous expenditures for our country. In a surprising step backwards, the current generation of children may have a shorter life span than their parents, due largely to the deleterious effects of obesity (Olshansky, 2005). Additionally, medical expenses attributed to overweight and obese children were estimated to be over $92.6 billion as recently as 2002, with about half the cost being paid by Medicaid and Medicare (CDC, 2007).

**Approach**
As part of Dr. Jason Mendoza’s research team, I was involved with validation studies for two projects that were designed to address this topic among HISD students. The first was related to a TV-viewing reduction and exercise program that will be implemented during the 2009-2010 school year. The program will center on a curriculum that will be incorporated into the existing Head Start agenda. I translated and evaluated interviews that were done with mothers of 4th grade children who are in Head Start. Looking for common themes, the information gleaned from these sources was summarized and will be used to construct a culturally relevant, bilingual program.

The second validation study was for a walking school bus (WSB) program. Along with seven other researchers, observational and self-report data was
collected regarding students’ transportation to and from school. Students’ answers were confirmed by following up with parents and the resulting data was summarized. This information was used to test the validity of said data collection methods and establish the demand for a WSB program.

**Findings**
The validation study for the TV reduction curriculum produced some interesting findings. The themes mentioned by the mothers included: lack of time to exercise with their children, not enough of a structured after-school routine, and teachers underestimating the work that their children could do. Each of these led to some dependence on the television as a means to entertain their children. This information will serve as an important guide when designing the formal curriculum.

The second study for the WSB program detected a significant correlation between the student and parental reports. Test-retest and inter-rater reliability were also significantly high. These findings, along with parental and district interest in the WSB program, provided the groundwork for the pilot study which will be implemented this school year.

**Essential Services of Public Health**
The projects mentioned above address the core function of policy development. The TV-reduction program will seek to inform, educate, and empower students, teachers, and parents regarding the benefits of a healthy lifestyle and the dangers of a sedentary one. Similarly, the WSB program will inform, educate, and empower parents and school staff regarding the benefits of regular exercise. Both projects will mobilize a partnership with the Houston Independent School District in an effort to address an issue of great relevance. The efforts of Dr. Mendoza, his research staff, the school district, and all others involved will promote a program that strives to establish healthy habits and reduce the rate of obesity among children at a critical stage in their development.
Topic: City Employee Wellness

Title: Wellness Internship

By Brian Herrick

Public Health Significance
The issue of Wellness is a major precursor to establishing public health within a community. By practicing wellness, people can prevent some of the most basic health problems that affect our community. By being an integral part of the Wellness team at the city of Houston Health and Human Services, I was able to coordinate massive events that included screenings for cholesterol, glucose, bone density, and body composition for City of Houston employees.

Approach
The city employees were screened for these health problems in a coordinated matter in order to prevent costly medical bills placed on the city of Houston tax payers. Essentially, this is one of Public Health’s major contributions to the community and to the local government finances.

Findings
My epidemiology background was utilized by my contact Dr. Nicole Hare. We decided that I would take all the information from biometric screenings, and digest it. This meant my final product of my practicum was a detailed report of a snapshot of the City of Houston’s employee’s current health. The report was broken down into departments, and well as by gender.

Essential Services of Public Health
I was glad to contribute an essential service of preventive screenings to the city of Houston’s employees.
Public Health Significance
I spent my summer as a research intern for the Houston Advanced Research Center’s Texas Climate Initiative. We now face with anthropogenically-driven climate change, a new form of climate change that is intricately linked to human health. Climate change has and may potentially pose further significant and wide ranging impacts on everyday human health, such as increasing rates of asthma, emerging and reemerging infectious diseases and waterborne pathogens, just to name a few. Though this modern form of climate change is accelerating faster than any previous climate shifts in recorded history, it is human-driven and therefore can be addressed through public health policies aimed to improve both climate change mitigation strategies and adaptation mechanisms in the face of potential health consequences. In order to effectively address the health effects of climate change, it is important to understand the many different dynamics between specific facets of climate change and the specific areas of human health that these changes may affect. As such, it is important that public health professionals join with other fields of discipline such as climate scientists, medical doctors and policy makers in order to translate integrated collaborative research into effective policies and interventions to address this growing public health concern.

Approach
My direction at HARC was two-fold; I researched climate change and health literature and climate change communication theory and methods and also created and conducted a climate change and public health survey. This survey was essentially the primary focus of my practicum. The principal intent of the survey was to build a network of individuals that would be interested in participating in an interdisciplinary collaborative information exchange network to deliver state of the art climate science and human health research. The survey was sent out to select Texas-based public health faculty, nongovernmental organizations and government offices in order to 1) assess the degree of interest individuals have in
climate change and health, 2) understand how individual research interests relate to climate change and health and 3) determine the types of information that would be the most beneficial or complimentary to advancing research interest in climate change and health. Once launched, our network will connect university faculty and other relevant professionals in order to stimulate discussion and foster collaborative research that can be used to foster evidence-based policy recommendations.

Findings
The survey results I received throughout the summer will create the foundation for the TCI information exchange network. My review of the results will also serve to build communities of shared interests around specific focus areas in order to encourage discussion and research among individuals with similar interests.

Essential Services of Public Health
I believe my practicum most significantly served to mobilize community partnerships by identifying system partners and developing a coalition to address a specific health issue.

Topic: Dental Access and Public Health
Title: Colonia Mobile Dental Program
By Juanita Lozano-Pineda, DDS

Public Health Significance
Dental access is a problem for many uninsured residents of the United States of America. Minority and indigent populations have a greater burden of this chronic disease and less access to dental care for several reasons that include lack of dental insurance, financial resources, provider availability in the area and transportation to a provider that may be in a neighboring city. This is important because dental disease has an impact on systemic diseases like diabetes and cardiovascular disease. Treatment of oral inflammation and infection can lead to better systemic disease control and decreased medical cost. Dental disease is preventable, and increasing preventive education and primary services to areas without access can
alleviate the current burden of disease and decrease the risk for future
disease.

**Approach**
The pilot program’s scope of services included preventive and basic
primary dental care to residents in several Colonia communities
surrounding Laredo Texas. These services were provided by the UT
Health Science Center at San Antonio Dental School faculty, dental
students, and dental residents (pediatric and general practice).

I have participated in the mobile van trips and made it a point to observe
the dynamics that were involved in a way that would allow me to then
recommend areas for improvement.

**Findings**
I also assisted with the development and modification of forms that were
used to track services. I provided some recommendations regarding data
collection and quality assurance of the patient chart. I will continue with
this practicum until October and provide the preceptor with a written
report of recommendations for future programs that are similar to this
pilot program. We have already discussed some, and have started to make
adjustments in preparation for the other program that starts September 1,
2008. I became familiar with the demographic research that was done and
accompanied my preceptor to do outreach for identification of potential
sites. This allowed me to have direct observation of the communication
skills and other dynamics that are necessary when approaching potential
community partners. Members from several community organizations
such as schools, private dental practitioners, local health departments,
promotora programs, and county officials, need to collaborate with the
health science center in order to have these future programs be successful.

**Essential Services of Public Health**
This project primarily addressed the essential services of public health that
included mobilization of community partnerships in an effort to link
people without access to receive the necessary healthcare services. Future
services that will come from this program include monitoring of past and
present access to care, current insurance status, and the oral health status
of patients in the area, based on the screening and clinical findings that
were obtained. We also will be able to track utilization of these services,
and plan for future programs through policy changes that can facilitate the
provision of services that are currently limited. The fact that dental
students and residents are participating in these programs is beneficial and
will hopefully have a positive health impact for the patient, the community,
and increase the practitioner’s understanding of the unmet healthcare
needs of our society and the social determinants that contribute to the
situation.

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Topic: Dental Access and Public Health

Title: Dental Public Health in the Community

By Grace Snuggs, DDS

Dental Management of Pregnant Patients

Public Health Significance
Pregnancy is one of the many medical conditions that affect oral health.
Concerns about maternal periodontal disease, being a risk factor for
adverse pregnancy outcomes, have developed the interest on including
oral care part of the prenatal care.

Why do we care?
There is a concern that dentists may have some restrictive attitudes to
treat pregnant women.

What is the scope?
This study is to assess the Texas dentists’ current attitudes toward treating
pregnant patients by a survey.

Approach
Revised evidence and literature review about pregnancy and dental
treatment was previously done. Dr. Yer, Resident in charge of the project,
already has the survey constructed using MonkeySurvey.com website.

Findings
More surveys were filled as a result of the calling reminder. The low rate
of responses, will probably lead this study to be canceled.
Personal Learning
Learned SPSS 15.0 software. Helped to create graphs and cross tabs in SPSS, generate and modify graph in Word and Excel. Participated in post cards mailing, calling protocol, making calls, etc. Analyzed why the survey isn’t working and possible strategies to improve it.

Number of preventive treatments by dental students.

Why is this topic an important public health issue/problem/concern?
BCD mission in the community is to develop exemplary clinicians, educators and scientists that caring for the needs of a diverse community. That’s the reason why the Public Health Sciences Department of BCD is in need to constantly monitor the quality of education.

What is the scope?
This is study is to determine the actual number of preventive treatments performed in the dental clinic by dental students.

Approach
Revision and recollection of data from more than 206 electronic records in Axium (software) of BCD.

Findings
The number of preventive procedures performed by senior dental students is dramatically lower than the other group. This suggests alterations to their curriculum.

Personal Learning
Learn the management and retrieval of data from records in Axium; defined criteria of inclusion and exclusion; created graphs in SPSS and Excel.

2. Henry Wade Juvenile Detention Center
Under the Dallas County Judicial Services, this juvenile detention center is certified to house up to 382 children. I visited the facilities, talked to nurses, probation officers, dentists, dental assistant and youth. My final product was to create a report about their services. Future residents of the Public Health department can be able to determine the efficacy and efficiency of the actual system.
3. Children Oral Health Center
A great number of missing school hours and work absences in the Dallas ISD are related to dental infections. The Children’s Oral Health Center provides these dental services at a nominal fee of $25 per visit, a very affordable way for these families because it includes emergency treatments, or usual dental care. I familiarized myself with the local community program, understood how a dental clinic works, system flow, schedule, budgeting, funding and staffing problems; identified the population served, overviewed of a 501c3 non-profit corporation, and understood why the board of directors members are part of the community, local government authorities, Dallas healthcare system and staff members in order to monitor and regulate quality of services and fees.

4. Dallas Community Dental Care – Vickery Meadow
Community Dental Care provides dental care and education to low-income families mostly children and seniors of minority groups. Dallas Community Dental Care program has 10 satellite clinics around Dallas, which makes it attractive to federal funding, state and local government funding, and private donors. They serve, in a larger scale, dental services to the community without means to afford private dental care. This is a very interesting opportunity to see the success and maintenance of a public health program and their process to keep it running successfully. Monitoring, regulation and policy enforcement are tools required to keep these 10 clinics running. The common ground in the two programs was that they are able to stretch the budget to keep the actives functions and local needs covered.

Essential Services of Public Health in this practicum:
- Inform, Educate and Empower People (youth detainees)
- Enforce Laws and Regulations (Juvenile System)
- Link People to Needed Personal Health Services (Dallas County, Baylor College of Dentistry and dental students)
- Mobilize Community Partnerships
- Develop Policies and Plans
- Assure Competent Public Health/Personal Care Workforce
“My great appreciation to Baylor College of Dentistry- Department of Public Health – Graduate Program and staff, specially Dr. Kenneth Bolin, Dr. Vaish Ier, Dr. Rity Bansam, to my Faculty Advisor Dr. Scott Walters, and to all the Programs that opened the doors to my personal academic enrichment.”
-Grace D. Snuggs, DDS

Topic: Development Epidemiology Protocols

Title: EPA and Disinfection Byproducts in Florida Water Systems

By M. Shepard-Perry, MPH

Public Health Significance
This practicum focuses on the development of disease outbreak investigation protocols to be used in the training of field workers deployed in the health districts of the Republic of Rwanda. The host government office (preceptor), TRAC-plus, has the ambition to re-organize itself into the "CDC of Rwanda," providing centralized guidance and training for public health employees, but requiring completely decentralized surveillance of 16 nationally-reportable conditions, and management of outbreaks, both local and regional (neighbors Uganda and DRC have occasional outbreaks of viral hemorrhagic fevers, and on-going conflicts in the region lead to in-migration of particularly vulnerable groups).
Materials developed through this practicum are expected to supplement national, on-line resources that shall become available to field staff to guide disease control efforts, and expand national response capacity at the local level.

Approach
This practicum required travel abroad to the host country (3 weeks), many e-mail communications, and a few telephone conversations with the preceptor. Development of the outbreak investigation protocols required learning and understanding the context of Rwanda's current public health infrastructure, as well as the skills expected of, and resources available to, field staff who will make use of the training tools at the local level. The training materials will be reviewed by officers at TRAC-plus, and will be tested in the field for ease of use and functionality in the web environment.
Findings
The deliverables are the development of investigation protocols for cholera, bloody diarrhea, viral hemorrhagic fevers, avian influenza, typhoid fever, meningococcal meningitis, measles, and poliomyelitis. The protocols must be web-enabled and must be appropriate to Rwanda’s public health context. The protocols are being written and submitted in English, and will likely be translated into French and Kinyarwanda for use in the field.

Essential Services of Public Health
This project relates principally to Essential Public Health Services #1, Monitor health status to identify and solve community health problems, and EPHS #2, Diagnose and investigate health problems and health hazards in the community.

Topic: Disparities In Cancer Care

Title: Health Disparities and Cancer Caregivers

By Katherine Ramsey

Public Health Significance
Disparities exist in the severity, diagnosis, treatment, and prognosis of cancer patients based on ethnicity. It is known that minorities typically present with more advanced disease and can be more likely to have delays in diagnosis as well as issues receiving adequate treatment. The disparities in healthcare due to race and ethnic is such an issue that the CDC has mandated the “elimination of disparities” as one of the two major goals for the Healthy People 2010 goals. In this practicum, I work in one aspect of cancer care. This work focuses on caregivers of underserved, uninsured cancer patients at a county hospital. The research objectives is to understand the effect of cancer patient symptoms on their caregivers observed over the time of a treatment period (12-20 weeks longitudinally). The goals are to gain an understanding in this field and to develop resources to assist caregivers in taking care of themselves, in order to better help the patients. It is important to address these issues to help eliminate health disparities and improve the health of underserved caregivers accessing healthcare through a county system.
**Approach**

During my practicum I worked to recruit patients and caregivers onto IRB approved protocols. This involved informed consent teaching, data collection, data cleaning, and data maintenance. To assess the caregiver burden one-on-one structure interviews were conducted with the caregivers in addition to quantitative data collection methods. I was able to use qualitative interviewing skills to collect data, worked to transcribe data, and was able to conduct an analysis on the caregiver’s interviews. By using qualitative methods one can approach a topic through more of a storytelling method. These interviews can last anywhere from 30 to 60 minutes. Using a qualitative analysis program, ATLASi, one can code the interviews, group theme topics, and develop a theme map, synthesizing this data.

