Introduction

The Office of Public Health Practice is proud to publish the e-book of abstracts for the Spring of 2008. Students at the end of the semester had the opportunity to submit their abstract for the e-book. Publication of the abstracts is a 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 the many experiences of the University of Texas Health Science Center School of Public Health students’ experience. During the Spring 2008, previous e-books were reviewed by Texas Public Health Association members and 15 student abstracts were published in Volume 60, Issue 2, Spring 2008 edition. The spring semester projects represented a wide variety of experiences with regards to topics and settings. The abstracts in this e-book only represent students who chose to submit their abstract and allowed it to be published.
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Topic: Biosecurity and the Law

Title: Biosecurity and the Law

By Zubin Segal

Public Health Significance
Working for the Center for Biosecurity and Public Health Preparedness in conjunction with the Southwest Center for Occupational Health exposed me to many of the upstream and walry intervention/action strategies and approaches to communicating public health issues. The title of the project in working with my PI could be termed Biosecurity and the Law, as it deals with legal issues that arise during a time of a biosecurity threat or outbreak. Some of the main topics that were addressed involved knowing the legal precedent, right to privacy, and necessity of accessing personal information during times of crisis, when time is of the essence.

Approach
The main way to make progress on the topic was to abide by the adage, “Train the trainers.” The focus of my project was to help organize the Biosecurity and Law Workshop as part of the Southwest Center for Occupational Health’s Spring Institute. I helped organize a manual, which consisted of notes on the lectures of Dr. Carl Hacker and Katherine Wingfield, JD that dealt with laws, statutes, and policies that worked with quarantine and privacy issues during times of an outbreak. In addition, the manual contains relevant Texas State Statutes and landmark Federal and Supreme Court cases that health professionals can use as a reference guide. I also am a Teaching Assistant for Dr. Hacker’s Public Health Law course which utilizes these materials as well.

Findings
The final product, as mentioned above, was the Spring Institute workshop on Biosecurity and the Law (which I will also be helping to administer, as part of the Summer Institute, and will include a section on Ethics during a time of a biosecurity threat). In addition, the manual will be donated as part of the Legacy Library for the Center for Biosecurity and Public Health Preparedness.
**Essential Services of Public Health**
Risk communications was a big deliverable that was achieved through my practicum experience. By education health professionals, administrators, and policy analysts of the legal issues surrounding a threat to biosecurity, they in turn can communicate their own strategies to the community in the context of adhering to proper legal procedures that protect not only the health of individuals, but the individuals themselves.

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**Topic: Cardiovascular Disease Prevention**

**Title: Project HEART: Cardiovascular disease prevention in a Hispanic population: Implementing a randomized trial in a community based setting**

**By Hendrik de Heer**

**Public Health Significance**
The Health Education Awareness Research Team (HEART) addressed the effectiveness of a health education intervention by Community Health Workers/ Promotores (CHW/PS) in a population of Hispanic individuals at risk for development of cardiovascular disease (CVD). CVD is the leading cause of mortality in the U.S. and also among the rapidly growing Hispanic population. Limited knowledge has been available regarding effective interventions in this population. The study implemented the culturally sensitive Salud Para Su Corazon curriculum taught by CHW/PS in a series of 8 health classes and measured participants (control and experimental) on clinical indicators, demographics, health knowledge and behavioral intentions.

**Approach**
I was fortunate enough to experience all facets of the research program. I had the opportunity to see the importance of all aspects such as participant recruitment (knocking on doors!) to screening, measuring, careful documentation, good communication between project partners, database management and data analysis.

**Findings**
The final product will be a number of journal articles. The bottom line is that 1) the population was at a very high risk (about 2/3rd can be classified
as having metabolic syndrome, and the 10 year Coronary Heart Disease (CHD) risk is far higher than the average U.S. population) 2) changes in behavioral intentions and self reported diet were found, but 3) clinical indicators are very hard to achieve and limited over the short time (4 months) between pre and posttest. However, this does not mean that small changes found (e.g. a 1% reduction in 10 year CHD risk) are not meaningful if it does not reach statistical significance. As part of the practicum, I also got to do path analysis in an attempt to model the large number of variables in the program. This approach attempted to test and possibly modify a conceptual framework that includes risk for development of CHD as outcome variable, behavioral intentions, socio-cultural variables and demographic or contextual variables.

Essential Services of Public Health
The project first performed a needs assessment, at the state, regional and local level. The assessment was followed by the building of community partnerships to solicit input from the community regarding the major health issues. Finally, an intervention was implemented that was intended to be culturally appropriate to the population. Now, the intervention results are being analyzed fully and the results will be communicated back to the community.

