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Editorial Note: This year as part of our celebration of National Public Health Week “Building a Foundation for a Healthy America”, we are once again highlighting the work done by students of public health in Texas institutions as part of their required practicum experiences. The summaries below represent a small sample of the projects done by students at the University of Texas School of Public Health and the University of North Texas Health Science Center School of Public Health in Fall ’07 and Spring and Summer ’08 academic sessions. Students worked under the guidance of senior faculty sponsors and side by side with community preceptors in state and local public health departments, hospitals, and not-for-profit organizations.

These summaries illustrate: the variety of real world public health problems tackled by the students; the diversity of settings in which public health practice and research occurs; the quality of practicum results. Despite the dissimilar settings and problems approached, an underlying motive animates all -- a deep commitment to using science in improving the health of populations.

The Editorial Board of the Texas Public Health Journal would like to extend its congratulations to the students represented here and to the faculty and community preceptors who made these rich experiences possible. For more information on becoming a preceptor, contact your local School of Public Health campus.

The University of Texas Health Science Center School of Public Health Campuses

Topic: Childhood Cancer Care in Africa
Title: Development of Education & Training Tools for Childhood Cancer Care in Africa
By Parth Mehta
Faculty Sponsor: Luisa Franzini, PhD
Community Preceptor: Elizabeth Lowenthal, MD, Botswana-Baylor Clinical Center of Excellence, BPAI-Pediatrics

The care of children with cancer in Africa is a significant public health issue for two major reasons. The first is that as infectious diseases come under control, the disease burden and mortality from chronic diseases increases. In the pediatric population this is generally due to chronic respiratory diseases and cancer. The second reason is that there are 3.5 million children with HIV infection in sub-Saharan Africa. As these children get started on anti-retroviral therapy, they are living longer but experience shows that their risk of cancer does not vanish. Indeed, in Romania where the prevalence of HIV infection in children was 75% in the late 1990’s, the deaths they have seen in the Baylor Center have all been due to cancer.

Approach
The approach used to address this issue has been two-fold. The first imperative was a proper needs assessment of the centers treating childhood cancer and children with HIV infection. To accomplish this, the two major referral centers in Botswana were visited regularly, Nyangabwe Referral Hospital (NRH) and Princess Marina Hospital (PMH). After initial visits to NRH, contact was maintained via phone and e-mail, as it is located 430 kilometers away from the primary center where I work at PMH.

The needs assessment focused on what is considered the standard of care at the largest children’s cancer center in the US, the Texas Children’s Cancer Center at Texas Children’s Hospital, as the basis of comparison. This was chosen because I am and have been employed there for the last 4 years and access to the elements of comprehensive cancer care in the resource-rich setting was easily accessible through this avenue. In particular, attention was given to the level of expertise of professionals involved in cancer care. The other focus was assessment of resources needed to administer high quality cancer care in this setting, including medications, laboratory needs, and chemotherapy protocols.

The elements of comprehensive childhood cancer care were then applied to identify the deficiencies in the settings of NRH and PMH with particular focus on the training and educational level of the nurses and doctors as well as a comprehensive assessment of medication availability, laboratory studies available, and chemotherapy protocols used.

Findings
The assessment revealed significant deficiencies in adequate education and skill sets in professionals to handle this challenge. Furthermore, it was revealed that resources in Botswana are adequate to make an impact on the problem, although not ideal. As a result, the focus was on the development of a curriculum to educate and train professionals. A full curriculum consisting of 21 lectures on diseases, chemotherapy, supportive and palliative care was developed. Chemotherapy protocols relevant to this setting are also in development. Finally, a strategic plan to address these obstacles was presented to the BPAI Network during a plenary session at the semi-annual Network meeting.

Essential Services of Public Health
The essential services addressed by this project are assessment and education.

Topic: Circumcision and Sexually Transmitted Diseases
Title: Circumcision as a protective factor for gonorrhea and Chlamydia among incarcerated youth
By Lokesh Shahani
Faculty Sponsor: Jan Risser, M.H., PhD
Community Preceptor: William Risser, MD, PhD, Harris County Juvenile Detention Center-Medical Dept.