**Findings**

Analyzing these interviews, it is noted that there are additional burdens of caring for patients who are uninsured and for minority caregivers, as compared to the general literature in existence (which primarily focuses on the insured, white caregivers). Further analysis will be conducted and these findings will be reported in the future. It is also interesting to hear the rationale and obligation to provide care for patients. Most have no hesitation about caring for the patients and do not even consider themselves a caregiver. In fact, the word *caregiver,* is not easily translated into the Spanish language, which has presented a problem in recruitment. However, despite the fact the literature indicates this is a difficult population to recruit; this study has done a good job of retaining caregivers. Many are interesting in providing information to help future generations through the development of new resources. This study is ongoing and data is still being collected.

**Essential Services of Public Health**

In this experience I was most commonly researching new techniques and collecting new data to understand public health issues. It was a practical way to bring classroom knowledge of epidemiology and health behavior to the real world of conducting academic level research for funding protocols.
Topic: Disinfection of Drinking Water

Title: EPA and Disinfection Byproducts in Florida Water Systems

By Nicken Sheth

Public Health Significance
Disinfection is a vital process in the treatment of drinking water; it is intended for minimizing the risk to human health of disease-causing microorganisms. However, though it is extremely important, it’s not an entirely perfect process. Maintaining a disinfectant residual and reducing disinfection byproducts are challenging issues. Disinfection byproducts are harmful products created in the disinfection stage of water treatment. Trihalomethanes (THM) and haloacetic acids (HAA) are disinfection byproducts that are produced when chlorine interacts with organic material in the water. These byproducts have been classified by the EPA as either probable or possible human carcinogens, and have been associated with bladder and rectal cancer. This has the potential to be a very severe problem as over 260 million people are exposed to disinfection byproducts in their drinking water.

Approach
The primary task in my practicum was to evaluate the disinfection byproduct monitoring plans of Florida water systems that are under 10,000 people. Making sure that these water systems were following EPA regulations (Stage 2 in the Disinfection Byproducts Rule) was the primary objective of my project. My first task was to identify which type of water system (consecutive or non-consecutive) it was and what type of water source (ground or surface) they have. Each water system sent in a standard monitoring plan stating both of these aspects of their water system. Depending upon their system type and source type, the type and number of monitoring sites were determined. Different types of monitoring points include a near entry point, a high TTHM, a high HAA5, an average residence time (ART) point and a maximum residence time (MRT) point. Next, I would look at the water system’s distribution schematic, which not only depicted the water system service line boundaries but also where monitoring locations, storage tanks, wells, and booster chlorination sites were. I made sure that there were appropriate proposed monitoring locations for Stage 2 by following a certain criteria. After analyzing the
schematic, I would go over analytical laboratory data from the water system that told me about the disinfection byproduct levels and the chlorine residual levels. This data was just more evidence I needed in order to determine if the proposed monitoring sites were in correct locations on the water system’s distribution schematic.

Findings
The Stage 2 monitoring does not begin till 2009 and there are still many standard monitoring plans from Florida drinking water systems to be evaluated. So, unfortunately, my project had no conclusion while I worked at the EPA. This Stage 2 rule is proposed to prevent approximately 280 bladder cancer cases per year according to the EPA1.

Essential Services of Public Health
My project primarily addressed: Essential Service #9 Evaluate Effectiveness, Accessibility, and Quality of Personal and Population-Based Health Services.

Information on Disinfectant Byproduct Rule (Stage 2) found at:
1. http://www.epa.gov/safewater/disinfection/stage2/

Topic: Education of Volunteers in a Healthcare Environment
Title: Children's Medical Center Dallas, Family Services Department, Volunteer Instruction and Training (Summer 2008)
By Vidya Ayyr

Public Health Significance
Budgetary constraints in the public health arena forces us to rely on the individuals who are willing to donate their time, energy and efforts. Volunteers are critical to the success of any non-profit organization. It is therefore, essential to ensure the safety of the individual volunteer by preparing, educating, and giving them the minimum tools necessary so that they, in turn, may help provide direct patient care.

Approach
At Children's Medical Center Dallas, volunteers can be considered an extension to the staff. They are able to help in areas throughout the
hospital, from ICU to the playrooms. As such, they come into contact with numerous patients and/or patient families. It is important to consider that in a hospital environment the concern of our volunteers may not just be limited to potential disease exposure. Children's is one of the largest pediatric facilities in the US and the only hospital in North Texas devoted to the care of children from 0 + to 18 years of age. Therefore, we see a range of diversity as we treat individuals from different ethnic backgrounds and varied socioeconomic status.

With this in mind, our volunteer trainings are a compilation of infection control policies and hospital/healthcare requirements as well as diversity education. Through the use of PowerPoint presentations, “Child Life” and “Volunteering at Children's” video, interactive quiz, lecture and handouts, the volunteers earn a better understanding of the fundamentals of working in our hospital. They are required to attend two orientations, have TB-testing and provide an immunization record, as well as participate in Child Life, Sitter and Guest Relations trainings.

**Findings**
Children's has over 800 regular adult volunteers and approximately 300 student volunteers to date. Together they have contributed more than 1,615,462 hours of service to the hospital. All of our volunteers go through a vigorous orientation process, which ultimately, results in the patient receiving the best possible care.

**Essential Service of Public Health**
An individual that is willing to help still needs instruction and guidance so, that they are able to use their skills both practically and productively. By educating our volunteers, we are empowering them. They then can take what they have learned, and apply it to provide a public health service to the remainder of their communities.

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Topic: Employee Wellness Initiatives

Title: Effectiveness of Employer-Sponsored Wellness Initiatives

By Yue Liao

Public Health Significance
Studies show that about two percent of money spent on the workforce is lost to disability, absenteeism and presenteeism. These costs add up to more than the direct medical claims costs that some employer faces. With employee buy in, employer-sponsored wellness programs can significantly lower these indirect costs. According to a recent worldwide survey of employers that represent about 7 million employees, the employer-sponsored wellness programs are a “growing global phenomenon”. In the United States, about 86 percent of the surveyed employers offer wellness programs. Outside the United States, about one in five employers offer wellness programs. Globally, employers recognize that by improving their employees’ health and reducing the risk of diseases, the company could be benefited in multiple ways. The employer-sponsored wellness programs are expected to reduce health care costs by making workers more aware of healthy behaviors and encouraging them and their families to adopt healthier lifestyles, to reduce disability- and illness-related absences, to improve workplace morale and productivity, and can even be used as a tactic to attract and retain talented employees.

Approach
Wellness programs, together with consumer driven health plans, are believed to give employees tools to manage their health while improving productivity and reducing company costs. To measure the effectiveness of the employer-sponsored wellness program for employees who enrolled in the consumer driven health plans, a pilot survey is designed to be used in three companies who provide both wellness programs and consumer driven health plans for their employees. The survey contains questions regarding basic personal health information (i.e., weight, height, and physical activity level), self-conception on self-esteem, job morale and productivity, intention of health behavior change (i.e., smoking cessation, healthy diet and regular exercises), and self-evaluation of energy level and sleep quality. Every employee who enrolls in the consumer driven health plan and participates in the wellness program is asked to complete this
survey. Results from this survey will be matched to the data warehouse which contains every employee’s medical records (i.e., screenings, pharmacy claims, surgeries, physician visits, and inpatient days). The final merged data will be used to compare if there is any positive behavior change and any reduction on employees’ health care cost after their participations in the wellness program. Also, national data on several health care effectiveness measurements are being gathered and organized, and will be used as benchmarks.

**Findings**
The survey was being sent out to employees. It is expected that the results from survey will be available for analyzing around September this year.

**Essential Services of Public Health**
This project addressed the essential services of public health by evaluating effectiveness and quality of personal health services. By engaging in employer-sponsored wellness programs, employees are also more likely to be informed, educated and empowered about health issues.

Topic: Employee Wellness, Well Managed Program

Title: The Methodist Hospital System, Employee Wellness Department

By Maria Keefer

**Public Health Significance**
Employee wellness is an important part of any company. Employees that are healthy will take less sick days, have fewer claims on insurance, and hopefully, be more productive. The employee wellness department deals with a variety of health issues, however, there is a focus on chronic disease. As the obesity epidemic continues to increase, chronic disease also increases. Research has shown that changing lifestyle behaviors, such as eating a more nutritious diet and increasing physical activity, can prevent or delay the onset of many chronic diseases.
**Approach**

In order to target employees that are in need of guidance to become healthier, a personal wellness profile is offered to all employees. A personal wellness profile consists of a questionnaire regarding lifestyle behaviors and also biometric measurements (including blood lipid profile, blood pressure, waist and hip measurements, and height and weight). After a personal wellness profile has been completed, if an employee qualifies for one of the programs offered, they are invited to join the program. One of the programs that I worked closely with is the Well Managed Program for diabetes. This program is offered to those that have diabetes or recorded high fasting blood glucose during their personal wellness profile. If they join the program, they meet with a wellness partner once a month, receive a monthly handout regarding diabetes related issues, and a free glucose monitor. Each month the session between the participant and wellness partner is participant-directed and also reviews the American College of Endocrinologists’ standards of care for diabetics. The standards of care is a list of items that each diabetic should complete throughout the year.

**Findings**

The employee wellness department has completed many return on investment analyses for different programs in the department. The Well Managed Program for diabetes is a relatively new program, which just began in February 2008; therefore, data analysis has not been completed. However, trends in the data show that participants are losing weight and showing improved HbA1c test results.

**Essential Services of Public Health**

The major service of the entire employee wellness department is to inform, educate, and empower people about health issues as well as monitor health status to identify and solve community health problems. The major service of the Well Managed Program is to inform, educate and empower people about health issues.

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Topic: Fitness and Academic Tests

Title: Whence a healthy mind: Collection of fitness and academic testing data

By Duncan Van Dusen

Public Health Significance
The goal of this practicum was to gather the results of both fitness (FitnessGram) and academic (TAKS) tests undertaken by Texas schoolchildren in grades 3-12 during the 2007-08 school year. Finding correlation between physical fitness and academic performance could have significant implications to public health. Pressure to produce good academic test scores tempts school administrators to cut physical education and health education to increase time for basic skill training. My hypothesis is that, on the contrary, there is a direct positive association between health-related fitness test results and academic test results. I further hypothesize that the BMI and cardiovascular tests evince a stronger correlation with academic outcomes that muscle strength and flexibility ones.

Approach
Although summary-level fitness and academic test data are already being reported by districts to the Texas Education Agency (TEA), student-level results are unavailable. This deficiency stems partly from the language of SB 530, which requires an annual fitness test but also allows only district-summary level reporting to TEA. Therefore, to test my hypothesis I developed a protocol to contact districts individually and request their original, individual data for use in this study.

I created a target list from leads provided by my community preceptor and faculty sponsor, supplemented by research on the internet. Once I proved to TEA that my project had interest and momentum, they also chipped in a few names. I used “shoe leather salesmanship” to locate the right person in each district and persuade them to participate. I discovered that the decision maker depended on district size: in small districts, it was often the superintendent; in medium-sized districts, the assistant superintendent for curriculum; in large districts, the research and evaluation office. The
biggest point of resistance was the technical effort involved in associating records invariably stored in separate databases.

**Findings**
I completed the week of August 4 with a commitment list of 11 districts and 300,000 test records (12% of the entire population of 2.6 M tested for fitness during 2007-08). Represented in the commitment group are: 6 of TEA’s 20 geographical regions (ESCs), an enrollment range of 1,000-200,000 students, and all 4 sociological types (rural, suburban, small urban, large urban). I also have a "maybe" list comprising 25 districts and another 430,000 records. Due to the nature of this project, I am going to continue to work with them until September 30 to round out the study group before beginning my data analysis and thesis. I forecast that the final sample will consist of 16 districts and 400,000 records (15% of the population).

**Essential Services of Public Health**
My work falls squarely in the “assessment” category within IOM’s assessment/policy development/assurance framework of essential services of public health. If successful, our work should influence the “policy development” component both by showing how health and physical fitness are associated with academic success and by demonstrating the utility of a refined child fitness monitoring system.

Topic: Following Health, Nutrition and Breast-Feeding Habits in Israeli Infants

**Title:** Developing of a national survey to evaluate health and nutrition patterns in infants from birth to 2 years in Israel, and implementation of a community based pilot study.

**By Tal Ben-Galim**

**Public Health Significance**
The current recommendations of the Israeli Ministry of Health are to exclusively breast feed infants (or give breast milk replacement) till the age of 6 months and then add solids in addition to continuation of breast feeding.
The advantages of breast feeding for the infant include reduced respiratory and gastrointestinal infections, reduced atopic dermatitis, and improvement of cognitive functions.

A national breast feeding survey was conducted in 2000. Based on the outcomes of this survey several programs and policies to encourage breast feeding were implemented. The goals of the current survey are to get information about patterns of breast feeding, and the length and type of nutrition following breast feeding in today’s Israeli infants, through following them from birth to 2 years of age. This information will help the Israeli Ministry of Health to assess the efficiency of the new policy and programs that were implemented after the 2000 survey. The new data will be compared to the data of the 2000 survey and to the data provided by the World Health Organization (WHO). The Israeli Ministry of Health will generate new recommendations based on the findings of the new survey and the WHO recommendations. In addition, changes to current policy might be implemented in order to improve the health of Israeli infants.

**Approach**
I joined the research team of the Israeli Center for Disease Control affiliated to the Israeli Ministry of Health. We designed the study which involves the administration of 5 questionnaires that will be used for children at different ages. The first questionnaire will be used at birth while recruiting new babies from hospitals, and will be conducted face to face by an investigator. The other 4 questionnaires are telephone questionnaire, and the parents will be contacted by investigator when the children are 2 months, 6 months, 1 year and 2 years.

After assisting with the development of the study design I performed the first part of the pilot study- I went to Sheba Medical Center (-the hospital that was chosen for the pilot study) and recruited women from the Maternity Wards to join the survey adjacent to the delivery of their newborns.

**Findings**
From the 86 women that I invited to participate I got a response of 73%. Summary of the results from the survey include: 85.7% of the women intend to breast feed their babies and the average anticipated length of breastfeeding is 9.7 months. However just 15.9% of the women got training in breast feeding during their pregnancy.
These findings probably don’t represent the whole Israeli population since demographic differences between the interviewees and the national data were found.

There were many reasons for refusing to participate in the study including many technical difficulties in the procedure of interviewing (not convenient hours for the interviewees, lack of cooperation from the ward’s staff etc.). The research team analyzed the results of the pilot and made some changes in order to improve survey administration for the main study.

Interobserver and Intraobserver factors will be assessed in order to determine the validity of the questionnaires.

The completion of this study is expected to be in two years.

**Essential Services of Public Health**

This project contains many components of essential services of public health:

- Research
- Inform educate and empower.
- Develop policies and plans.
- Evaluate health services.

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Topic: Foodborne Surveillance

Title: City of Houston Department of Health and Human Service Bureau of Epidemiology, Division of the Foodborne Surveillance

By Chau Chit J Li

Public Health Significance
The main function of the Foodborne Surveillance is to monitor and investigate the diseases that are caused by foodborne bacteria or viruses in the jurisdiction of Houston City. Furthermore, the local foodborne division collaborates with physicians, hospitals/clinics, other local, state and federal health departments to investigate the cause of outbreak and to prevent further outbreaks (e.g. recent national salmonella outbreak).