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Topic: Chemotherapy Contamination

Title: Determining Routes of Cytotoxin Contamination Throughout MD Anderson Cancer Center

By Magda Elena Perez

Public Health Significance
This practicum was developed in conjunction with a study at MD Anderson Cancer Center to determine in which step, from delivery to the hospital to when the patient leaves, does chemotherapy contamination occur within the hospital. Antineoplastic drugs have been identified as mutagenic, teratogenic, genotoxic, and carcinogenic. It is important for MDACC to understand and control contamination of employee work areas because of these hazards, and the fact that over 50 different antineoplastic drugs are being utilized for cancer treatment at this time. (www.cancer.org). During this practicum, a flow chart was developed to
determine all the areas and employees that have contact with antineoplastics from beginning end of the stream. After establishing the stream of the drugs, we will be able to develop a sampling plan that will determine where the closed system is being compromised.

**Approach**
The first step of this study was to create a visual aid of what we thought the process steps were. From there we made a list of the departments that would be involved in the process, and we met with the leaders of those departments to interview them on their processes that contribute to the chemotherapy system. The departments that we met with were pharmacy, housekeeping, and the ambulatory treatment center. We will begin sampling first in the outpatient area where patients come for treatment daily and leave, then move to inpatient areas where patients are treated for extended stays.

**Findings**
We decided the process was complex and would be hard to follow through one flowchart that included the details of each department. The final product of this practicum was a basic flowchart that followed the chemotherapy process with three separate, more detailed flowcharts that showed the processes of each department. The basic flowchart is attached to this report. The next step of the study will include sample collection. Sample collection in the pharmacy will be limited to the highest production pharmacy within the hospital. Housekeeping practices will also be evaluated to determine if current procedures effectively remove the contamination on a daily basis or simply aid in spreading the contamination further. The results of this study may lead to changes in cleaning procedures and drug handling procedures.

**Essential Services of Public Health**
This study addresses the need to promote a safe work environment for employees and patients of MD Anderson Cancer Center. By solving where chemotherapy contamination originates from, the institution will be able to make adjustments and create less occupational exposure. The institution is worldly known for curing cancer with its state of the art technologies and treatments. They are striving as well to create a reduced-risk environment for its employees and patients.
Topic: Childhood Cancer Care In Africa

Title: Development of Education & Training Tools For Childhood Cancer Care In Africa

By Parth Mehta

Public Health Significance
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 BIPAI 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.

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**Topic: Childhood Cavities**

**Title: Reliability of a Mother's Self-Efficacy in Relation to Oral Health & Nutrition in Toddlers**

**By Amanda Sintes-Yallen**

**Public Health Significance**
Typically childhood cavities are not a priority for parents although they are the most common infectious disease after the common cold. Childhood cavities can more often be seen in low income and minority communities. In many instances, it takes 10-12 years for permanent teeth to replace the
primary or baby teeth. It is vital for parents to monitor their child’s teeth using careful selection of foods and beverages that is provided at feedings. Frequency and presentation of simple sugars in the form of sweetened beverages and sweets (cookies, cake, candy, etc) can lead to whether a child develops dental caries or not. Mothers’ dietary habits can directly impact their toddlers diet as they are the principal caregiver and responsible for the majority of the dietary decisions. Decisions such as letting children fall asleep with a bottle, not consistently brushing children’s teeth and selection of certain drinks and foods are critical. These factors have been previously studied but most studies typically overlook factors such as maternal self-efficacy, poverty and culture as having an impact on the risk of toddler’s dental caries.

**Approach**

Hispanics of Mexican descent from the Santa Rosa Women’s Infant and Children’s Program (W.I.C.) and the Frank Bryant Health Center in San Antonio, Texas whose children were between 0-4 years were invited to participate in this study. This study used a convenience sample for patients seen between January to April of 2008. There were a total of 77 mothers who participated in this study. Mothers were interviewed through the use of a questionnaire, which focused on demographics, nutrition self-efficacy, acculturation and feelings on dental care and nutrition. Children who qualified received dental examinations.

**Findings**

A reliability test on the mother’s self efficacy was conducted at both sites to test the degree to which their answers to five questions when asked at two different points remained the same. A Percent Agreement test was used to test the reliability. The Percent Agreement for W.I.C. was as follows: Question 1 82%, 2 82%, 3 64%, 4 77% and 5 82%. At the Frank Bryant Clinic, the percent agreement was as follows: Question 1 74% 2 72% 3 85% 4 88% and 5 88%. As per the data, W.I.C. participants had better reliability with questions 1 and 2 while the Frank Bryant clinic fared better with questions 3, 4 and 5.