According to the CDC Chlamydia and gonorrhea are the top two most frequently reported bacterial sexually transmitted infections (STI’s) in the United States. These STI’s have TPHA Journal Volume 61, Issue 2
more prevalence in the young adults and teen-agers. (2) Even in this age group the STI rates do not appear to be uniform. The youths in a detention facility such as the Juvenile detention centers have a relatively higher STI rate. (3) Several studies have been conducted to compare the presence of foreskin and the risk of urethritis especially gonococcal and non-gonococcal urethritis especially chlamydial urethritis in the US population. For gonorrhea some studies have reported significant association with lack of circumcision (4,5) and few of them have reported no association. (6,7) Similarly for Chlamydia there have been studies with conflicting association with circumcision status and risk of Chlamydia. (4-7) The aim of this study would be to determine if the circumcision status has any protective effect with respect to the risk of gonococcal and Chlamydia infection among the incarcerated youths in a juvenile detention facility.

Methods
A cross-sectional study was conducted at Harris County (Houston, Texas) Juvenile detention center that serves a population of approximately 3.6 million. For the period of 2006-2007 during health assessments after their arrest, detainees received a health history, physical examination, and first-catch urine screening for chlamydia and gonorrhea (evaluated by the Gen-Probe Pace 2C and Pace 2 Assays). The clinicians noted whether the detainees were circumcised. Those whose glans penis was partially covered with foreskin were excluded. A positive urine screening was considered as a marker for infection with gonorrhea and Chlamydia.

This research was approved by the University of Texas-Houston Committee for the Protection of Human Subjects and by the administration of the Harris County Juvenile Detention Center.

Results

<table>
<thead>
<tr>
<th>Circumcision Status</th>
<th>Infected</th>
<th>Uninfected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>32</td>
<td>257</td>
</tr>
<tr>
<td>No</td>
<td>39</td>
<td>206</td>
</tr>
</tbody>
</table>

534 detainees were screened with respect to their circumcision status. 289 of them were circumcised. When the urine test were done on all of them 71 of the subjects tested positive for gonorrhea and Chlamydia and 39 of them were exposed i.e. not circumcised.

A chi-square test was done and the relative risk of acquiring an infection was 1.44 among the uncircumcised subjects. The 95% confidence interval was 0.93-2.22 with a p value of 0.10.

Discussion
The risk of acquiring gonorrhea or Chlamydia infection among the uncircumcised detainees was 1.44. The 95% confidence interval was 0.93 - 2.22. The results show that there is an association but it is not significant.

Our finding is a reflection of the findings from other similar studies where a statistically significant positive association has been discovered between gonorrhea and lack of circumcision. (4,5) The possible explanation for the increased incidence of bacterial STIs among uncircumcised male could be that the warm, moist area under the foreskin could provide the organisms a suitable location to replicate. Also the presence of the foreskin causes increase micro-abrasions during intercourse which might facilitate the entry of these microorganisms. Further the inner surface of the foreskin and frenulum might provide a portal of entry for these microorganisms. Also the epithelium of the glans of uncircumcised men might be thinner than the circumcised men which would provide less physical barrier to the microbes. Lastly the non specific balanitis which is more common in uncircumcised men may predispose to certain STI's. (4,8)

There was a study which showed that being uncircumcised was protective for acquiring chlamydial urethritis. (6) Our findings contradict this finding by showing a positive association between the infection and lack of circumcision.

Our study primarily focuses on the detainees in the Juvenile detention center and is not a representation of the general population. There could be an over representation of indigent and population with a lower education level. The study did not differentiate between partially or fully circumcised males and the protection offered by the extent of circumcision could vary which could affect our results. As all our participants belong to a lower age group the extent of sexual behavior could be low, which could dilute the results. If these patients were followed for a longer time perhaps a more protective effect would have been noticed. A prospective cohort study could be proposed to test for this protective effect.

Essential Services for Public Health
Gonorrhea and Chlamydia are so prevalent in this age group and if there is sufficient evidence regarding circumcision having a protective effect, certain recommendations could be made. Routine neonatal circumcision could be one option which could be proposed.