Approach
With the help of the staff of Foodborne Surveillance, I learned the general procedures and protocols for data collection, data analysis and reporting. By shadowing the staff, I learned how to use Keymap to determine the jurisdiction of the cases, how to enter collected data into casefile which is an electronic based system that contains all the cases’ information (e.g. name, date of birth, on set of illness, number of household contacts etc) and how to interview cases. I also used epi-info to analyze the collected data and prepare a report based on the result of the analysis.

In the case of outbreak, we went to the outbreak site to collect food samples and interviewed outbreak related personnel. Based on the information collected at the outbreak site, an interview form was prepared. The cases and controls were interviewed, the collected data was analyzed by Epi Info and the food samples were sent to the lab for further testing.

Findings
My final product was to analyze the data of 2007 Campylobacteriosis cases in Houston, prepare a report and a Power Point presentation based on the result of the analysis. The goal was to apply the acquired knowledge during the practicum to the final project. The bottom-line was to monitor the Campylobacteriosis cases in Houston.

The steps for conducting the analysis of the data were:
1. Gathered information and data about this illness on the website and in the foodborne division.
2. Took 15% of cases out of total cases to verify whether there were any discrepancies between the information in electronic based file and the hardcopy.
3. Used epi-info to analyze various variables (e.g. the trend of disease, the incident rate…)
4. Wrote up a report based on the analysis
5. Prepared the Power Point presentation

**Essential Services of Public Health**
One of the essential services that my project addressed was to monitor health status to identify and solve community health problem. For example, by comparing the national incident rate to the local incident rate, we could determine whether more efforts needed to be invested in this particular foodborne illness. Also, we could determine whether there was upward trend for the Campylobacteriosis in Houston by comparing the 2007 data to the data of previous years, whether there was a seasonal trend, and whether there was a gender or age difference in the rate of infection.

The other essential services that my project addressed was to research for new insights and innovative solutions to Campylobacteriosis. I researched and studied the CDC website for any new update for Campylobacteriosis and incorporated the findings in my Power Point presentation.

The last part of the project evaluated the effectiveness of the quality health services which addressed the limitations of the collected data (e.g. accuracy/quality of the data).
Topic: Health Promotion Metrics

Title: Health Promotion Metrics For Health Improvement

By Alan John S. Delos Santos

Public Health Significance
The capacity to assess the current state of health of the community is essential in being able to developed health promotion programs. One avenue to achieve this is using a questionnaire to obtain information from the community itself. The Air Force has developed a web-based questionnaire, AF WEB HA, to acquire health and risk factor data among its personnel. The information gathered can be used to develop guidelines and programs to improve health by preventing the progression and/or development of disease. It is important to investigate the effectiveness of AF WEB HA.

The use of the internet is common nowadays, including, in the healthcare setting and especially in the military. Web-based surveys are the latest among the ways of gathering information, from face-to-face interviews to pencil and paper questionnaires to telephone interviews. It is advantageous to utilize current modalities to improve community assessments, but, it must be suited and adequate for the purposes it is intended for.

Approach
The AF WEB HA was fully implemented in Air Force in 2007. We looked at the questionnaire for items pertaining to physical activity, nutrition, obesity, and tobacco usage. We then compared these questions with well tested public domain questionnaires like the Behavioral Risk Factor Surveillance System and AUDIT; and also referenced them with the guidelines from U.S. Preventive Services Task Force, U.S. Department of Agriculture, and American College of Sports Medicine. In addition, we consulted with the Air Force nutritionist and physical fitness experts for what information they needed to improve their programs and their recommendations.
Afterwards, we formulated a revised set of questions pertaining to physical activity, nutrition, obesity and tobacco usage based on what we have researched.

**Findings**
We found that the AF WEB HA was convenient and easy to administer. There were over 15,000 respondents in 2007. Data extraction from the questionnaire was possible. But, the desired information was insufficient or absent. Therefore, some of the original question items were revised, while some questions were added or removed in order to better obtain information on the health status of the Air Force population. Changes to the AF WEB HA have made it a better tool.

The final product was an improved ad hoc criterion for health promotion metrics in areas of physical activity, nutrition, weight, and tobacco usage.

**Essential Services of Public Health**
The practicum was able to address two essential public health services.

1. Evaluate effectiveness, accessibility, and quality of personal and population-based health services.

2. Research for new insights and innovative solutions to health problems.

The AF WEB HA was new and the practicum helped evaluate its usefulness and functionality, especially, in identifying the physical fitness, nutritional, weight status and tobacco usage of the target population. The information gathered can then be used to developed preventive health programs tailored to the Air Force personnel.

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Topic: HIV/AIDS and Homosexual Men

Title: Behavioral Surveillance for HIV/AIDS

By Raymond Youm

Public Health Significance
Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome (HIV/AIDS) is a serious public health problem, especially among men having sex with men (MSM). HIV/AIDS is a sexually transmitted disease (STD). STDs are very widespread that 15 million cases are reported annually. At the same time, they are the reported most infectious disease in the United States of America (USA). STDs account five of the top ten most reported infectious diseases. HIV/AIDS is one of the top ten most reported infectious diseases (Healthy People 2010).

Approach
I had access to data from a previous Behavioral Surveillance of HIV/AIDS in which the subjects were MSM. The previous MSM Behavioral Surveillance was conducted in 2004. I decided to look at demographics, education level, condom usage, and substance abuse. I ran all the analysis on SPSS and used the results to produce a report. The 2008 Behavioral Surveillance for MSM started in July and will continue until the end of the year. Hopefully, the I can continue on the observation in the Fall semester.

Findings
My final product was a report and presentation. Most people in the survey did receive a free condom and used it. I found that people who were high on alcohol and drugs like methamphetamine, crack, marijuana, and amyl nitrite were more likely to have more sex partners, which increases the risk of getting HIV/AIDS and STDs.

The health department will use the results from the report and take action in addressing the spread of HIV/AIDS and STDs. Even though HIV/AIDS and STDs can strike anyone regardless, some groups are more vulnerable than others. The more vulnerable groups need to be targeted in addressing HIV/AIDS and STDs. HIV/AIDS and STDs are serious public health problems.
Essential Services of Public Health
The Behavioral Surveillance for HIV/AIDS uses the results to determine where the resources should be allocated to control the spread of HIV/AIDS and other STDs. I believe that substance abuse needs to be addressed since it plays a role in the spread of HIV/AIDS and STDs (Healthy People 2010).

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Topic: Hospital Management

Title: Tawam Hospital Internship

By Amal Al-Kalla

Public Health Significance
At Tawam Hospital in Al-Ain, Abu Dhabi, United Arab Emirates, I was able to witness the “re-making” of a hospital based on the needs of its community. Tawam Hospital had recently affiliated with Johns Hopkins Medical University and was undergoing an extreme makeover. This carried public health significance because millions of dollars were being used in order to build a hospital that has the ability of addressing its community’s needs. Many previously ignored diseases such as breast cancer and prostate cancer were coming to light, and adequate medical care was a dire necessity.

Approach
The company being utilized by Tawam Hospital, ICME, conducted one hour long meetings with the heads of departments and key personnel over a three week period. I was able to sit in on all these meetings. Through listening, recording, as well as conversing with ICME and key Tawam personnel, I was able to generate a detailed report of all the findings, requests, and statistical analyses. This report was divided into three segments based on the three weeks of meetings. Tawam physicians had come prepared with suggestions, recommendations for modifications, as well as statistical reports that were all included in my final reports. Many were ready with answers, but some seemed afraid of drastic changes and needed to be coaxed into speaking their mind and offering their recommendations.
Findings
My final product was a report broken into three parts that was forwarded to the Chief Clinical Officer as well as the Chief Financial Officer. The recommendations and analyses together will supplement documentations leading to the “bottom line” for the Chief Executive Officer and Chief Financial Officer to give the “go-ahead” for ICME to commence structuring the new hospital. Final drafts will be reviewed and accepted for ground-breaking and are tentatively due by the end of August. The actual ground-breaking is planned tentatively for mid-October. As construction goes on, contracts and deals for new equipment will be underway with both European and American companies. Moreover, a plan for clinical and administrative recruitment from Europe and the United States is key in order to bring in up-to-date experts and qualified personnel.

Essential Services of Public Health
My project primarily addressed one essential service of public health. That service is the necessity of having a functional hospital that can meet the needs of its community through essential medical care. A recently acknowledged disease, breast cancer, has taken the country by surprise. Patients of all ages, some as young as 17 years of age, are finally breaking the silence and are coming forward in an effort to be heard and cured. This positive step in eliminating ignorance when it comes to this disease requires immediate medical attention, chemotherapy, radiation therapy, a variety of drugs, as well as educational materials. Tawam Hospital being the main hospital in that region for the treatments of all kinds of cancers takes on the bulk of that responsibility.
Topic: Influenza Pandemic

Title: Influenza Pandemic

By Maureen Williams

Public Health Significance
The events of the 1990’s and early 2000’s demonstrated the need for effective planning and response to natural and man-made disasters. One of those potential natural disasters is pandemic flu. Once defined, the CDC stated that program, or plan, effectiveness is improved through the process of program evaluation. (Centers for Disease Control and Prevention, 1999) Program evaluation should be accomplished not only periodically, but in the course of routine administration of the program. (Centers for Disease Control and Prevention, 1999) Accomplishing this task for a “rare, but significant event” is challenging. (Herbold, John R., PhD., 2008) To address this challenge, the RAND Corporation (under contract to the CDC) developed the “Facilitated Look-Backs” approach that was tested and validated at the state level. (Aledort et al., 2006) Nevertheless, no comprehensive and generally applicable pandemic influenza program evaluation tool or model is readily found for use at the local public health department level.

Approach
To better understand emergency/disaster planning and response, I worked with Department of State Health Services Region 8, and three local public health departments to observe and participate in these processes. In addition to understand the overall disaster response process, I focused on pandemic influenza planning and response. This experience included participating in an exercise with the goal of teaching nursing students the role they may play in surveillance, reporting, and responding to a bioterrorism event.

Insights gained from these experiences provided a background for developing a tool local public health departments could use to help in pandemic influenza planning and plan evaluation. The model was based on the “Facilitated Look-Backs” approach developed by RAND Corporation. (Aledort et al., 2006)
Findings
Modifications to the RAND model included stakeholder additions, inclusion of all six CDC program evaluation steps, and suggestions for incorporating pandemic flu response plans in seasonal flu management implementation. Feedback on the model was then obtained from three LPHD’- one rural, one suburban, and one urban. These recommendations were incorporated into the final model. Feedback from the sites also supported the assumption that this model promotes the effective and efficient evaluation of both pandemic flu and seasonal flu response by reducing redundant evaluations of pandemic flu plans, seasonal flu plans, and funding requirement accountability. Site feedback also demonstrated that the model is comprehensive and flexible, so it can be adapted and applied to different LPHD needs and settings. It also stimulates evaluation of the major issues associated with pandemic flu planning. The final tool included the model, websites, and references to assist with both planning and plan evaluation.

Essential Services of Public Health
This practicum experience primarily involved development of policies and plans, program evaluation, and mobilizing community partnerships.

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Topic: Influenza Surveillance

Title: Sentinel Flu Surveillance for the 2007-2008 Flu Season

By Rebecca Ardoin

Public Health Significance
Every year 5% to 20% of the population becomes infected with the flu, which can cause complications and lead to hospitalization or even death. The sentinel flu surveillance project provides information on the peak times of flu season, the dominant strain of flu, the effectiveness of the flu vaccine, and various risk factors associated with the flu for the city of Houston for the 2007-2008 flu season. Also, the project examines the role of a rapid flu test in a primary care setting. All of this information collected may be used to determine ways to work to prevent or diminish the spread of flu.
Approach
The city of Houston health department provided various primary care clinics with rapid flu tests. The doctors sent a nasal swab sample to the city of Houston lab if a rapid flu test was performed, where culture and PCR were performed. The doctors also faxed the results of the rapid flu test to the city health department. All samples that were flu positive for rapid flu, culture, or PCR were interviewed via telephone; information collected from this interview included race/ethnicity, sex, age, date of onset, number of days ill, number of household and school/work contacts, number of household and school/work contacts sick, number of days of school/work missed, number of days hospitalized (if any), recovery status, complications associated with flu, existing medical conditions, travel history, and flu vaccination history. Records of the doctor visit where the rapid flu test was performed were abstracted if the patient could not be reached via telephone. For analytical reasons, a patient was considered flu positive if the culture was positive for flu A or flu B. Culture is considered the gold standard for flu testing.

Findings
451 samples were tested using rapid flu test (in the doctors’ office), culture, and PCR. 117 were interviewed and 76 data abstractions were performed for those that tested positive for any 1 of the 3 tests. Flu A was dominant over the entire flu season (58% of all those positive), but flu B cases outnumber flu A cases in the latter part of the season (Feb to May).

There is no correlation between being culture positive and gender (regression coefficient=0.038, p-value=0.469). There is no correlation between being culture positive and age (regression coefficient=0.001, p-value=0.415). There is a slight correlation between being culture positive and race/ethnicity (regression coefficient 0.039, p-value=0.025), but upon further calculations of the regression of each race/ethnicity on culture positivity, no race/ethnicity had a significant correlation.

The average number of days ill is 6.88 (95% CI 5.65 to 8.12). The average days of school or work missed is 3.18 (95% CI 2.60 to 3.76). The average number of household contacts is 4.75 (95% CI 0.77 to 8.73) and the average number of household contacts ill is 0.75 (95% CI -0.77 to 2.27).

The vaccination rate for all flu positive cultures was 35.34% (95% CI 26.7% to 44.0%). The vaccination rate for flu A positive cultures was 33.8% (95% CI 23.0% to 46.0%) and the vaccination rate for flu B
positive culture was 37.78% (95% CI 23.8% to 53.5). There is no statistical difference in the vaccination rates between culture A positive and culture B positive (two sample t-test with equal variances, p-value=0.662).

Using culture as the gold standard, PCR was found to have a sensitivity of 97.24% and specificity of 76.67%. PCR was slightly more sensitive for flu A than flu B, and slightly more specific for flu B than flu A. Using culture as a gold standard, rapid flu test was found to have a sensitivity of 27.62% and specificity of 60.37%. RFT was much more sensitive for flu A than flu B, and more specific for flu B than flu A. Using PCR as the gold standard, the sensitivity of culture was found to be 73.64% and the specificity was 97.64%. The sensitivity of the culture was higher for flu B than flu A, and the specificity was only a tiny bit higher for flu A than flu B.

**Essential Services of Public Health**

This project primarily addressed the essential public health services of monitoring health status. Influenza is not a reportable disease and this project is the first active surveillance of flu done in the city of Houston. The project is also leading to new ideas for additional studies; currently the records are being abstracted for all the patients who tested negative for culture, PCR, and rapid flu test, therefore case control studies can be done comparing vaccine rates, and also demographics of the flu positive population can be compared to the flu negative population. We can also evaluate if a doctor was more or less likely to prescribe antibiotics give a negative rapid flu test compared to a positive rapid flu test.

**Citations:**


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Topic: Infection Control

Title: Infection Control in the Hospital Setting

By Jennifer Elliot

Public Health Significance
Infection control in the hospital involves the prevention of the spread of disease through education and continuous surveillance. Through implementation of specific isolation guidelines for different illnesses and symptoms, hospitals help prevent the transmission of infections among patients and caregivers. Healthcare associated infections (HAI) contribute to increased patient length of stay, medical costs, morbidity and mortality. According to estimates by the Center for Disease Control (CDC), healthcare associated infections account for 1.7 million infections and 99,000 deaths each year.