**Essential Services of Public Health**

Two essential services of public health that were primarily addressed during this project were to inform, educate and empower people about health issues and research for new insights and innovative solutions to health problems.
Topic: Childhood Obesity

Title: Evaluating the effectiveness of Kinderworld’s food program on controlling obesity

By Syed Moosavi

Public Health Significance
Childhood obesity is an increasing problem among American children today – 1/6 of those under 12 are obese. This is primarily attributed to an unhealthy diet. Hence it is important to see that kids are being fed nutritious and healthy food, especially in child care centers, where children spend a large part of their day.

Approach
I supervised the working of the center, especially relating to meals and snacks fed to children, to see if they met health guidelines set forth by the US Department of Agriculture. I also recommended that heights and weights of the children in the center be measured to determine the effect of the diet on their BMI.

Findings
Data relating to the children’s BMI was collected by the center, and will be analyzed statistically for the purpose of a thesis, which is expected to be completed this summer. It is hypothesized that children who have been in the center for a longer time will have healthier weights than those who are new or have been in the center for a short time.

Essential Services of Public Health
Evaluating the effectiveness of public health programs.
Monitoring health status in the community.
Topic: Childhood Obesity

Title: Michael and Susan Dell Center for Advancement of Healthy Living

By Katherine Skala

Public Health Significance
Childhood obesity is clearly a major health problem affecting our nation’s youth. Research has shown that quality of life can be severely affected by weight status in youth. In children, depression, social isolation, strain on peer relationships, and stigmatization have shown to be the quality of life indicators most severely affected by overweight. Additionally, the physical consequences of this health problem including type II diabetes, heart disease, metabolic syndrome, and sleep disorders can pose a serious health threat to our children. It has been shown that the physical health consequences of obesity are coupled with the psychosocial consequences the child may experience a significant decline in quality of life.

Approach
The Michael and Susan Dell Center for Advancement of Health Living is committed to healthy children. In efforts to combat this serious issue, they have undertaken numerous projects to ameliorate this threat. Two of the projects I was directly involved in include the CATCH (coordinated approach to child health) school program, and the SPAN (School Physical Activity) surveillance system for monitoring children. My primary involvement was in the data collection for the evaluation of these projects. The SPAN project is used to monitor height, weight, nutrition, and physical activity patterns in Texas school children so I spent most of my time visiting elementary schools in Houston measuring students’ height, weight, and administering surveys. Additionally, I participated in several projects related to the CATCH school program including evaluation of curriculum, training, and focus groups.

Findings
At the present time, the data is still in the analysis process although there have been some promising trends related to the positive outcomes of the CATCH program on health risks to children related to overweight.
Essential Services of Public Health
The major service of the SPAN project was to monitor health status to identify and solve community health problems.

The major service of the CATCH project was to inform, educate, and empower people about health issues and evaluate effectiveness, accessibility, and quality of personal and population-based health services.

Title: Children with Behavioral Problems
By Pascal Lemnyuy Kingah

Public Health Significance
DePelchin Children's Center (DCC) has as major goals to provide two services which are behavioral healthcare and Child welfare services to children. DCC collaborates with the Harris County Health and Human services in carrying out evaluations on a project (that I will not identify due to confidentiality requirements of my institution) for children with behavioral problems. This project helps children to function better at home, school, in the community and later in life. In evaluating the activities of the project, certain instruments are used to administer interviews to families and data collected from these interviews are later analyzed. This is particularly important as analysis of the data will help us to understand the needs of families and also to understand how care should be delivered. Each year approximately 20000 Harris county youth need services from the public mental health system but majority (76%) have not received treatment services.

1 In the state of Texas, 65% of individuals consuming mental health services live in private residence with their families and 80% are made up of children.

2 Approximately 111000 Texas children eligible for assistance with dire need for mental health care are still waiting for help.

With such an outstanding number of children with behavioral health problems who do not receive treatment, this project is definitely required and has been considered as a major partner in the process of the Texas mental health transformation process.
**Approach**

In order to understand the involvement of families in the project, we employed two instruments which were Social Capital Survey (SCS) adapted from the Social Capital Community Benchmark Survey and the Social Support Survey (SSS) adapted from the Duke University Social Support Index. These are instruments from an evaluation in the project in which data collection is currently going on. SCS is used in measuring community connectedness and SSS measures the amount of support an individual feels he has at a given point in time. Data was collected in a cross-sectional manner at different time points every 6 months and the data could be compared between various time points. Data collection was carried out during home visits after an initial contact for consent to participate was done. A series of questions were asked to both the youth and the caregiver and the answers were entered on a datasheet. With the data collected, the information was entered into an SPSS 15 database for analysis. Using adapted syntax for each instrument we calculated mean total scores for the instruments for different time points.