References

**Topic: Educating Stakeholders on Preventable Hospitalization Conditions**

**Title: Practical Exposure to the Department of State Health Services**

By Taylor L. Hartley

Faculty Sponsor: Frank Moore, PhD

Community Preceptor: Rick Danko, DrPH, Texas Department of State Health Services-Centers for Program Coordination, Policy & Innovation

I completed my practicum at the Texas Department of State Health Services (DSHS) in the Center for Program Coordination, Policy, and Innovation (CPCPI) under Rick Danko, DrPH. As the name implies, the CPCPI coordinates efforts between the various branches of DSHS, including the Divisions for Family and Community Health Services, Regional and Local Health Services, and Prevention and Preparedness Services. Our project was to provide user-friendly information to community health stakeholders on counties significantly impacted by potentially preventable hospitalizations. This template for this project was from the federal Agency for Healthcare Research and Quality (AHRQ) prevention quality indicators. These indicators are used with hospital discharge data to identify conditions for which improved outpatient care—access to outpatient care—may reduce future hospitalizations. My role, as an internal medicine physician, was to provide insight on the preventable hospitalization conditions from a healthcare provider’s perspective and to identify clinical “best practice” guidelines from prominent national organizations (e.g., the National Heart, Lung, and Blood Institute) on the prevention and management of these medical conditions.

**Public Health Significance**

Even after adjustment for population characteristics such as age and ethnicity, many counties in Texas have much higher than expected numbers of admissions for conditions that the AHRQ labels as potentially preventable. Providing communities with this information may facilitate the funding and development of improved outpatient clinical services, which may prevent unnecessary hospitalizations and reduce overall healthcare expenditures—since outpatient treatment of a medical condition is generally much less expensive than inpatient treatment.

**Approach**

We applied the AHRQ indicators for 14 adult medical conditions to Texas hospital discharge data from 2003 and 2005 in order to obtain information on actual versus expected admissions as well as the charges associated with these admissions. The admissions and charges were divided into categories of “avoided” and “excess.” This information was then broken down by county. In the summer 2008, this analysis will be made publicly available on the Texas DSHS website.

**Findings**

Using bacterial pneumonia as an example (one of 14 adult preventable hospitalization diagnoses), it is a potentially preventable hospital admission condition based on the idea that the state could achieve more widespread use of the pneumococcal polysaccharide vaccine and/or provide more affordable access to clinics where pneumonia could be diagnosed at an early stage and treated with outpatient antibiotics. In 2005, the state of Texas had 58,061 actual admissions for bacterial pneumonia; based on population characteristics and national trends, we would have expected 59,402. Thus Texas “avoided” 1,341 admissions for bacterial pneumonia in 2005, with associated charges “avoided” of over $32 million. On the other hand, Jefferson County in East Texas had 1,045 admissions for bacterial pneumonia in 2005; we would have expected 836. Thus Jefferson County had 209 “excess” admissions for bacterial pneumonia in 2005, with associated “excess” charges of over $5 million.

**Essential Services of Public Health**

This project focuses on evaluating the effectiveness, accessibility and quality of population-based health services and seeks to inform, educate, and empower the people.

**Topic: Environmentally Sensitive Purchasing**

**Title: Environmentally Sensitive Purchasing Decisions Project**

By John H. Gamble

Faculty Sponsor: Lawrence Whitehead, PhD

Community Preceptor: Matthew Berkheiser, BS, UTMDA-Environmental Health & Safety

MD Anderson Cancer Center is a major purchaser of goods and services in the Texas Medical Center. Purchases occur at every level of the organization. Many of the purchased products have a significant environmental impact on the total cost of ownership. Understanding what these lifecycle costs are for the major product lines is an important step in altering procurement behaviors and practices. This project is an important public health concern, because the consumption of goods and services from depleting natural resources is being done at an unsustainable rate on a worldwide basis. MD Anderson Cancer Center can identify strategies for managing products and services that deplete non-renewable and renewable resources within its span of control. Management supports this initiative and has contributed to its growth beyond the original scope of work.

**Approach**

A preliminary scope of work was prepared. This investigator met with Supply Chain and Capital Planning management to
secure their support and finalize the scope of work. A post consumer recycle content assessment was undertaken for Capital Planning and Management. Out of this facet of the project, a best values attributes toolset was created. This toolset provides Capital Planning and Management a qualitative process for assessing environmental impacts of each product or service under review. They integrated this toolset into their building materials, furnishings and wall coverings lifecycle product assessment matrix.