Approach
During my internship, I spent part of my time shadowing the Infection Control Practitioners. I made hospital rounds with them, and observed them going through daily lab records looking for specific illnesses and/or trends in infections. The ICPs (Infection Control Practitioners) help to ensure that all patients throughout the hospital are being isolated correctly by health-care workers and reinforce education to hospital staff on isolation guidelines. I also had the opportunity to attend multiple meetings throughout the hospital that the Infection Control Department is involved in – including such activities as new construction, Quality Outcomes and Management, Evidence-based Practice guidelines, and much more. The other portion of my internship was spent helping the Infection Control Department update some of their policies – including updating their Isolation Guidelines Policy to follow the recommendations by the CDC.

Findings
My final product is a written and oral presentation of the recommended updates to their current Isolation Guidelines that are currently not in alignment with the most recent CDC Isolation Guidelines. In addition, I have been involved in helping them update their policy on Pet Therapy and Animal Visitation. While the policy is still in the process of being updated (it is taking a while since there are so many stakeholders that need
to be involved), I had the opportunity to assist the Infection Control Assistant Director in presenting her updates to the other people involved.

The bottom line with regards to infection control is that it is primary component behind the prevention of the spread of disease. Without infection control guidelines on isolation, there would be no control over the spread of illnesses within hospitals. The spread of illness within a hospital setting significantly increases patient morbidity and mortality rates. As more research is done and more is learned about specific pathogens and how they are spread – recommendations for isolation are updated. It is important for hospitals to keep their guidelines updated to ensure they are following the most current recommendations for isolation and patient care.

**Essential Services of Public Health**
Updating/development of policies.
Informing, educating, and empowering.

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**Topic: Infection Control**

**Title: Hospital Infection Control – Isolation Precautions Evaluation**

**By Elizabeth Foster**

**Public Health Significance**
Hospital infection control as a whole is a public health issue because it deals with protecting an already vulnerable segment of the public from acquiring a potentially life threatening infection. My particular project was important because it dealt with the role of health care workers, particularly nurses, in transmitting infections within the hospital by evaluating their compliance with hospital policies regarding isolation precautions. Preventing disease transmission in the hospital setting is important in long run because the majority of the patients treated will eventually leave the hospital and interact with the general public. In addition, hospital staff could potentially be taking infectious agents out of the hospital.
Approach
I approached this topic by spending a lot of time observing staff in the hospital units I evaluated and by evaluating every isolation patient admitted during the course of my project. I was able to use the hospital's audit tools for both measures. In evaluating the hospital staff, I looked at their hand-hygiene practices and whether they were wearing appropriate protective equipment when caring for patients on isolation. I also evaluated whether the chart of each isolation patient had the correct information and isolation warnings on their charts and outside their rooms. I also conducted a small survey to determine their knowledge of and attitudes towards current hospital isolation policies.

In addition to my project, I spent the first month of my practicum shadowing the individual Infection Control Practitioners. They each showed me their areas of responsibility around the hospital and how they do surveillance in the hospital ICUs and keep the unit staff up to date on hospital policy relating to infection control. I also learned about the criteria used to decide if a patient has a hospital acquired infection.

Findings
I produced a detailed report listing the deficits on each unit and proposed ways to educate staff that focused on the areas where they needed the most improvement. The area with the most room for improvement was in overall compliance with isolation and hand hygiene protocol during patient care. Full compliance with Isolation Protocol was only 53% (45/84) and the average score on the survey was 81%. Hand hygiene was evaluated as percent compliant before and after patient care. The overall percent compliant before patient care was (19/89) 21% and the overall percent compliant after patient care was (80/159) 50%. I have also developed an educational tool that addresses these deficits for use in the hospital.

Essential Services of Public Health
As a whole the Infection Control department touches on many of the Essential Services. My individual project fell under “Diagnose and Investigate Health Problems/Hazards” and to a lesser extent, “Inform, Educate and Empower People”. I spent most of my time investigating how well the hospital staff on two units was following isolation and hand hygiene protocols. By performing this investigation, I was able to provide a valuable service to the Infection Control Department in informing them about the status of isolation compliance within the non-ICU units.
Topic: Inter-Relationship Between HIV and Other STIs In Adolescents

Title: Inter-Relationship Between HIV and Other STIs In Adolescents: A Training Course Curriculum

By Corinne Bruce

Curriculum Design and Development: Corinne Bruce and Tai Few
Training Center Coordinator: Tracee Belzle
Project Director: Anne Freeman

Abstract
This Inter-Relationships Training Curriculum was designed to address to alarming rates of sexually transmitted infections (STIs) among adolescents and to place emphasis on the relationship between HIV and STIs. The Inter-Relationship training is intended for HIV and STI providers as well as drug treatment providers who work with adolescent clients (15-24 yrs). The goal of this training is to increase the understanding of the inter-relationship between STIs and HIV, increase incorporation of STI prevention messages in HIV prevention programs and the reverse, and to increase communication skills with adolescent clients. Emerging evidence suggest that infectiousness of HIV may be increased, that is, there may be an increased transmission probability when the HIV-positive partner in a relationship has an STI. Additionally, susceptibility to HIV may be increased, that is, there may be an increased probability of transmission when the HIV-negative partner within a relationship has an STI. As a result of this evidence the role of STI/HIV providers is to routinely screen for STIs in adolescent patients, HIV counseling and testing for all patients with an STI, routinely screen for STIs for patients with HIV/AIDS, and to screen and treat asymptomatic patients for STIs to prevent HIV transmission. The inter-relationship of HIV and other STIs is equally important for HIV-positive and HIV-negative people. This training examines how: STIs can set someone up for infection with HIV, co-infection with both HIV and another STI further strains the immune system, and a STI that may be readily treatable with no long-term health consequence in a HIV-negative person can have serious consequences for someone with HIV. As prevention providers, a clear understanding of this
inter-relationship better equips you to assist clients with behavioral risk reduction.

Topic: Intervention Research on Youth Development to Prevent Teen Pregnancy

Title: Successful Youth: Collaborative Youth Development Program

By Jenita Parekh

Public Health Significance
Texas has the highest rate of teen births in the nation as well as the highest rate of repeat teen births in the nation. Teen parenthood is associated with poverty, high school drop outs, and poor outcomes for both the parent and his/her children. According to the CDC, 1 in 4 teens are afflicted with a sexually transmitted disease. Successful Youth is a special interest project under the University of Texas Prevention Research Center, partnered with several community organizations including Planned Parenthood and St. Luke’s Episcopal Health Charities. My involvement was through St Luke’s Episcopal Health Charities. Successful Youth is a multi component youth development program for middle school students, delivered through daily after-school activities. Activities include academic tutoring, service learning, career exploration, mental health management, arts, life skills education, and access to health services. Long term outcomes of the project are an increase in graduation rates, reduction in drop-out rates, reduction in teen pregnancy, and reduction in STIs/HIV.

Approach
I became involved in the planning stages of the project. As a result, my involvement to date has primarily been in background research and survey development. The pilot program kicks off with the start of the 2008-2009 school year. We are in the process of recruiting 50 middle school students for the study. Evaluation measures include a pre/post survey that I developed over the summer. This 122 page survey included the following measures: cognitive competence, belief in future, social competence, emotional competence, connectedness, parental communication, bonding to positive peers and adults, and sexual activity/belief measures. This survey will be administered in the fall.
Findings
Findings for the pre test survey will be available beginning of fall. I expect to continue my practicum throughout the year and will be analyzing these results as well as conducting a mid-year evaluation in December that will serve as my thesis.

Essential Services of Public Health
Several essential services are addressed through this project. A central goal of the project is to inform, educate and empower middle school students so that they can make wise choices as adults. This project is also the result of efforts of many community partners including: CIS, HISD, SLEHC, Planned Parenthood, UTSPH, Depelchin, YWCA, Parks & Recreation, Houston Council for Drugs & Alcohol, PATH, and local teen clinics. Lastly, evaluations of the effectiveness, quality, and logistical strength of this program will be conducted at several points throughout the school year.

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Topic: Managing Disaster Victims

Title: Assessment of Services Offered to Stay Connected Clients

By Catherine Gómez

Public Health Significance
The Stay Connected program offers case management services to those displaced due to Hurricanes Katrina and Rita. This situation is of Public Health concern because thousands of people have found themselves situated in unfamiliar areas and need access to services such as healthcare, employment, and counseling.

The program provides services to those individuals who are currently receiving rental assistance by the Disaster Housing Assistance Program (DHAP) and is scheduled to end in March 2009.

The case management processes include: conducting needs assessments, establishing service plans, researching and referring clients to available resources, advocating for the client, and providing them with direct financial assistance if they qualify.
**Approach**
We use a database called Tracking at a Glance (TAAG), which allows us to collect information and complete needs assessments and service plans. Once service plan goals have been established, our role is to connect the client to available resources in their areas so as to help them achieve their goals. These contacts are usually done over the phone. My collaboration was initially to assist clients with their employment needs; to develop further employment service strategies; and to evaluate the efficiency of the employment services offered. However, in July my position changed to that of Lead Service Connector and my current role is to supervise the case management staff working with the clients that are scattered across the US (as opposed to those residing in Houston). This new role has provided me with the opportunity to make sure that the clients are receiving the information and assistance they need.

**Findings**
Of the 1,041 current clients being case managed by my staff, the following data represents the findings during the past 3 months as far as referrals made, goals accomplished, and employment services provided:

**Referrals:**
- 217 referrals were made to employment services
- 224 referrals were made to healthcare services
- 98 referrals were made to mental health services

**Service Plan Goals Accomplished:**
- 41 employment goals were accomplished
- 35 health goals were accomplished
- 10 mental health and counseling goals were accomplished

These findings are so low mostly due to our inability to reach many of our clients.

**Employment Services:**
From May to July, I was able to provide employment services to 134 clients. These clients were assisted mostly with tailored employment leads and resume help. Also, a survey was being developed to determine how effective clients found the services, but this was not completed.
**Essential Services of Public Health**
Our program primarily addresses two of the essential services: to inform, educate and empower, and to link people to needed services. Basically all components of the program strive to connect individuals to the services they need and to educate them about how to access these services. Our hope is to familiarize our clients with what is available, so that when our program ends, they possess the skills and tools with which to help themselves.

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**Topic: Mental Illness**

**Title: Telemedicine: One Method to Address Mental Health Underservice in Texas**

By Laura Tu

**Public Health Significance**
The population with serious mental illnesses is considerably underserved in the state of Texas. To illustrate, only an estimated 31% of adults with serious mental illnesses and 23% of children with severe emotional disturbances had access to Texas DSHS-funded community mental health services in 2007. This may be due to the fact that the population with mental health disorders faces many barriers to accessing treatment services. Some of the major factors contributing to constrained access for this population include: fear of stigma associated with mental disorders, high cost of treatment, lack of transportation, and an insufficient number of mental health professionals.

The use of telemedicine not only dramatically reduces travel time and expenses for psychiatrists, but is also a cost effective solution for patients.

The pilot allowed mental health services provided through telemedicine to be billed under Medicaid, thus addressing multiple barriers (distance, cost, availability of mental health professionals) regarding access to mental health services.

**Approach**
To be able to compile a comprehensive report with well-reasoned recommendations, I conducted a literature review, initiated meetings to
discuss a variety of topics related to the policy including reimbursement mechanisms, Medicaid policy, underserved area designations, and analyzed utilization, outcomes, and cost impact data.

Findings
My final product was a report to the legislature regarding the success of the pilot and whether to continue, eliminate, or expand the program. The final overarching recommendation was to adopt the pilot program parameters into current Medicaid policy.

Essential Services of Public Health
My project primarily addressed essential services #7 and #9.

Essential service #7 is providing a link for people to needed personal health services and assuring the provision of health care when otherwise unavailable. Since those with serious mental illnesses are already underserved, telemedicine offers one method to reduce barriers and increase access for this population.

Essential service #9 is evaluating the effectiveness, accessibility, and quality of personal and population-based health services. My report considers the available state data on the telemedicine mental health services provided pre- and post-pilot implementation to evaluate the service utilization rate, the proportion of telemedicine mental health service to overall mental health services, comparative quality outcomes between telemedicine and traditional (face-to-face) service delivery, and cost impact of providing telemedicine mental health Medicaid services to the state.
Topic: Needs Assessment

Title: The Comal County Needs Assessment Youth Survey

By Duncan G. Hughes, M.D.

Public Health Significance
A crucial link in preserving and protecting the future of our communities resides in maintaining the health and well being of our youth. While every member of the community owns an opinion regarding where to best utilize monies for prevention and intervention, the data to support such opinion is often scarce. In an effort to generate data-driven indices for community planning and action, the United Way of Comal County, Texas partnered with the University Of Texas – Houston Health Science Center, School Of Public Health to accomplish a county-specific needs assessment.

Approach
A community-based participatory research emphasis utilizing the Mobilization for Action through Planning and Partnership (MAPP) format developed by the National Association of City and County Health Officials (NACCHO) was implemented to engage community members in identifying and addressing community priorities. The single greatest area of consensus and concern identified by community members was the health and well being of the youth population. Thus, a youth survey, targeting these specific areas of community concern, was designed, coordinated and administered to all 9-11th grade students in the county.

Findings
20% of the 3,698 completed surveys (72% response rate) were randomly selected for analysis. These 740 surveys were coded and scanned into an electronic survey database. Statistical analysis provided youth-reported data on the status of the multiple issues affecting the health and well being of the community’s youth. These data will be reported back to the community stakeholders, as part of the larger Comal County Needs Assessment, for the purposes of community planning and action.
Essential Services of Public Health
Survey data will provide community planners with an awareness of the high risk behaviors and habit patterns amongst their youth. This knowledge will permit more effective targeting of the means for encouraging healthy behaviors and preventing the spread of disease. Further, the community-oriented, population-based nature of this effort will provide answers to questions raised by the community and will provide an effective launching pad for the development and implementation of targeted, preventive health strategies.

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Topic: *Neisseria meningitides* Trends

Title: *Neisseria meningitidis* Trends in Dallas County from 1996-2007

By Ann Ikonne

Public Health Significance
*Neisseria meningitidis* causes a considerable amount of morbidity and mortality globally and is chief cause of bacterial meningitis and septicemia in children and young adults in the US.\(^1\) In 2005, Dallas County began the administration of a new vaccine, Menactra a quadrivalent conjugate vaccine that protects against serogroups A, C, Y and W-135 in its clinics\(^2\). The purpose of the study was to determine if the dispensation of Menactra had an impact on the *Neisseria meningitidis* prevalence in Dallas County.

Approach
*Neisseria meningitidis* is a reportable condition, and the county must be informed of all occurrences. This project was conducted by examining Dallas County Meningitidis Morbidity Reports from 1996-2007. In order to ensure that all cases documented were actual Dallas County residents, addresses and zip codes were compared to on a map of Dallas County. In addition, Dallas County Census Data was used determine incidence rates.

Findings
By visual inspection it is evident that there has been a noted decrease of *Neisseria meningitidis* Cases in Dallas County since the administration of
Menactra in 2005. To further verify these results, simple statistics were completed.