**Findings**

This analysis included basic descriptive statistics comparing the total scores of the different subscales for SCS and SSS for different time points. Figure 1 showed that we had interviewed a total of 48 families for the intake interview, 38 at 6 months and 12 after 12 months. The rest of the families for 6 months and 12 months had not yet met their 2nd and 3rd interview time points. The mean total scores for SCS were similar for both the intake and at 6 months but lower at 12 months. Higher scores at intake and 6 months were likely due to the influence of the electoral process as primaries were organized in the state of Texas and this was in line with the article by Rahn et al that national elections in the U.S can provide the context for increases in various forms of social capital. Mean scores for scales of SSS increased slightly from intake to 12 months. This could be explained by the fact that the families feel more support after they start participating in the project and understood what it offers. Examples of services provided such as individual therapy, psychiatric consultation, adoption services, residential services and family support services. A remark from one of the caregivers of a child with behavioral problems was “I am very comfortable about my son and my family now. I used to live in a neighborhood infested with rats but since we entered the program they helped us to move to this place which is safe and clean and since he started taking his medications he no longer presents with outbursts of anger”.

**Essential Services of Public Health**
This project addresses the essential service of mental health for children with mental health problems and also mental health for their family as a whole because by including the caregivers in the project we are indirectly considering the entire family and are able to maintain a good rapport with the families.

**Figure 1**- Number of participants

![Bar chart showing number of participants at intake, 6 months, and 12 months.](chart1.png)

**Figure 2**- Total mean scores for all scales of Social Capital Survey

![Bar chart showing total mean scores for intake, 6 months, and 12 months.](chart2.png)
**Figure 3** - Mean scores for scales of Social Support Survey

<table>
<thead>
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<th></th>
<th>Intake</th>
<th>6 months</th>
<th>12 months</th>
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<td>Mean Score</td>
<td>9.52</td>
<td>9.24</td>
<td>10.82</td>
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</tbody>
</table>

**References**

2. [http://download.ncadi.samhsa.gov/ken/pdf/URS_Data06/TX.pdf](http://download.ncadi.samhsa.gov/ken/pdf/URS_Data06/TX.pdf)

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**Topic: Chronic Disease Prevention**

**Title: Healthy Wellness Walkers in South Dallas**

**By Tiffany Billmeier**

**Public Health Significance**

Chronic diseases encompass the most prevalent forms of disease and disability affecting the United States today. These preventive and costly health problems account for 70% of all deaths in the U.S. and directly...
affect over 1.7 million people each year. Adopting healthy lifestyle behaviors such as eating more nutritious foods, being physically active, and avoiding at-risk behaviors can prevent or control the devastating effects of these diseases. Public health approaches recognize that these factors contributing to health in at-risk communities are largely beyond the reach of traditional medical practice and require collaborating with the affected communities to improve health outcomes. Through the use of community based participatory research principles, researchers can partner with key players in vulnerable populations to understand the community’s own perceived health needs and work together to address the burden of chronic disease.

**Approach**
In order to combat cardiovascular disease, diabetes, obesity and certain cancers, significant lifestyle changes need to occur within our communities. Low income communities have less access to affordable fruits and vegetables and may live in unsafe neighborhoods that prohibit them from engaging in outdoor physical activities. Healthy Wellness Walkers is a walking program designed to promote physical activity among a low socio-economic community. Through this walking program, researchers at the UT Southwestern Division of Community Medicine hope to show that involvement in this effort will decrease the occurrence of preventable diseases within the South Dallas community. The participants of Healthy Wellness Walkers are predominantly African Americans living in neighborhoods that are at high-risk for chronic disease due to ethnicity, limited income and limited exposure to health care and education. In order to recruit participants for the program, flyers were distributed at local businesses and health fairs which promoted the kick-off event in January 2008. Each participant signed up for a one year commitment and will be measured every three months for blood pressure, BMI and waist measurements, while being presented with information about health and lifestyle enhancement. Participants are also encouraged to walk 10,000 steps each day and walk as a group at the Texas State Fair Grounds each weekend.

**Findings**
The final products of this program were recruitment of 30 new walkers in the Healthy Wellness Walkers program and coordination of both the January kick-off and April check-up events. Information on how to successfully use a pedometer and information about the Race for the Cure sponsored by the American Cancer Society was presented at each event.
The group also chose to participate in a 5K walk in the Dallas community in March 2008.

**Essential Services of Public Health**
The essential services of public health this project addressed were prevention of the disease burden and possible economic impacts of chronic disease. The project focused on building strengths and empowering community members to make changes in their lifestyles to prevent and effectively manage chronic diseases within their community.