A series of supply chain questions were prepared and presented to the Director, Supply Chain Services. Approval was granted to send this survey to 10 major suppliers. Seven responded to date. The results were summarized and presented to the Supply Chain staff. It was proposed that a senior management sponsor be secured and a task force formed to develop environmental criteria that the Supply Chain staff could employ in assessing the overall attributes of products and services. Education tools were developed to push the environmental responsible message out to management and the staff. An environmentally responsible purchasing policy draft was prepared and submitted to supply chain management for review. Work is underway on expanding the sustainability sections of the Environmental Health and Safety Design and Construction Standards. A campus-wide sustainability plan is also under development.

Findings
The outcome of this project includes:

- Survey responses that provide an opportunity for MD Anderson Cancer Center to purchase a wide variety of environmentally sensitive products and services at a competitive cost.
- A methodology for integrating environmental impact criteria into the life cycle assessments Capital Planning and Management and Supply Chain Services undertake for their respective procurement areas.
- A sustainability scoreboard to assess implementation progress on reduction, reuse and recycle programs.
- A series of PowerPoint presentations for delivery to supply chain management, management teams and employees throughout the institution.
- A draft institutional policy and supporting documents on environmentally responsible purchasing practices.

Essential Services for Public Health
The essential services of public health this project covered include:
- Diagnose and investigate
- Inform, educate and empower
- Develop policies and plans

Trauma is the number one cause of death in the United States for adults under the age of 45 years and children over the age of 1 year old. As injury mortality rates steadily rise (as they have been since 1992), it is extremely unlikely that trauma will be abdicating its reign as the number one killer in these age groups any time soon. Even in the developing world, trauma is rapidly becoming a major killer of young adults, now following only infectious disease as the leading cause of death in low- and middle-income countries. Trauma continues to be a major public health issue both domestically and abroad, and enormous amounts of money and resources are used in the management of severely injured trauma patients each year. Due to part to difficulties obtaining informed consent in severely injured patients, little recent research has been done on the best ways to treat trauma patients in the early stages of their resuscitation. Clinical trials in trauma resuscitation are essential if we are going to develop better ways to reduce mortality and suffering from this major public health problem. The purpose of this project was to design and implement a prospective, randomized clinical trial of two different resuscitation strategies for severely injured trauma patients.

Approach
After going through a lengthy process to satisfy the FDA’s requirements for waiver of consent for emergency research, permission was granted by the Baylor IRB to proceed with patient enrollment at Ben Taub Hospital, a level-I trauma center in Houston, TX. Cooperation from all involved health care personnel including the ER staff, surgery team, anesthesiology team and ICU staff was essential, and each of these groups were approached for their support in carrying out the project. Patients who met inclusion/exclusion criteria were enrolled upon admission by the on-call surgery team and randomized to one of two different resuscitation strategies. That particular resuscitation strategy was then carried out by the on-call anesthesia team. Clinical and laboratory data were then collected from the pre-operative, intra-operative and post-operative records, and patients were followed for 30 days for death or complications.

Findings
We successfully designed a clinical trial involving severely injured trauma patients in an emergency setting, adhering to all federal and local requirements for waiver of consent. We were also able to successfully implement this study in a busy clinical setting, obtaining the crucial support of a multidisciplinary trauma team. A total of 42 patients were enrolled during the course of this project. As per the protocol’s design, interim data analysis of outcomes will be performed when patient accrual reaches 45 patients.

Essential Services of Public Health
This project primarily addresses the service of “research for new insights and innovative solutions to health problems,” as described in the CDC’s “Essential Public Health Services.”
Cancer of the esophagus is an aggressive disease which is associated with extremely poor prognosis with an estimated 16,470 new cases being diagnosed this year and 14,280 death occurring.1 During the past 20 years there has been a dramatic increase in obesity in the United States and this trend has also been observed in patients with esophageal cancer undergoing chemoradiation and surgery. It has been previously demonstrated that surgery is more complex and surgical complications are more prevalent in overweight patients. This increased risk has only partially been accounted for by increases in cardiorespiratory morbidity and mortality following surgery which is seen in obese patients, with a major portion of this risk being unexplained. Obesity has shown links with numerous cancers including breast, colon and stomach. We wanted to examine the relationship between body mass index, which is used as a measure of obesity and long term survival after chemoradiation and surgery in patients with carcinoma of the esophagus.