The average number of cases from 1996-2004 were $21.22 \pm 7.8$, whereas the average number of cases from 2005 - 2007 was $3.67 \pm 1.41$. Using a modification of the two-sample t-test that assumed unequal variances, we were able to test whether there was a significant decrease of Neisseria meningitidis cases after the administration of Menactra in Dallas County during 2005. With a p-value less than 0.0005, we can conclude that the average number of cases between 2005 and 2007 are significantly different than the average number of cases between 1996 and 2004.

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<td>std</td>
<td>7.806692</td>
<td>1.414214</td>
</tr>
<tr>
<td>Cases</td>
<td>191</td>
<td>11</td>
</tr>
</tbody>
</table>

Hence, we have seen a decrease of Neisseria Meningitidis cases since the administration of Menactra in Dallas County. However, due to the cyclical nature of meningitis, one cannot emphatically conclude that the decrease in Neisseria meningitides in Dallas County is solely attributed to the administration of Menactra and further analysis needs to be taken.
Essential Services of Public Health
This project fulfilled The Essential Public Health Services of monitoring and evaluation. I was document and exhibit the Neisseria meningitidis cases in Dallas County over a span of eleven years and report its changes and trends. In addition, the results of my project are able to provide a certain amount of assurance that the distribution of Menactra has been effective in reducing meningitis morbidity in Dallas County.

References


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Topic: Ovarian Cancer Progression

Title: Single nucleotide polymorphisms (SNPs) and Chemotherapy Resistance in Ovarian Cancer Patients

By Larissa A. Meyer

Public Health Significance
The cellular and molecular mechanisms underlying ovarian cancer progression and resistance to platinum based chemotherapy are poorly understood. Investigating genetic polymorphisms of genes involved in drug metabolism, DNA repair, cell cycle control, apoptosis, disease progression and metastasis may help improve treatment selection and quality of life for ovarian cancer patients. Survival for women with ovarian cancer diminished significantly once the onset of platinum resistant disease occurs. Exploration of genetic polymorphisms and their association with treatment outcome may help provide a means of identifying a sub-group of patients likely to benefit from patient-specific treatment strategies or ultimately from chemo-prevention.

Approach
To begin the data collection for this study, I reviewed all patients with ovarian cancer who had available specimens in the tumor bank from 1997-2007 for women with the appropriate stage and histology and selected 298 patients who fit study criteria. These samples were then pulled from the tumor bank and using Quiagen QIAampDNA Blood Mini-Kit, DNA was extracted from patient samples of peripheral blood lymphocytes.

Findings
The extracted DNA varied significantly in both concentration and quality. Further methods of purification and concentration needed to be employed in order to obtain DNA of sufficient purity and concentration for analysis. The final product of this practicum is evaluable DNA. The ultimate product will be an analysis on single nucleotide polymorphisms and a determination of genotypic distributions of the various polymorphisms and their association with response to treatment.
Essential Services of Public Health
My project primarily addressed the essential service “Research new insights and innovative solutions to health problems”.

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Topic: Pediatric Emergencies

Title: An Office Based Education Program To Improve Pediatric Emergency Preparedness Among Primary Care Practitioners

By Joyce Li

Public Health Significance
Pediatric emergencies can present suddenly and unexpectedly to a pediatrician’s office. When they do, they can cause confusion and considerable stress to the unprepared medical provider. Prior preparation for office emergencies and the appropriate use of available resources can help expedite treatment and stabilize the critically ill child more quickly in the office. However, various reports document the lackluster preparedness effort of most general pediatric offices. They were found to be deficient in life saving skills education, available emergency equipment as well as plans for continuing education for emergency readiness in their offices.

In a survey of 9 pediatric practices, the reported frequency of office emergencies was more than 3/year. However, these same physicians reported difficulty in keeping their Pediatric Advanced Life Support (PALS) certification up to date in addition to reporting that managing office emergencies and establishing intravenous/intra-osseous access as challenging problems.

Children have little respiratory reserve and often require immediate assistance. Even a short period of hypoxia can result in life-long neurologic damage, which is costly on the family and patient but ultimately is costly on society as well. By instituting an educational program focusing on new developments in emergency care as well as a review of general emergency care, we hope ultimately there will be improved pediatric care of critically ill children by increasing the efficiency of appropriate care.
Approach
For the preparation part, we wrote a review handbook and a 30 minute presentation. The handbook reviewed roles of the staff in emergencies, how a pediatric office can stay prepared for emergencies, reviewed basics in the critical care of a child and reviewed common procedures needed in a pediatric emergency. We prepared mock codes as well as pre- and post-test in addition to pre- and post-surveys of perceived skills and knowledge. I assisted in the editing, photography and layout in all of these projects. Once the materials were prepared, I participated in five presentations at pediatric offices, which consisted of a pre-test followed by the 30 minute PowerPoint presentation. After the presentation, two mock codes were performed in the actual pediatric office followed by the surveys and post test. We have currently collected information from 19 physicians and 13 nurses.

Findings
At this time, we have not collected enough to reach 80% power. However, an interim data analysis has been done with overall increase in scores in both the physicians and nurses:

<table>
<thead>
<tr>
<th>Provider</th>
<th>Mean Score</th>
<th>Std Deviation</th>
<th>Std Error of Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>MD Pretest</td>
<td>11</td>
<td>2.7</td>
<td>0.62</td>
</tr>
<tr>
<td>Posttest</td>
<td>13</td>
<td>1.1</td>
<td>0.25</td>
</tr>
<tr>
<td>RN Pretest</td>
<td>10</td>
<td>1.9</td>
<td>0.55</td>
</tr>
<tr>
<td>Posttest</td>
<td>11</td>
<td>1.8</td>
<td>0.48</td>
</tr>
</tbody>
</table>

Essential Services of Public Health
The main service that this project provides is that it ensures the quality of healthcare provided. Pediatric healthcare is of rising concern throughout the United States with a recent particular focus on emergency medicine. As such, it is important to the community that general pediatricians be appropriately trained in basic pediatric critical care.
Public Health Significance
Pediatric health care is sorely lacking in undeveloped countries. Many children suffer and die from preventable and treatable diseases in these settings. Four common illnesses that can be addressed by minimally trained health workers are trachoma, intestinal parasites, scabies, and skin fungus. This project attempted to address these illnesses in two rural communities in Ethiopia by providing intervention, as well as training on prevention.

Approach
Over 400 children were seen in each community over a six day period. These children were screened and treated for the illnesses above, as well as some other less common illnesses. On the seventh day, the parents were brought in for a community meeting where we told the community what we illnesses we had identified in their children and how we had treated them. The community elected a health committee at this meeting, which will now act as a liaison between local health organizations and the community to implement prevention efforts and to provide treatment when needed.

Findings
We found the clinics to be successful in managing the diseases targeted. We also found the election of a health committee to be a feasible option to maintain sustainability after our departure.

Essential Services of Public Health
This project addressed the following:

• Monitor Health Status
• Inform, Educate, and Empower People
• Mobilize Community Partnerships
• Link People to Needed Personal Health Services
Topic: Premature Birth

Title: Antepartum Family Support Program

By Arati Bhosale

Public Health Significance
I completed my practicum by working as an intern for March of Dimes organization. I specifically was involved in the Antepartum Family Support Program offered by the organization as an effort to address the issue of premature birth by providing social support and educational material to the pregnant women, and their family, who are at risk of preterm labor.

I was able to achieve the objectives for the practicum which were:

- Receiving training and then implement volunteer and related project coordination tasks.
- Spend time at community sites meeting with pregnant women on bed-rest in the Antepartum unit in the parenting hospital and provide related services like social support to patients via one-on-one or group interactions and hospital orientation on various patient resources.
- Facilitate access to information by using March of Dimes materials on what parents-to-be might expect in case of a preterm labor.
- Assist with supply chain for program materials, tracking program activities, data entry of program evaluation forms and track in database.

As an intern I got a valuable opportunity to work with a good organization and was able to accomplish the final goal of the practicum which was to gain the basic knowledge of field work and learn the practical application of the public health principles in the real world community setting.
Topic: Prematurity and Low Birth Weight

Title: Neonatal/Low Birth Weight Nutrition Registry

By Latoya Edwards

Public Health Significance
Prematurity and low birth weight is a leading cause of infant mortality in the United States. Despite increased prevention throughout the medical and public health settings, premature/low birth weight infants continue to be a large proportion of all births in the United States. The purpose of the neonatal nutrition registry is to evaluate the effects of specific NNICU practices, detect incidence of breastfeeding, and evaluate the relationship between specific diseases on short and long-term outcomes. The overall intent of the registry is to provide a baseline measurement from which to measure ongoing quality improvement and future interventions for infants in the Parkland Health and Hospital System (PHHS) Neonatal Intensive Care Unit (NNICU) and the Children’s Medical Center Low Birth Weight Clinic (LBWC).

Approach
The data has been collected both retrospectively and prospectively from NNICU and LBWC for infants born at Parkland and then followed at LBWC. Infants included in the registry were those born at less than 1000 grams between 1/1/2004-12/31/2005 and less than 1500 grams 1/1/2006-12/31/2007. I was directly involved with the LBWC data collection for the less than 1500 grams infants born between 1/1/2006-12/31/2007. For these infants, we focused on baseline data including weights, lengths, and fronto-occipital head circumferences at birth, 36 weeks, PHHS discharge, 1 month post discharge, six months chronological age, twelve months chronological age, and eighteen months chronological age. Formula type, intake amount, caloric density, method of feed, and any additional formula additives were also recorded at these intervals including when solid foods were introduced. Specific lab results, diagnosis, and medications were documented. Lastly, we recorded documented nutritional, developmental, or social problems to identify any additional correlations. Data transferred from collection sheets to password protected database for ongoing updates.
Findings
The registry is an ongoing project that will provide ongoing information for improving quality of care with the low birth weight infant population. Currently, the project is still in the retrospective data collection stage to bring the registry up-to-date both on the PHHS and the LBWC ends. Once the registry is up-to-date, clinicians will be able to detect correlations so that future interventions can be specialized for optimal outcomes.

Essential Services of Public Health
The essential public health service that the registry project primarily addresses is public health screening. Through the screens and data collection from this population, biostatistical inference can be applied to design and evaluate future interventions. The registry project also demonstrates the need for cooperation and communication among physicians, allied health professional, and public health organizers in order to develop the most efficient and comprehensive plans of action.

Topic: Prenatal Outreach and Education
Title: Sisterhood of Faith in Action: Prenatal Outreach and Education
By Janet Perkins

Public Health Significance
The prenatal period is a critical time in the life course of an individual and pregnancy presents specific issues and concerns for a woman. What a woman chooses to do or not do during this period can have lasting health consequences, positive or negative, for the infant and the woman. Prenatal health education may be beneficial in helping women to take care of themselves and to give their infants the best start possible by providing knowledge and empowering women to take charge of their health during this critical period.

Approach
Sisterhood of Faith in Action (S.O.F.I.A.) is a non-profit, community-based organization that is located in the Acres Homes area in Houston, TX. They provide several different programs with the aim of improving health in the Acres Homes community. One of the programs is a prenatal
outreach and education program targeting the Hispanic and African American populations in the community. My practicum experience at S.O.F.I.A. was focused on expanding the prenatal program.

To begin the expansion of this program, I conducted a thorough literature review of peer-reviewed journals to determine what has been found to work regarding prenatal education with a focus on settings in which education has been provided. My next task was then to use the findings from the literature review to identify organizations in the community that we could potentially partner with in providing prenatal health education. Organizations that were identified included health care providers, hospitals, clinics, community centers, schools, churches, and governmental organizations such as WIC. I contacted each of these organizations by both phone and mailed letter and met with those who were interested in working with us in person.

I developed the materials related to the prenatal health education program, including Power Point presentations, brochures, flyers, and organizing incentives to be distributed at educational sessions. I attended community events to promote the program and to increase the presence of S.O.F.I.A. in the Acres Homes area. Additionally, I responded to other needs in the community, including providing education related to childhood health by creating a curriculum, materials, and providing educational sessions.

**Findings**

My final product was a PowerPoint presentation. The bottom line is that prenatal health education may be beneficial in improving health outcomes; however, there are many challenges in building community partnerships and providing this education.

**Essential Services of Public Health**

The two essential services of public health that I focused on most heavily throughout my practicum was to (1) inform, educate, and empower people about health issues and (2) mobilize community partnerships and action to identify and solve health problems.
Topic: Primary Preventative Dentistry

Title: The School Sealant Program: Improving Implementation and Evaluation Techniques

By Reena Reddy

Public Health Significance
I have chosen to work in the Houston Department of Health and Human Services Bureau of Oral Health. The Bureau of Oral Health (BOH) provides primary preventative dentistry to its participants throughout the Houston area. Particularly I am working on the School Sealant Program (SSP). The SSP dentists and staff travel with portable equipment to and from schools, having 95% or more participation in the Free and/or Reduced Lunch Program, to provide sealant placement and oral health education for 2nd grade students. Dental caries and periodontal disease are two of the most common oral diseases. Primary preventative dentistry is put in place to help stop the onset of oral disease and possibly even reverse any preliminary advancements of the disease. These sealants create a barrier and prevent caries from destroying the dental tissue in newly erupted molars. Without proper dental care, extensive decay can limit a child's ability to attain a normal weight and height along with many other consequences to function, ability to learn, and self-esteem. Prevention plays a key role in public health and I believe that future generations will benefit greatly from programs such as these.

Approach
When I began my practicum, the SSP’s current methods for documenting sealant data were somewhat confusing and made the data difficult to analyze. While researching more efficient ways to document sealant placements and follow-up evaluations, I came across SEAL America which is offered by the CDC to sealant programs similar to ours. I was surprised to discover that such a valuable tool was unknown to our program. After contacting the CDC’s affiliated representative, I was able to obtain more information on this highly useful software program. I presented my research to the SSP and proposed that our sealant program take on SEAL America’s outline and software. The proposal was immediately accepted by the team and was soon implemented.
Findings
Since the SSP team decided to change the program methods to fit my newly proposed program, I have been converting the previous year’s data to the new system. Once all of the schools’ pre and post sealant information is entered, I will be able to use the new software to analyze the efficiency of our sealants as well as eventually determine financial allocations. We will be able to beneficially use the analysis in order to increase funding for our program as well as awareness of the importance of our mission.

Essential Services of Public Health
The School Sealant Program successfully addresses the essential public health services to Inform, educate, and empower people about health issues through comprehensive oral health education programs designed to inform children of the benefits of proper oral hygiene. The SSP program also addresses the need to Evaluate effectiveness, accessibility, and quality of personal and population-based health services through the documentation of initial sealant placements and the evaluations six months afterwards. This data is analyzed and used to improve techniques as well as the efficiency of the program.

Topic: Public Health Airmen of USAF
Title: Public Health Practice in the United States Air Force (USAF)
By Anthony Waldroup M.D.

Public Health Significance
The public health Airmen of the United States Air Force exists to apply public health principles and techniques to promote and prevent communicable and occupational illness/injury to ensure a fit and ready United States Air Force. The United States Government requirement to maintain a fit and ready military force to defend the United States against aggression drives the need for public health officials to promote healthy lifestyles, prevention of illness/injury, and if necessary the identification and elimination of health threats to the force. The scope of public health officials in the United States Air Force is broad and includes the welfare of military as well as the families of military members, civilian employees, and any person working or visiting a United States Air Force facility or base.
Approach
The approach of USAF public health officials in ensuring a fit and ready military force includes a multifaceted interaction with individuals through interviews, facility inspections, policy and regulation development and reporting, and advising commanders regarding public health issues.