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**Topic: Circumcision and Sexually Transmitted Diseases**

**Title: Circumcision as a protective factor for gonorrhea and Chlamydia among incarcerated youth**

**By Lokash Shahani**

**Public Health Significance**
According to the CDC Chlamydia and gonorrhea are the top two most frequently reported bacterial sexually transmitted infections in the United States. Compared to the older adults the younger sexually active adolescents are at a higher risk of acquiring these infections due to a mix of behavioral and biological reasons. Cultural and environmental factors also play a big role in making adolescent indulge in these risky sexual practises. Incarcerated youths definitely have a lot of these factors which make them susceptible to these infections. In a previous study done at Harris county Juvenile detention center it was found that out of the 6805 sexually active youths, 527 (7.74%) had urine tests positive for Chlamydia, 46 (0.68%) for gonorrhea, and 68 (1.0%) for both organisms, for a total prevalence of infection of 9.42%.

**Approach**
I started my practicum with Dr. William Risser, Director, Division of Adolescent Medicine, and University of Texas-Houston Medical School. He conducts clinic at the Harris County Juvenile Detention Center and is interested in sexually transmitted infections in adolescents.
Findings
The youths were screened for gonorrhea and Chlamydia using urine test and their circumcision status was noted by the physicians and nurses. I am currently working on a paper which deals with circumcision status as a protective factor against gonorrhea and Chlamydia infections.

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. Routing neonatal circumcision could be one option which could be proposed.

Topic: *Clostridium difficile* associated diarrhea

Title: Making Cancer History

By Yashoo Yadav

Public Health Significance
The practicum was completed at St Luke’s Episcopal Hospital working as part of the infection control team. *Clostridium difficile* associated diarrhea (CDAD) is the most common cause of infectious hospital-acquired diarrhea but 90% of hospitalized patients with diarrhea test negative for CDAD. There has been a recent surge in incidence and disease severity attributed mostly to emergence of a hypervirulent strain in North America. Also, more cases of community acquired infection are being reported which makes it a growing public health problem. The clinical spectrum of *Clostridium difficile* infection varies from diarrhea to fatal outcomes like pseudomembranous colitis. The specific aim of the project was to study the associated risk factors to increase diagnostic accuracy and help guide empiric anti-CDAD therapy.

Approach
After due consent, clinical data was collected on 778 non ICU patients who tested positive for *Clostridium difficile* (positive result by *C. difficile* toxin B cytotoxicity assay) and had diarrhea (defined as more than 3 bowel movements in the last 24 hours). Information on associated variables was obtained using the medical chart of the patients and risk factors for
CDAD among hospitalized patients with diarrhea was assessed using univariate and multivariate analysis.

**Findings**

Of the 778 patients, 43 (6%) had a positive cytotoxicity assay for *C. difficile*. Using univariate analysis, antibiotic usage, total parental nutrition [TPN], central venous catheter and dialysis were significantly associated with a positive CDAD result. Significant risk factors identified from multivariate analysis were antibiotic usage and TPN use. Conclusion: Antibiotic usage and TPN increased the risk of CDAD among non-ICU hospitalized patients with diarrhea.

**Essential Services of Public Health**

The two essential services of public health that were addressed in my practicum experience were “Diagnose and Investigate” and “Research”.

**Future Direction**

Our goal is to develop an index for clinical suspicion that will help in early diagnosis of CDAD and override the diagnostic dilemma. I will continue working on it in the near future and build upon the data we have collected and collect more if the need arises.

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**Topic: Community Health Assessment**

**Title: Making Cancer History**

**By Vanessa Gartrell**

**Public Health Significance**

This practicum consisted of working with the Bi-National Health Council of Brownsville and Matamoros to conduct a community health assessment focusing on dengue. Dengue is currently a national focus for public health in Mexico with the Secretary of Health concentrating their efforts on dengue prevention, community education and seroprevalence testing. Our Bi-National Health Council decided to focus on dengue for the community health assessment for a variety of reasons including: many council members focus on infectious arboviruses in their job enabling them to work on dengue, the United States and Mexico have different case definitions and testing methods for dengue which makes it difficult to
compare incidence rates and lastly, many council members were very passionate about dengue and felt they would be willing to commit their time to a health assessment for this cause.

After many conversations, this council decided that they wanted to better understand the differences in perceptions of both residents and physicians of dengue in the two cities as well develop a similar case definition in both locations that would allow for a better understanding of dengue incidence rates, which would then allow us to understand if dengue truly is a major health concern and lastly, to understand if we are underestimating dengue incidence. Many council physicians are concerned that the lack of interest the United States government has shown in dengue will lead to under diagnosing dengue, which will eventually lead to an epidemic of dengue once community members have become infected with multiple strains of dengue virus.