Approach
Initially a review was done to assess the existing literature that evaluated the relationship between body mass indices and survival following treatment for esophageal cancer. This relationship was examined by very few studies done in the United States. We created a database of patients with esophageal cancer diagnosed between the years 1997 and 2006 at the University of Texas M.D Anderson Cancer Center patients. Informed consent was obtained prior to collection of patient tissues and other relevant information. Data on predictors of survival like patient demographics, body mass indices, site, grading and staging of the tumor, treatments, surgery and its complications, recurrence and survival status was collected from the electronic medical recording system. Patients were then dichotomized with respect to body mass index (BMI>25 v/s BMI<25) and patterns of significant differences with regards to predictors of survival between these two groups was studied. Survival analysis was carried out to determine the overall and disease free survival for this group of patients and association with different predictors of survival was assessed.

Findings
Multivariate analysis demonstrated an effect of body mass index on survival but this did not reach statistical significance. Other factors that reached significance included clinical and pathological staging and the type of chemotherapy received. Our study assessed various factors that influenced survival. Though body mass index did not appear to be an independent predictor of survival significant differences in the age structure was seen between the two dichotomous body mass index groups. Studies are warranted to further closely examine these differences in order to elucidate complex interactions involving body mass index and other relevant factors. I further plan on assessing whether or not a similar trend is observed in a homogenous group of patients treated with surgery alone as opposed to the current patient population that has received chemoradiation and surgery as a part of my culminating experience.

Essential Services of Public Health
1. Diagnose and investigate health problems and health hazards in the community.
2. Research for new insights and innovative solutions to health problems.

References

Topic: Barriers to Caring for 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
Faculty Sponsor: Frank Moore, PhD
Community Preceptor: Jeannine Hatt, MD, International Child Care-USA National Board of Directors

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.3 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 Hospital 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 square 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 to 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.

Top: 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 Okeu, M.D., M.P.H.
Faculty Sponsor: Xianglin Du, PhD
Community Preceptor: Mehmet F. Okeu, MD, Baylor College of Medicine-Pediatrics

As medical care improves, more patients that develop cancer in their childhood years go on to survive well into adulthood. 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 survivors 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

Top: Childhood Obesity
Title: Addressing Childhood Obesity at the Children's Nutrition Research Center
By Paul Aguilar
Faculty Sponsor: Linda Lloyd, PhD
Community Preceptor: Jason Mendoza, MD, Baylor College of Medicine-Pediatrics

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 lifespan 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 programs 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: Health Promotion Metrics**

**Title: Health Promotion Metrics for Health Improvement**

By Alan John S. Delos Santos

Faculty Sponsor: John Herbold, PhD

Community Preceptor: William M. Kenyon, MPH, United States Air Force

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 develop preventive health programs tailored to the Air Force personnel.

Topic: Influenza Pandemic
Title: Influenza Pandemic
By Maureen Williams
Faculty Sponsor: John Herbold, PhD
Community Preceptor: Cherise Rohr-Allegri, PhD, Texas Department of State Health Services-HSR8

The events of the 1990’s and early 2000’s demonstrated the need for effective planning and response to natural and manmade 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 understanding the over 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

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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’s— 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.

Topic: Neisseria meningitidis Trends
Title: Neisseria meningitidis Trends in Dallas County from 1996-2007
By Ann Ikonne
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Community Preceptor: John Carlos, MD, Dallas County Health & Human Services-Office of the Medical Director

Neisseria meningitidis causes a considerable amount of morbidity and mortality globally and is chief cause of bacterial meningitis and sepsicaemia 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 Meningitis 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 ± 7.8, whereas the average number of cases from 2005 - 2007 was 3.67 ± 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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<tbody>
<tr>
<td>Average</td>
<td>21.22222</td>
<td>3.6766667</td>
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<tr>
<td>std</td>
<td>7.806602</td>
<td>1.414214</td>
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<td>Cases</td>
<td>191</td>
<td>11</td>
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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 meningitidis 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 able to 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**