The three specific activities engaged in during my practicum included the evaluation and reporting of the annual tuberculosis surveillance program for Randolph Air Force Base, Texas. Second, was the annual report of the Food Vulnerability Assessment for Randolph Air Force Base, Texas; and the last was a consult regarding the health effects, risk, and recommendations to mitigate bat guano exposure to employees in a base facility.

Findings
The findings of the tuberculosis surveillance program found that Randolph Air Force Base to be considered low risk for tuberculosis based on defined criteria. The Food Vulnerability Assessment is a classified document and is not disclosed. The report on employee exposure to bat guano showed the employees to be a low risk for histoplasmosis with recommended precautions. Recommendations to seal entry and exit gaps in the roof to prevent housing of bats were made.

Essential Services of Public Health
The essential services of public health addressed during this practicum include disease surveillance and risk mitigation.
Topic: Research Project Coordinator for Pilot Study

Title: Physician’s Experience and Perspectives About Primary Care Office Visits

By Alexandra Shepherd

Public Health Significance
As a pilot study, this research project, funded by the VA medical system, aims to provide a thorough analysis of the primary care system. Specifically, as outlined in the study proposal, this study addresses the issue of mental health care in Primary Care, and how effectively it is handled. Though the study entails a small sample size (twenty study subjects total and twenty data collections total), the results and subsequent qualitative analysis of the findings will offer professionals in the primary care system insight into the quality of office visits. Ultimately, the issues presented in this pilot study are relevant to the field of public health, as it will potentially illustrate how the primary care system can be improved, to better address mental health problems among the Veteran population.

Approach
I was employed as Research Project Coordinator for this pilot study in March; I have been involved in this project from its inception to present. Thus far, I have been responsible for recruitment of all study subjects (both patients and physicians), coordination with the necessary VA administrators, data collection and data processing. As this is an ongoing study, I will continue to serve as the research project coordinator until the completion of the study.

Findings
Thus far, I have completed the data collection for two subjects. As the study proposal is currently up for review with the Institutional Review Board, I am in the process of making revisions/amendments to the proposal. Once the proposal renewal has been approved, I will continue with data collection. At this point, I have become much more familiar with all processes involved concerning the Institutional Review Board and proposal writing. Also, I have learned how to coordinate with many different people while ensuring the project proceeds smoothly and in a timely manner. I have also gained insight into what current issues in health
care should be addressed, especially from a public health approach. Having worked in the VA medical system, I see that there is some room for improvement in the primary care system. Studies such as this one ultimately help by presenting an analysis of the efficacy of the patient-physician office visits. As many patients of the VA medical system are afflicted with mental health problems, it is important that mental health be an integral part of the office visit between patient and physician. It is my hope that upon analysis of the results, we will be able to offer a better approach to the primary care office visit, to ensure that all important health issues are addressed.

**Essential Services of Public Health**
This project addressed several services of public health. Primarily, it addressed the efficacy of a health care system (Houston VA). In conducting a qualitative analysis of Primary Care specifically, it will potentially offer insight into how Primary Care Physicians might better administer care to their patients. I anticipate that the study results will suggest that the Primary Care system would be improved if mental health care specialists were integrated, and that care for patients would also be bettered if mental health problems were consistently addressed during office visits with primary care physicians.

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**Topic: South Texas Environmental Education and Research**

**Title:** Los Dos Lados del Rio/The Both Sides of the River

**By Cameron Culver**

**Public Health Significance**
The South Texas Environmental Education and Research (STEER) rotation is designed to expose students to issues of environmental and occupational health along the Texas-Mexico border. Residents along this border, on both sides, are disproportionately impoverished, have higher exposures to environmental health hazards, higher prevalence of diabetes and other chronic and infectious diseases, and less access to health care, primary, urgent, and preventive. This is important, as the disparities that exist in this region are both broad and deep, and with a semi-porous border, the health on one side inevitably affects that on the other.
**Approach**
The rotation was scheduled for four weeks beginning June 3 and ending June 27, 2008 with various lectures and activities concerning environmental health beginning at 8:00 a.m. and ending by 5:00 p.m. each day. I conformed to this schedule, took notes, asked questions, assimilated information, and reflected both introspectively and with classmates each day.

**Findings**
As an experiential learning opportunity, my final project, other than the reflection paper, was the experience itself and its lasting impact on me. It was the experience of a lifetime, and it has significantly broadened my understanding of both environmental medicine and public health as a whole. It has also given me insight into many potential career paths of which I was otherwise wholly unaware.

**Essential Services of Public Health**
My project addressed each of the essential services of public health either directly or indirectly including: monitoring, diagnosis and investigation, education, mobilization, policy, enforcement, linkage, assurance, evaluation, and research. The two primarily addressed were education and research (STEER).

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**Topic: South Texas Environmental Education and Research**

**Title: Border Health Issues and STEER**

**By Sarah Duong**

**Public Health Significance**
The STEER program has been designed to increase awareness of health issues along the United States – Mexico border. The U.S. – Mexico border is approximately 2000 miles long with a large number of residents that often travel between the two countries. Laredo in particular is one of the largest inland ports with millions of trucks transporting goods between the United States and Mexico annually. Although divided between two countries, people living along both sides of the border share cultural similarities, environmental conditions such as climate and agriculture, and importantly they share diseases. The city of Laredo estimates that
approximately 100,000 people cross the border between Nuevo Laredo, Mexico and Laredo, TX each day. The two cities share a common water source amongst other things. With the vast amount of interaction, communicable diseases are unstoppable. Along the border, diseases that are typically found in developing countries are met with those found in developed countries. Therefore, the health of Nuevo Laredo is in essence the health of Laredo. The STEER program has worked towards developing understanding of the duality of health issues along the border, while examining the differences between residing on the Mexican versus United States sides of the Rio Grande.

**Approach**
In order to obtain an understanding of border health issues, speakers from various public health fields presented daily. Lectures included information on communicable diseases such as dengue, environmental health issues such as indoor air quality, asthma, water quality, and herbal medicines. In addition, visits were made to community health departments in both Nuevo Laredo and Laredo, patient homes, water and waste water treatment plants, and hiking along the Rio Grande through arid ranchland to develop a complete understanding of the various topics presented.

**Findings**
Because the border along the United States and Mexico is removed from the rest of nation geographically and culturally, health issues of the region is sometimes forgotten and not addressed on a national level. There is three times the number of doctors available (per 100,000 people) on average in the United States than along the border regions. Overall, the border regions of the United States, is a highly medically underserved area and requires extensive public health interventions along with increased medical care in order to meet the needs of the people.

**Essential Services of Public Health**
The STEER program has addressed the essential service of public health: to inform, educate, and empower people about public health issues. In addition, it has evaluated the effectiveness, accessibility, and quality of personal and population-based health services.
Public Health Significance
Environmental conditions are an important determinant of health and healthcare of a given population. This aspect of public health is especially unique along the Texas-Mexico border where the population consists almost entirely of Mexicans and Mexican-Americans. Because of this unique population distribution and respective lifestyle, different approaches to social, economic, and environmental issues must be taken to accommodate the population along the border.

Environmental health along the south Texas border is greatly influenced by local and international factors. The STEER program addressed many of these important issues such as healthcare access for local, rural and international populations; implementing various bi-national programs regarding the food and water supply, national security, infectious disease epidemics in Texas and Northern Mexico; educating people on proper dieting to reduce disparities such as obesity and diabetes; ensuring food and water sanitation; educating people on the harmful effects of outdoor and indoor air pollution; reducing toxic exposures to pesticides; preventing contamination of the Rio Grande River water supply; and dealing with rising conflicts of interest of Homeland Security as well as ideas to establish a physical barrier along the United States-Mexico border.

Approach
To learn about the above issues and topics, we made site visits to water treatment facilities, waste and recycling facilities, colonias (rural residences), a monte (a natural area) with an herbalist, health departments, and other healthcare facilities. We participated in conferences and case studies and completed assigned readings—all of which better informed us of the previously mentioned issues. We also interacted with various local and visiting physicians, Promotoras (lay health educators), and other public health officials. We learned about testing for water and air contaminants, taking exposure histories, performing environmental house calls, and how
to go about educating at-risk or uneducated communities about exposure risks and preventative measures for illnesses and disease.

**Findings**
Overall, this experience toured an unfamiliar culture and lifestyle along the border and exposed important issues pertinent to this region. There is a need for increased cultural competence in both politics and medicine to better serve, protect, and treat the populations along the border. In politics, current rhetoric and debate is concerned with developing legal doctrine and strict physical barriers to “secure” the border. In reality however, many of these proposals could have a devastating impact on not only the bi-national tradition of the border population, but also the environment and natural habitats for animals.

**Essential Services of Public Health**
This practicum experience addressed many of the essential services of public health. For the purposes of this abstract I will recount two public health services primarily addressed during the month:

(1) **To inform, educate and empower people** on food and water sanitation, outdoor and indoor air quality management and exposure risks, and available healthcare options;

(2) **To research new insights and innovative solutions to health problems** such as Dengue fever, West Nile Virus, Yellow Fever, Shigellosis, rabies, tuberculosis, asthma, and lack of integrative herbal therapy in medical treatment.
Topic: South Texas Environmental Education and Research

Title: South Texas Environmental Education and Research (STEER)

By Kelly Fegan

Public Health Significance
In a border state such as Texas, there are specific health issues that arise due to the movement of people back and forth between two countries with different health systems and with a large amount of people of very low socioeconomic status. In order to prevent disease in these populations, many public health efforts are made to educate and provide basic preventive care to the populations along the border. Border health is important because we live in a highly mobile society where issues that start at the border can spread rapidly in very little time. Therefore, these issues affect not only those states along the border with Mexico, but in all of the contiguous forty-eight states.

Approach
During the STEER practicum, we had the opportunity to observe many practitioners in the field of public health. We attended numerous lectures and learned about the multifaceted issues facing the people that live along the USA-Mexico border. We also had the opportunity to do site visits to several public health centers, including the Port Isabel Detention Center medical facility, the UT Houston School of Public Health Brownsville regional campus to tour their research facility, and a CATCH program demonstration at an elementary school in Brownsville.

Findings
During the practicum, we learned about how public health practitioners solve the problems in their particular region using public health practices. As well, we were able to directly observe the research being done on issues specific to border health. With the knowledge we have gained from this experience, we can better know how to address public health problems in our own communities, as well as having a new respect for the problems faced at the border.
Essential Services of Public Health
The STEER practicum specifically addressed the assessment and policy development services of public health. We were able to directly observe how an assessment of a public health issue in a specific community was accomplished, and how policy was developed based on the public health needs of that community.

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Topic: South Texas Environmental Education and Research

Title: Empowering MD/MPH Students to Advocate for Border Health: STEER Program in Harlingen

By Megan Gray

Public Health Significance
The four counties of the Lower Rio Grande Valley comprise a region largely distinct from the rest of Texas. With at least 80% of the population identifying as Hispanic in the cities and surrounding areas of Brownsville, McAllen, Harlingen, and Edinburg, the area has its own set of unique public health and health policy issues, requiring cultural sensitivity for appropriate health messaging. Rates of obesity and diabetes in the Valley have reached epidemic proportions, and as one of the southernmost regions of the U.S., tropical infectious diseases are more prevalent. Sharing a border with Mexico necessitates surveillance on both sides of the border, both for diseases such as tuberculosis as well as tracking individuals with illegal substances. Air quality is a concern particularly in colonias, where homes built with lower-quality materials and less maintenance can lead to asthma. Pesticide exposures are common among migrant health workers, yet advocacy for this issue seems to be lacking. Rates of autism and other developmental defects are higher than in other parts of the country, necessitating further research into causation. Thus, the South Texas Environmental Education and Research (STEER) program aims to address these topics as a month-long immersion program in public health with a distinctly environmental and cultural focus.

Approach
Through the STEER program, students met with dozens of established professionals to learn firsthand the topics of their greatest interest, and to engage in dialogue over questions they formulated. Listening to expert
lectures and traveling out in the community during the day, students were able to return for well-informed debates later in the evenings. Students were exposed to techniques such as community-based participatory research in developing culturally relevant health promotional materials, and to training techniques for community health workers such as promotoras. Additionally, students saw potential career paths for the MD/MPH degree.

Findings
After completing the STEER program, students are better equipped to speak with authority and advocate for border healthcare issues. Students learned the importance of working within a culture’s belief system, such as curanderismo, with flexibility and sensitivity, rather than discounting personal beliefs, and observed concrete, evidence-based approaches towards combating the obesity and diabetes epidemic in South Texas. As MD/MPH students in this particular rotation, it is now possible to incorporate time spent in the Valley into both future healthcare and public health work, thus creating a wider circle of influence.

Essential Services of Public Health
Primarily, the STEER program served to inform, educate, and empower people as an essential service of public health. Programs such as the CATCH program and Tu Salud Si Cuenta directly impacted people’s perceptions of healthy lifestyles, and the promotora training informed and empowered those community health workers to in turn inform and empower their neighbors.

Additionally, another service was to diagnose and investigate health problems or hazards. Students learned about zoonoses, tuberculosis, asbestos, chemicals/metals in the home, and pesticides as potential health hazards.

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Public Health Significance
Within public health is an inherent paternalistic quality. A portion of this may be inevitable, but a lesson I have taken away from the STEER program is the ways in which we can learn from and be bettered by those we strive to empower, specifically in the structure of our healthcare system. Our forays south of the border have made a powerful impact on the way in which I hope to one day serve in the medical field, and have offered STEER participants several important lessons from which I hope all American medical practitioners could stand to profit.

Approach
The STEER program gave us on-site visits to a wide variety of public health distribution vehicles. Some of the most unique visits were those to Mexico where we were able to encounter the different aspects of their healthcare system.

Findings
First, the Mexican government, at least on paper, endeavors to provide healthcare to all of its citizens through several provision networks allocated according to employment. Even the unemployed and foreigners are technically covered under this lofty effort. It is commendable for a state with limited resources and a poverty-struck (around 30%) population to even attempt such coverage.

The second significant lesson stemmed from an observation of the subtle yet substantial shift of focus of many of the Mexican physicians we encountered. Many were dually employed: once by a government health agency and once through a private clinic. This increased exposure to health care issues of the community and citizens at large allowed for a breadth of awareness and concerns, and should enable physicians to be better advocates for their patients and communities.
A final culminating observation concerns the natural outgrowth of the previous two attributes. The notion of prevention as not only a medical necessity but a fiscally responsible and ethically imperative characteristic pervaded many of the Mexican healthcare presentations. While presentations do not always mirror reality, I feel strongly that, as has been emphasized so often throughout STEER, prevention is critical and under-utilized in our country, and there is much we can learn about community responsibility and equity from looking not only to our neighbors to the east but to the south.

One quality I hope that I can exhibit and maintain throughout whatever shape my intended career in medicine takes is that of openness to new ideas from unexpected sources, the humility to be changed by such exposure, and a rock-solid dedication to the values of service towards others in any capacity I can. I think that the STEER program has cultivated these qualities in myself and my peers, both through our sundry experiences and enlightening conversations, and I hope that we can each bring this mindset of community-centered preventative medicine back to our schools and the medical community at large.