**Approach**

First, I assisted the council in refining a workbook and facilitated council meetings. Once the council spoke with directors from the Department of State Health Services, they realized that there was not enough support from the necessary entities to continue to focus on coordinating case definitions between countries. They then focused entirely on understanding community perceptions of dengue. In order to form this understanding the committee conducted four focus groups with Brownsville residents which included women in groups ranging from 8-12 participants and divided into socioeconomic status (above versus below the poverty line) and plans to conduct four more in Matamoros as well as interview physicians on both sides of the border.

**Findings**

Focus group participants were asked to respond to a variety of open-ended questions on dengue including symptoms, prevention methods and mosquito breeding grounds. We then worked together as a committee to write a report analyzing the results from these groups, which will be used to guide the development of an intervention targeting dengue in these communities. This procedure will be repeated for the interviews and Matamoros focus groups.

**Essential Services of Public Health**

This assessment primarily addresses the public health function of mobilizing community partnerships and developing policies and plans.
The partnerships created both through the Bi-National Health Council as well as with different community organizations enabled the committee to conduct the community health assessment. This knowledge will then be used to develop an intervention plan.

Topic: Educating Stakeholders on Preventable Hospitalization Conditions

Title: Practical Exposure to the Department of State Health Services

By Taylor L. Hartley

Introduction
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—or 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.
Public Health Significance
Ehrlichiosis is a tick-borne, bacterial illness that affects species including dogs and humans. *Ehrlichia canis* commonly causes disease in dogs and rarely causes disease in humans, while *E. chafeensis* and *A. phagocytophilum* commonly cause disease in humans and sometimes cause disease in dogs. In 2005, there were 1,404 human cases of ehrlichiosis in the United States, 8 in Texas. There have been over 500 cases of infection with *E. canis* in dogs in Texas since 2001. Several species of tick transmit ehrlichiosis, including the brown dog tick *Rhipicephalus sanguineus*, the blacklegged tick *Ixodes scapularis*, and the lone star tick *Amblyomma americanum*, all of which are prevalent in Harris County. The present study will look at the seroprevalence of *E. canis*, *E. chafeensis*, and *A. phagocytophilum* in dogs at the Harris County Public Health and Environmental Services (HCPHES) Veterinary Public Health animal shelter and the species of ticks present on dogs in the animal shelter. This information will be important to the health of domestic dogs and human residents of Harris County.

Approach
This semester, I spent time at my practicum researching the literature on ehrlichiosis in dogs and humans and learning how to draw blood from dogs in order to collect serum samples to test for ehrlichiosis antibodies. Each week during the semester, we randomly selected 15 dogs from the animal shelter population and drew blood from each dog. We then centrifuged the blood to collect serum, which will be stored at -20°C until we perform indirect immunofluorescence assay (IFA) to test for ehrlichiosis antibodies next semester. Also, during the fall 2008 semester, I will go to the animal shelter on three different weeks to comb all of the dogs for ticks. I will then identify the ticks by species to determine which species of ticks are prevalent on dogs in Harris County.
Findings
The laboratory testing and data analysis for my study will take place next semester, as part of my thesis project. Results will include the seroprevalences of *E. canis*, *E. chafeensis*, and *A. phagocytophilum*, as well as the species of ticks present at the animal shelter in the fall and their proportions. These results will then be compared to data collected on the dogs, including sex, spay or neuter status, breed, intake status (stray, owner surrender, etc.), and area of Harris County where the dogs were found. My final product for this semester is my thesis proposal.

Essential Services for Public Health
This practicum project accomplished two of the essential public health services. It is essentially a surveillance project, which monitors the health status of the dogs in Harris County. It also mobilized community partnerships by forming a connection between the zoonosis veterinarian at HCPHES and my faculty advisor and her lab facilities at the School of Public Health.

Topic: Environmentally Sensitive Purchasing

Title: Environmentally Sensitive Purchasing Decisions Project

By John H. Gamble

Public Health Significance
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 environment 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-renewal and renewal 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

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**Topic: Food-borne Disease Surveillance**

**Title: Food-borne Disease Surveillance Internship**

**By Katherine Ngo**

**Public Health Significance**
Foodborne illness affects millions of people all over the world. Two major diseases that warrant national attention are shigellosis and salmonellosis. These two diseases are notifiable diseases that cause gastrointestinal symptoms and must be reported to the health departments. Unfortunately, they are underreported. The CDC estimates that there are close to 400,000 cases of shigellosis in the United States a year but only 14,000 laboratories confirmed cases are reported.