**Essential Services of Public Health**

The essential services of developing policy plans that support community health efforts and diagnosing and investigating community health problems were both present in STEER.
Topic: South Texas Environmental Education and Research

Title: STEER-Harlingen

By Gina Kim

Public Health Significance
Through the South Texas Environmental Education and Research (STEER) in Harlingen, Texas, I experienced first-hand the harsh reality of the issues regarding border health and the importance of the marriage between Public Health and Medicine. The area along the Texas-Mexican border, which extends along the Rio Grande, is a breeding ground for blended cultures, ideas, and diseases. By understanding the background of the population we are serving, we can improve the care we provide as physicians. In addition, I learned the importance of taking environmental histories when taking the patient’s history of the present illness. Oftentimes, patients can be misdiagnosed or preventative measures overlooked without taking these factors into consideration. These days, it is difficult for clinicians to make home visits, but by asking about what the home and work environment is like, we can offer small changes to improve their condition. Furthermore, promotoras, who are local health advocates, serve as the bridge between clinicians and the local community and are valuable resources when it comes to spreading preventative care.

Approach
The program provided a buffet of speakers, activities, and field trips that exposed the aforementioned areas to us. For example, we took trips to the colonias, which are typically lower income areas, participated in training promotoras on asthma, and listened to lectures ranging from topics on Tuberculosis, Chaga’s Disease, and media intervention in public health. We also had the privilege of being able to discuss public health and medical issues with Dr. Joseph McCormick and Dr. Susan Fisher-Hoch, who inspired and motivated us to take advantage of our dual degree to improve health policy and care.

Findings
Through STEER, I got to see public health and medicine in action, instead of reading about it. It provided a wide variety of issues and topics germane to the region but that can also be translated to other geographic
areas. I struggled a lot with wanting tangible examples of public health, but what I discovered was that public health is everywhere here. It is in the colonias, the promotoras, and other areas. I realized that it is hard to see the definite separation or to pick out the public health part of the medical care, because the two components have melted together so as to become one entity, enabling a synergistic combination to improve health care for the community. For me, the program confirmed my belief that the integration of medicine and public health is both beneficial and imperative.

**Essential Services of Public Health**

STEER focuses to expose its participants on environmental and border health. Border health is an umbrella term to define the diseases, issues, and culture along the United States and Mexico border.

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**Topic: South Texas Environmental Education and Research**

**Title: Bridging the gap in Border Health**

**By Gaby Martínez**

**Public Health Significance**

Texas is one of the border US states with the largest Hispanic population. Some of the poorest counties in the nation are located in the Lower Rio Grande Valley, such as Starr, Hidalgo, and Cameron. It also has the greatest number of colonias in the country, communities that lack basic necessities such as potable water, electricity, and paved roads. In some colonias, their income is no more than $5,000 a year. Texas is #1 in the number of uninsured in the US (more than 30%) and as we analyze the rates in the border counties the numbers increase to even 55%. There is a diabetes and obesity epidemic that is affecting primarily the Hispanic population, both in adults and children. In addition, we are seeing infectious diseases in this area that we thought were prevalent in developing nations, such as dengue and trypanosomiasis. There is also an alarming shortage of health care providers in the border regions and a great need to focus on public health and preventive medicine.

Realizing that there are still developing regions in our own country makes us feel morally obligated and compelled to address them. The majority of the Hispanic population in great need in this area represent those people...
who have built our houses, schools, hospitals (construction workers), who have brought food to our table (farm workers), who clean our houses and even cook for us (maids). In addition, the border is like a semi-permeable membrane and what happens in Mexico definitely has a huge impact in South Texas, such as the increased number of cases of MDR-TB.

**Approach**

We learned during presentations about obesity and diabetes affecting both adults and children in South Texas. We had the opportunity to experience how these issues are being tackled, such as the implementation of the CATCH program in physical education classes and in the classroom in elementary schools. Similarly, the media campaign “Tu Salud Sí Cuenta” that used an extremely effective tool (community based participatory research) represent one of numerous culturally sensitive public health efforts done in the LRGV. Having the experience to witness different ways that these problems are being addressed greatly increased my knowledge and skills to design similar programs in the future.

**Findings**

We gained a greater understanding of specific issues that are unique in the border. We were able to analyze environmental, occupational, social and behavioral health affecting South Texas and creative public health interventions, such as the Promotora training.

**Essential Services of Public Health**

This practicum primarily addressed the following essential services of public health:

1. How to inform, educate, and empower people about their health issues: CATCH, Tu Salud Si Cuenta, Promotoras, environmental house calls, etc.
2. Research for new insights and innovative solutions to health problems: research done on migrant farmworkers health and exposure to pesticides, autism, MDR-TB, indoor air pollution, etc.

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Topic: South Texas Environmental Education and Research

Title: STEERing toward a Better Life on the Border

By Nancy Okechukwu

Public Health Significance
With a population of approximately 12 million spanning a distance of 2000 miles of land, the U.S-Mexico border is bustling with growth and challenges. In particular, the cities of Laredo, TX and Nuevo Laredo, Mexico have experienced immense growth rates over the years. According to the City of Laredo website, between 1960 and 1990, Laredo’s population more than doubled while Nuevo Laredo’s population more than tripled. In fact, Laredo is the second fastest growing city in the U.S. Such rapid increases in population have found the border cities struggling to provide adequate resources to meet their needs. The U.S-Mexico border is suffering from a wide range of medical, environmental and public health concerns. Infectious diseases that are learned about only in textbooks are high causes of morbidity and mortality along the border; high pollution and pesticide levels are causing health problems for a population that has limited access to health care. As migration across the border continues, there is an increasing risk that such diseases will permeate the U.S. causing further strain on the already burdened health care system.

Approach
The South Texas Environmental Education and Research (STEER) program aims to educate future health care and public health providers on the issues plaguing the border and motivate them to integrate what they learn into their practices. STEER provided 160 course hours of a variety of lectures and activities that provided an intense and enlightening introduction into border and environmental health. Lectures on asthma and air quality were supplemented by visiting a family with a child suffering from asthma. We conducted lead, humidity, and air particulate tests and recommended changes that the mother could make to reduce allergens in the home. The issues of access to health were investigated with trips to the local health department, Gateway Community Health Center, and Mercy Ministries. The issues with infectious diseases were investigated with lectures on rabies, dengue fever, and West Nile virus. We
were introduced to environmental health with trips to the Laredo and Nuevo Laredo water treatment plants, Laredo landfill and recycling center, and a water sampling trip to the Rio Grande.

**Findings**
Overall, STEER shed light on the fact that there are exciting changes occurring on the U.S-Mexico border, however, without additional resources, there will continue to be unnecessary struggles. More health care practitioners who are culturally competent and are aware of environmental and public health issues that can affect health are needed. As more students become exposed to border/environmental health through this program, it may help spur an increasing interest on the health issues along the border.

**Essential Services of Public Health**
STEER primarily addressed the essential service of public health to inform and educate. We were taught a great deal about border and environmental issues. Through the education that we received, STEER served another purpose of assuring that we continue to be competent health care providers for our communities.

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**Topic: South Texas Environmental Education and Research**

**Title: STEER Harlingen**

**By Arielle Perez**

**Public Health Significance**
During the STEER program, I was immersed in a variety of public health topics relating to Texas/Mexico border conditions. Within the confines of the US, there are still health problems accompanying well-known issues such as obesity and diabetes, such as dengue, tuberculosis, and chagas disease that many people believe to no longer be an issue in the United States. With its limited resources and manpower, South Texas communities are slowly making progress to address issues of health disparity. The STEER program will expose me to many issues that I would not otherwise be able to learn in a classroom or through a book.
Approach
The program, organized by Dr. Enrique Escobedo and Mrs. Patsy Bortoni, utilized a variety of learning methods. Excursions to various locations provided exposure to first-hand experiences and presentations from experts within the field of various public health programs expose me to aspects of environmental health issues and border health issues that I would never be exposed to within the confines of San Antonio.

Findings
Despite lack of funding and resources, there are many progressive programs in the realm of public health taking place at the border. Tu salud Si cuenta is a media program hoping to educate border communities about proper exercise, nutrition, and health habits. The department of public health is doing its best to track and monitor disease. The promotora program is attempting to make-up for the lack of culturally sensitive healthcare providers in the area. This is not to say that there are no more problems. In fact, there are still many issues that need to be addressed such as understanding the co-morbidity of TB and diabetes, education of environmental exposures, and creation of new ways to tackle health issues, such as the CATCH program has done.

Essential Services of Public Health
According to the Public Health Functions Steering committee, there are many essential services that public health should provide:

• Monitor health status to identify community health problems
• Diagnose and investigate health problems and health hazards in the community
• Inform, educate, and empower people about health issues
• Mobilize community partnerships to identify and solve health problems
• Develop policies and plans that support individual and community health efforts
• Enforce laws and regulations that protect health and ensure safety
• Link people to needed personal health services and assure the provision of health care when otherwise unavailable
• Assure a competent public health and personal health care workforce
• Evaluate effectiveness, accessibility, and quality of personal and population-based health services
• Research for new insights and innovative solutions to health problems

http://www.health.gov/phfunctions/public.htm

The STEER program, through its many varied activities and experiences has been able to expose me to many of the above aspects such as: Dr. Brian Smith at TDSHS explained to us how communicable diseases are monitored in order to ensure the safety of communities. Mrs. Barbara Adams at TDSHS explained how the Hepatitis outbreak at Rudy’s was diagnosed and investigated in Brownsville. In Brownsville, we saw how the CATCH program works to inform, educate, and empower the children about nutrition, exercise, and other health issues. Dr. Belinda Reininger demonstrated how Tu Salud Si Cuenta has utilized community based participatory research to identify and help solve health problems.

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Topic: South Texas Environmental Education and Research

Title: STEER- A First Hand Look at Border Health Issues

By J. Raul Soto

Public Health Significance
The Texas/Mexico border presents unique issues not encountered in other areas of the United States. A large number of individuals cross the borders into and out of the United States daily. Along with this mass movement of people there is also the potential for disease such as tuberculosis, cholera, or even leprosy to move across the border. In order to protect the health of people in the United States these diseases must be intercepted before they make their way further north. In addition, Texas currently has the highest percentage of uninsured people in the United States, many of which live in areas close to the Texas/Mexico border. This region lacks an adequate number of healthcare personnel and infrastructure to care for the ill. In Laredo, for example, there are two hospitals that are both privately owned. As a consequence, there is a significant portion of the population, especially the poor, who lack access
to healthcare. This threatens people’s health in the region and reduces our ability to prevent disease from spreading.

**Approach**
The South Texas Environmental Education and Research (STEER) program introduces students from various backgrounds to border and environmental health issues. This is accomplished through a combination of hands-on site activities and lectures that take place over a period of four weeks. Some of the activities include touring the Laredo and Nuevo Laredo Health Department, water and sewage treatment plants, Laredo’s landfill and recycling center, Gateway Community Health Center, Merci Ministries, Colonias, Rio Grande water sampling, restaurant food sanitation inspection, “promotora” training, and many others. There are also educational lectures on asthma and common environmental triggers, curanderismo and herbal medicine, customs and border patrol issues, and several others.

**Findings**
The STEER program seeks to provide students with a better understanding about issues that affect public health in general but also more specifically at the border. Rather than obtaining information about the border through the news or other possibly bias sources, STEER students have the opportunity to see and hear firsthand about the public health issues that are important in this region. The program does an excellent job at accomplishing these goals as well as providing public health students with knowledge they will use in their future careers.

**Essential Services of Public Health**
STEER addresses several of the essential services of public health. One is to educate and inform individuals including students and “promotoras” about health related issues. By providing this education people are able to take responsibility for their own wellbeing. In addition, through the hands-on experiences and lectures covering environmental and border health issues, STEER contributes to the overall goal of ensuring a competent public health workforce.
Background
An opportunity arose at the Senate Committee on Health and Human Services at the Texas state capitol, and I completed my practicum by working as a full-time researcher in their office. During the interim between legislative sessions, the committee is responsible for researching possible legislation on behalf of the committee chair and examining and reporting on specific charges given to the committee by the Lieutenant Governor. In working with the committee, I was heavily involved in two public health related projects. The initial project involved researching issues in the home health care and nursing home markets and writing an interim report based on the findings. The second project consisted of researching politically feasible options to increase health insurance coverage in the state, with the ultimate goal of drafting legislation for the committee chair to carry in the next legislative session.

Public Health Significance
The two projects that I assisted with have important public health significance in the areas of policy and the healthcare delivery system. With the interim report on home health care and nursing home care, the goals were to research and report solutions that could protect patients and improve system efficiency.

With the insurance project, we were attempting to find practical state policy options to combat the high rates of Texans who either have no insurance or are underinsured. While this project is state-focused, often states will copy policies from each other once they have shown a measure of success, and it was a goal of this project to develop some innovative policies that other states may also be able to adopt.

Approach
We sought to achieve the goals of the interim report by identifying best practices in both public and private delivery systems that could be adopted
in Texas, researching the feasibility of workforce background checks, and understanding how Medicare demonstration projects could impact Texas agencies.

For the insurance project, we met with various stakeholder groups, corresponded with the committee chair, researched the current issues in Texas, and researched options that have worked in other states.

Findings
With the home health care and nursing home care research, the final product is a written interim report that will be forwarded to the lieutenant Governor’s office, posted on the committee website, and used as reference material throughout the year.

We found with the insurance project that quite a few solutions exist that could be explored as policy options for the next legislative session. While more specific research and fiscal analysis remains to be completed, the most promising proposals include a public reinsurance system, lowering rates in the state high risk pool through the use of carrier prompt payment penalties, and tighter regulation of the market by the Texas Department of Insurance.

Essential Services of Public Health
The nursing home and home health project primarily addressed the need to assure a competent public and personal health care workforce.

The insurance project primarily addressed the need to develop policies and plans that support individual and community health efforts.

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Topic: T-cell Acute Lymphoblastic Leukemia

Title: Expression of T-ALL Transcription Factors in Turkish Population

By Elizabeth A. Rourke

Public Health Significance
T-cell acute lymphoblastic leukemia is an extremely rare cancer that affects children and adults. Currently, T-ALL prognoses are often not very promising and patients are likely to relapse within the first year. With these characteristics in mind, assessing prognostic factors and novel therapeutic targets has become the goal of scientists, epidemiologists and doctors all around the world. Defining expression patterns that relate to the stages of T-ALL and clinical conditions can be used to prevent and treat the disease more aggressively. These types of studies provide insight into the mechanisms that dictate the initiation and development of T-ALL and are essential in fighting the disease incidence. The study conducted in the genetics department of Istanbul University studied the expression (under and over-expression) of oncogenic transcription factors in order to determine whether or not these factors influenced disease onset, relapse and outcome.

Approach
This was an ongoing study at Istanbul University that has stemmed several new studies. The methods used were DNA isolation and real-time PCR analysis of transcription factor expressions. The transcription factors were selected based on previous studies and contributions as well as their role in normal thymic cells development and hematopoiesis (forming of blood cellular components). The data collected was analyzed using logistic regression and Kaplan-Meier survival curves. I was involved in all steps of this process from learning DNA isolation methods and real-time techniques to analyzing the data using STATA 10 and SPSS 10 software.