**Approach**
In the beginning of the internship, shigellosis and salmonellosis cases were reported to the health department through laboratory reports. These cases were investigated through telephone interviews. In these interviews, risk factors were assessed to establish a possible source of infection. Risk factors included restaurants attended, risk foods like meat/dairy eaten at home, how the food was prepared, water consumed, and contact with animals. Stool specimens were collected and sent to the laboratory. At the city laboratory, they were tested with pulsed gel electrophoresis or PFGE to identify strain and serotype. Once all the data was collected, the information was coded and filed in the city health department filing room. In the second half of the internship, once the 2007 shigellosis cases were
closed, the beginning stages of analysis were performed. Firstly, the cases that were not in the department’s jurisdiction were thrown out. The variables looked at in analysis were age, sex, strain and location. The locations were organized by zip code and the newly designated super regions for Houston. These preliminary findings were given in a power point presentation to the bureau of epidemiology and written in a report.

Findings
The findings in this preliminary analysis consisted of the age and location distribution of cases. Consistent with literature published on shigellosis, the majority of shigellosis cases were children under the age of 10 years old. An interesting finding is case counts in the community show that a large amount of cases seemed to be concentrated in the southwest. However, when population density was taken into account, the northern part of the city had a higher incidence of shigellosis than the southwest (rate of 13 vs. 12 per 100,000 population). Also, one particular PFGE pattern accounted for a vastly greater number of cases than any other strain. This finding presents a good opportunity for further analysis to determine the mode of transmission for this strain.

Essential Services of Public Health
This internship dealt primarily with surveillance of a highly communicable disease. Monitoring illness is very important to prevent a community-wide problem. The preliminary analysis done for this project can be used to create ideas as to which risk factors and populations are more likely to cause or develop illness. Furthermore, normally underused tools like PFGE can be better used to develop hypotheses on distribution and etiology of cases.

Topic: Food-borne Disease Surveillance

Title: Food-borne Disease Surveillance Internship

By Christina Socias

Public Health Significance
Foodborne illness is a broad field that includes highly communicable diseases that can be transferred in the food supply, as well as the water supply and by human/animal contact. Two common illnesses that are of
national public health interest include Salmonellosis and Shigellosis. These diseases are characterized by gastro-intestinal symptoms that are typically more severe and common in young children and the elderly. The most common serotypes of the Salmonella bacteria include *S. enteriditis* and *S. typhimurium*. In the past 5 years, there has been an increase in these diseases around Houston and in the United States. Unfortunately, due to vast underreporting, it may be difficult to completely characterize the true cause and effect associations.

**Approach**
During the beginning of the internship, these two diseases were investigated individually to acquire risk factor data by direct phone calls to the patient or patient’s guardian. Important risk factors included demographics, geographic location, travel, animal interaction, restaurants visited, foods consumed including high-risk foods such as meats/dairy. Laboratory data was also collected using pulse-field gel electrophoresis in order to serotype the specific bacteria found in stool specimen. The information was coded and entered into the main filing system at the Houston Health department. Once all cases were closed for Salmonellosis in 2007, preliminary analysis was done of these case investigations from the entire Houston jurisdiction. These cases were characterized by age, sex, race/ethnicity, geographic location and bacterium serotype using statistical software from Microsoft Excel. This information was presented in a PowerPoint presentation at the Health Department to the Foodborne team and all of the Bureau of Epidemiology was invited.

**Findings**
Although the incidence in Houston has been increasing, there was a significantly lower incidence of reported Salmonellosis in 2007. More than 50% of these cases were under the age of 10 with a large number also reported from those 65 years of age and older. There were significantly more females reporting Salmonellosis than men. There was also a high proportion of Hispanics that reported having the disease. There seems to be a seasonality of cases, where more cases were reported in the late summer and fall months. The geography of Salmonellosis reveals that more cases were reported in the South/Southwest areas of Houston, but this may be due to higher population density in that area. There were numerous outbreak investigations conducted in 2007 with cases from Houston linked to larger, national outbreaks.
Essential Services of Public Health
This project focused on the aspect of the public health essential service involving the monitoring of health status to identify and solve community health problems. This preliminary analysis generates hypotheses as to the risk factors and high-risk populations that are reportedly afflicted by Salmonellosis. Further, in depth analysis should be done to investigate some of the potential associations found in this report.

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Topic: Healthcare and the Homeless

Title: Healthcare for the Homeless (HHH)

By Nancy Grace Chen

Public Health Significance
Healthcare for the Homeless (HHH) serves a population that has very limited access to healthcare since most of the homeless lack health insurance and providers. The homeless also have particular healthcare needs that need to be addressed, such as higher rates of mental illness and substance abuse.

Approach
I evaluated HHH’s performance in 2007. At the beginning of 2007, HHH drafted a health care plan that included benchmarks and goals for patient treatment that they had hoped to meet in 2007. I performed a chart review by taking random samples of patient charts from their Electronic Medical Records. I noted if samples of patients had been tested for TB, been screened and counseled for substance abuse, met target blood pressures, and more.

Findings
My final report consists of spreadsheets containing all of the patient data I collected as well as a report detailing how successful they were in meeting each of their goals.