Findings
We were able to define specific transcription factors and their expression as a direct correlate to disease prognosis and outcome. However, the number of participants was extremely low, 39, thus making it necessary for the results to be verified by another, larger study. In addition, the clinical
data collected was not consistent for all patients and therefore, extremely pertinent data was not available and patients had to be excluded. The study does illustrate that specific transcription factors should be closely studied in order to determine which ones are responsible for the prognosis and outcome of the disease, T-ALL.

**Essential Services of Public Health**

Research was the primary essential service of public health. The goal of the study was to define a health problem and find a new solution to this problem, in terms of prognostic factors and therapeutic targets for T-ALL. This research was more laboratory-based and allowed me the opportunity to see how a genetic study is conceived, developed and conducted.

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**Topic: Terrorist Attack Preparation**

**Title: Expression of T-ALL Transcription Factors in Turkish Population**

**By Anita Winkler**

The unprecedented attacks of September 11, 2001, and the subsequent anthrax-related events thrust our nation’s often forgotten public health system into the forefront of public attention. A strong public health system with a well-prepared workforce plays a critical role in preparing for and responding to the threat of bioterrorism and other disasters and emergencies. Technical expertise is critical as is a basic awareness and understanding of core public health competencies especially as they relate to disaster and emergency response is also imperative for a public health agency to function as a vital Emergency Response team member. Ideally this training should begin at the Public Health graduate level so as to provide the baseline core tools to be able to function as a vital team member when they are practicing out in the real world. Online learning is an efficient and effective method for providing public health education in a flexible format to meet the needs of busy student-professions. This Public Health Disaster Preparedness online course developed during an Emergency Response state program practicum is a practical and proficient approach to accomplish this endeavor.

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Topic: USP 797 Pharmaceutical Compounding

Title: An Evaluation Of Bioaerosol Sampling In Clean Rooms To Determine Optimum Sampling Volume In Accordance To USP 797 Pharmaceutical Compounding For Sterile Preparations Guidelines

By Tina Henderson

Public Health Significance
USP 797 was developed to establish guidelines to prevent harm and fatality to patients that could result from microbial contamination (non-sterility), excessive bacterial endotoxins, large content errors in the strength of ingredients, and incorrect ingredients in compounded sterile preparations. USP 797 was amended and states that a sufficient volume of air ranging from 400 to 1000 liters shall be tested at each location in order to maximize sensitivity. Environmental Health and Safety (EHS) at MD Anderson Cancer Center needs a plan that complies with USP 797, provides standard sampling procedures and schedules, and to assesses the adequacy of the sterile compounding environment.

Scope
The sampling procedure will apply to all areas where sterile compounding is conducted as outlined by USP 797 and MD Anderson pharmacy personnel.

Approach
The Occupational Health and Safety group of EHS has been collecting bioaerosol samples in clean rooms on a monthly basis since 2005 starting with the collection of 150 liters of air. After the amendment, the group increased the volume to 1050 liters by combining three bioaerosol samples. The goal of the practicum was to evaluate the data and determine if there was any significance between Plate C (450 L), Plate A + Plate B (600 L) and Plate A + Plate B + Plate C (1050 L) samples based on the number of colony forming units.

There were a total of 407 complete data entries acceptable for analysis.
Findings
Descriptive analysis was used to determine the means of each sample volume. A t-test of the sample means was used to determine a p value.

The t-test for Plate C and Plate A + Plate B had a p value of 0.001 which is highly significant.

The t-test for Plate C and Plate A + Plate B + Plate C had a p value of <0.001, which is very highly significant.

Based on the findings, OHS concluded that a sample volume between 600 liters and 1000 liters will provide an optimal sampling volume.

Essential Services of Public Health
Developing policies and plans was the essential services that my practicum addressed.

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Topic: Veteran’s Health Care

Title: Nationalized Electronic Medical Records system – A Closer Look From A Clinician’s Perspective

By Eddie Wang

Public Health Significance
Electronic Medical Records are slowly being implemented by numerous large scale hospitals in the recent years. With more and more clinics incorporating EMRs, there is the question of how communicable one system is to another system, since there are different programs in the market.

EMR was proposed to save time, decrease errors, improve patient care, and save costs from unnecessary repeated work. Working at the Tuscaloosa Veterans Affair Medical Center in Alabama provided the opportunity to have a hands-on experience of the only nationalized EMR system. This allowed for more insight to the EMR’s capabilities in preventive care, follow-up care, quality control, error prevention, and cost savings. As a bonus, this opportunity also allowed for my personal
impression of the pros and cons of nationalized EMR from the provider point of view.

**Approach**

Working for the Veterans Affair (Government) Medical Center is a first for me. Disclosing my candidacy in MPH at UT Houston prompted my assignment to aid the VA’s quality control at Tuscaloosa, in addition to my clinic obligations. The VA provides veterans, both currently serving and discharged. With the involvement in the Middle East, returning Iraqi vets were recommended to complete screening for Post Traumatic Stress Disorder (PTSD) and Traumatic Brain Injury (TBI). In addition to the screenings, VA also provides primary care and specialty care with services including cardiology, pulmonology, surgery, and etc. Since vets receive these services without cost to them, it was necessary to tabulate the efficacy of the services and report to the main VAMC board for evaluations and allocation of future funds for improvements. My primary involvement is in the Primary Care Clinic setting. Below are tables of the monthly data analysis of Tuscaloosa VAMC from April to July. The data are collected through tags that are built into the VA’s electronic medical records system. Upon patient encounter, encounter reminders flash within the main patient page, which would prompt providers to address the reminders. Each subcategory has a target goal, and monthly progress are compared and discussed at the end of every month for reflections and suggestions of improvement.

**Findings**

<table>
<thead>
<tr>
<th>Diabetic Measures</th>
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<tbody>
<tr>
<td></td>
<td>A1c Annual Target</td>
<td>A1c&gt;9 Target</td>
<td>LDL &lt;100 Target</td>
<td>BP &lt;140/90 Target</td>
<td>Renal Testing Target</td>
<td>Eye Exam Target</td>
<td>LDL Measured Target</td>
<td>A1c &lt;7 SI Target</td>
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### Cancer Screening

<table>
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<tr>
<th></th>
<th>Breast Cancer 50-69 Target 85%</th>
<th>Cervical Cancer 21-64 Target 90%</th>
<th>Colon Cancer 50-80 Target 79%</th>
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<td>74%</td>
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<td>June</td>
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<tr>
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### Cardiovascular

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<tr>
<th></th>
<th>AMI LDL C&lt;100 Target 66%</th>
<th>AMI LDL Measured Target 95%</th>
<th>BP 140/90 Target 75%</th>
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<td>41%</td>
<td>100%</td>
<td>83%</td>
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<td>June</td>
<td>64%</td>
<td>96%</td>
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<tr>
<td>July</td>
<td>68%</td>
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### Tobacco Measures

<table>
<thead>
<tr>
<th></th>
<th>Tobacco Counseling Target TBA</th>
<th>Tobacco Cessation Meds Target 73%</th>
<th>Referral for Sm Cess Target 93%</th>
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<tr>
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<td>90%</td>
<td>62%</td>
<td>62%</td>
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<tr>
<td>May</td>
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<td>49%</td>
<td>49%</td>
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<tr>
<td>June</td>
<td>83%</td>
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<tr>
<td>July</td>
<td>89%</td>
<td>57%</td>
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### Immunization

<table>
<thead>
<tr>
<th></th>
<th>Influenza Vacc. 65 or &gt; Target 83%</th>
<th>Influenza Vacc 50-60 Target 66%</th>
<th>Penum.&gt;65 Target 94%</th>
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<td>86%</td>
<td>76%</td>
<td>93%</td>
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<td>82%</td>
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<tr>
<td>June</td>
<td>84%</td>
<td>69%</td>
<td>92%</td>
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<tr>
<td>July</td>
<td>85%</td>
<td>68%</td>
<td>94%</td>
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The following tables and graphs depict parts of the “Patient Satisfaction” measures. These include clinic appointment time for new and established patients and missed opportunities (no shows). As indexed, the tables and graphs are for the different departments under the Primary Care Clinic.
Personal impressions
The VA is very organized in terms of structure; each staff member is
assigned certain tasks that are very clearly described in the employment
agreement. With the implementation of electronic records system, patients
who travel from one VA to another VA can be quickly tracked.
Medications, imaging studies, labs, etc are all available and accessible in
minutes through their VistaWeb server. All labs and images were done
“in-house”, so the possibility of losing results is eliminated. The ability to
tract medication distribution allows the review of medication misuse or
abuse. The use of EMR allowed easier reviews for generation of the above
charts; however, the EMR also has inconveniences.

The EMR with the encounter tags are cumbersome to run through with
patients. Time is a major factor. A patient is allowed 30 minutes for
encounter, yet to completely fulfill the encounter tags; about 40 minutes
were needed per patient. In addition to the tags, patient complaints and

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<th>Benchmark</th>
<th>Performance Clinics</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
<th>Jan</th>
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</tr>
</thead>
<tbody>
<tr>
<td>7% AUDIOLOGY</td>
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treatment plans were keyed in similar to what a court clerk would do in a court hearing. Since most of the time was spent on typing and tinkering with the computer, rapport with the patients suffers; poor eye contact, limited time to delve into patient family events such as support system evaluation of the patient’s family dynamics, etc.

The performance measures conducted were based strictly on the encounter tags that were built in the encounter form. Therefore, if the provider did not click on the tags, it would be considered as though the provider did not address the screenings. I found this quite inaccurate. Many providers mentioned the screening questions in their typed notes, and these should also have been credited and counted toward their performances.

However, 4 months with the VA spoiled me with the accessibility of patient information even if they were from Oregon or Maine. This feature of the EMR would benefit patient care and avoid many unnecessary repeated tests and inquiries. Although the performance measures need more adjusting to capture missed credits that were in the notes, overall, VA’s incorporation of EMR and nationalizing it provides an excellent model for other major hospitals. Nationalizing and standardizing EMR, in the long run, would save cost from unnecessary repeated work ups in patients and provide a more efficient patient care.

**Essential Services of Public Health**

The numerous number of available EMR systems are currently unable to inter-communicate. As mentioned, this could lead to extra expenditure on unnecessary repeated workups. A more detailed comparison needs to be done in measuring the efficacies of the available EMRs. My practicum experience offers a personal insight from the provider’s point of view, a perspective that is different from non-clinicians.
Topic: Vietnam’s National Tuberculosis Program

Title: Public Health Services and Research in Vietnam: An Outside Perspective

By Colin Malone

Public Health Significance
Vietnam’s massive growth must be followed by growth in the public health sector, and by better understanding public health programs in Vietnam, and understanding how to do research on and within them, outsiders such as myself can make a positive impact on public health in the country. Vietnam’s national tuberculosis program (NTP) is the example I study. Vietnam has made great strides in developing a program to combat TB, but the differences between Vietnam’s program on paper and in reality are numerous, and must be seen firsthand in order to get a better grasp on the issues facing Vietnam. By seeing the NTP from the outside, as part of the International Organization for Migration (IOM), I was able to note problems with Vietnam’s programs in contrast with the IOM’s CDC certified program. By seeing it from the inside, at the regional TB reference laboratory inside Pham Ngoc Thach TB and Lung Disease Hospital (PNT), I was able to better understand the NTP and to see firsthand how Vietnam use its resources in TB control. Also, since I was doing research at the hospital, I became aware of the challenges faced by Westerners trying to do research in the country. Cultural differences and dealings with a bureaucracy can be difficult in any country, but specific challenges in Vietnam must be identified in order to streamline relations and facilitate research.

Approach
I conducted interviews with IOM staff about their experiences with the Vietnamese public health system, and the differences between the standard of tuberculosis care that host nations require them to achieve (the same requirements recommended by WHO) and what is actually being implemented by Vietnam. I observed TB diagnosis, treatment, and cure certification procedures at the IOM. At PNT I conducted interviews to ask about TB treatment and diagnosis, and observed lab procedures. I also conducted retrospective data collection of laboratory records that will
be analyzed to determine the prevalence and characteristics of MDR-TB at PNT.

**Findings**
I will make a practicum report on my findings about the NTP and researching, and a thesis on the results of my research. The NTP is limited from achieving its TB prevention goals, but strong government commitment, as well as the dedication and skill of persons working within the NTP, is helping the country to continue to make strides. Lack of resources is a major problem, which is something that most developing countries must face. However, TB treatment is not as in-line with WHO guidelines as the literature would indicate, and wherever this misrepresentation occurs, it is surely not helpful to TB control. I also found that although stifling bureaucracy and government control must be overcome to do research, through strong contacts, collaboration, and in-person meetings and reassurances with key persons, excellent collaborative research can be done in Vietnam.

**Essential Services of Public Health**
My agencies prevent epidemics and the spread of disease, and assure the quality and accessibility of health services.

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**Topic: Workforce Development**

**Title: Workforce Development at Texas Department of State Health Services**

**By Emily Herrington**

**Public Health Significance**
The Center for Program Coordination and Policy Innovation (CPCPI) facilitates program function and recommends policy change. One of current projects of CPCPI aims to conceptualize opportunities for workforce development at DSHS. CPCPI explored DSHS linkages with institutions of higher education, which include adjunct faculty positions, preceptor roles, research collaborations, or consultation. In addition, CPCPI began developing a speaker series the specific objective of providing educational opportunities that support DSHS workforce development.
Approach
In order to investigate linkages to higher education, two independent projects were conducted, one for linkages to schools of public health and one for linkages in the Texas-Mexico border region. For the linkages to schools of public health three focus groups were held during May 2008. The participants were DSHS employees with an association with a school of public health. A moderator asked questions to guide an open discussion and scribes recorded participant comments. Similarly, the border linkages project engaged DSHS employees, who either work in the border or work on border health issues. For the purposes of this project the border region was defined as the geographical area 100 kilometers on either side of the Texas-Mexico border. Personal interviews were conducted via telephone and the interviewer used a set of standardized questions and recorded comments by hand (response rate=56%). Four major subject areas were discussed in the focus groups and interviews including strengths and weaknesses, opportunities and challenges to linkages.

The Grand Rounds Series is a speaker series conceptualized by CPCPI in the summer of 2008. The objective of the series is to provide opportunities for DSHS to strengthen competencies. The thirteen-week series of weekly presentations are scheduled for the fall of 2008 and will be given at the Austin campus of DSHS. The curriculum was designed to demonstrate the connection between research and practice. The target audience includes practitioners, program coordinators, and researchers, whose work will benefit from an evidence-based perspective. In addition, continuing education credits will be offered to those who are seeking certification.

Findings
Emerging themes and recommendations for potential change were developed into reports. The emerging themes for both linkage projects include a desire to strengthen the internship programs at DSHS, to increase opportunities for enhancing workforce competency, to provide more support for data sharing processes, and to strengthen collaborative work with universities. A few challenges unique to the border region were large distances between DSHS regional offices and partnering universities and difficulty growing internship and collaborative projects due to workforce shortages.
In combination these projects facilitate the development of the public health workforce by enhancing public health knowledge and skills.

**Essential Services of Public Health**
The Texas Department of State Health Services (DSHS) provides health care and public health services to the citizens of Texas. With the degree of influence the agency has on the public health system in Texan, it is essential that DSHS maintain a competent workforce, one of the twelve ethical principles of the public health code of ethics (Public Health Leadership Society, 2002).

**References**

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