Essential Services of Public Health
My project addressed the assurance and evaluation services of public health. Regarding the assurance aspect, my project had the side effect of evaluating the health care providers. I was able to detect some patterns in
the providers’ reporting, which the administration can relay and use to provide suggestions to the providers. And clearly, the main goal of this project was evaluation of the effectiveness and quality of their health care efforts. This will provide them with information that can be used for improving their programs and allocating resources.

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Topic: Hepatic Arterial Infusion Chemotherapy

Title: Imaging Exclusion of Extrahepatic Perfusion does not prevent Gastrointestinal Toxicity Associated with Hepatic Artery Infusional Chemotherapy

By Pritesh Mutha

Public Health Significance
Hepatic arterial infusion chemotherapy (HAIC) has been used for decades for the regional treatment of hepatic metastases. Adverse gastrointestinal effects are believed to be exclusively as a result of non-intentional perfusion of this organ during chemotherapy infusion via arteries that arise from the hepatic artery in a normal or variant fashion. This malperfusion is circumvented by identification of the offending artery(s) via surgical ligation, embolization or catheter repositioning distal to the origin of these vessels effectively excluding access to the gut. As such, the detection of these vessels is/are paramount to prevention of extrahepatic perfusion of drugs by extrahepatic arterial embolizations or proper catheter positions we can reduce the incidence of gastrointestinal toxicity and we try to confirm this by nuclear scan using technetium-99m labeled macroaggregated albumin arterial catheter perfusion scintigraphy the results does not support the traditional belief. This is a very important issue in cancer patients receiving HAIC because after going through such rigorous preventive measures, gastrointestinal toxicity still occurs and the morbidity still remains high. If we could identify and address the exact cause of the toxicity then we might be able to prevent or treat it effectively and thus provide tertiary prevention by reducing the incidence of morbidity of these patients.

Approach
We retrospectively analyzed the records of 69 patients having hepatic primary or metastatic cancer from 1/2005 to 12/2006 who received 198
HAIC sessions. Parameters assessed included demographics, imaging findings, chemotherapy received & GI toxicity (CTC version 3).

**Findings**
Extrahepatic perfusion was identified using areetriography and/or $^{99m}$TcMAA scans and was corrected by arterial embolizations and/or catheter advancement, pre-HAIC. Even after excluding the extra-hepatic perfusion (confirmed by nuclear scan) there is a high incidence of gastrointestinal toxicity. IV chemotherapy was administered concomitantly in 153 patients (5FU/LV, bevacizumab, cetuximab, adriamycin & vincristine); 46 patients received HAIC only. Gastronintestinal toxicity was noted in 119 (61%) HAIC sessions. Incidence of reversible Gr 1, 2 & 3 toxicities in the HAIC vs. HAIC with systemic chemotherapy groups were 18, 1 & 4 vs. 59, 19 & 12 respectively; 7 sessions lacked data. Endoscopy demonstrated duodenal stricture & esophageal varices in 2 patients. The drugs used in HAIC when given intravenously have approximately equal or higher incidence of gastrointestinal toxicity as compared to the incidence using intraarterially. HAIC associated GI toxicity occurs despite the prevention of extrahepatic perfusion demonstrated on pre-therapy arteriography and nuclear scintigraphy. These findings suggest that other factors, such as the chemotherapy agent, may be a hitherto underappreciated cause. This finding proves that traditional belief that GI toxicity can be averted by the prevention of inadvertent malperfusion of HAIC to the GI tract is invalid.

**Essential Services of Public Health**
Assessment of the investigation and treatment was carried out in this project. The results can help us prevent the higher incidence of morbidty due to GI toxicity and provide tertiary prevention in this patient population.
Topic: Hypotensive Resuscitation

Title: Design and Implementation of a Randomized Controlled Trial for Hypotensive Resuscitation in Severely Injured Trauma Patients

By Catherine Anne Morrison

Public Health Significance
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 in 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-1 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.

Topic: Influence of Body Mass Index and Chemoradiation

Title: Immigration and Public Health Law

By Heta Javeri

Public Health Significance
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. 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 of 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

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Topic: Intellectually Disabled

Title: Immigration and Public Health Law

By Rachel Mills

Public Health Significance
The intellectually disabled (ID) are a vulnerable population with high levels of healthcare needs and often depend upon family as their principle caregivers and for financial support. Options for this population do not adequately address their needs. Under current immigration laws, intellectually disabled adult dependents of United States (US) residents and citizens suffer an excessive burden.

This problem causes undue hardship of persons whose family lawfully resides in the U.S. or has the opportunity to immigrate to the U.S. There are health consequences as well, which can include: interrupted treatment, cultural differences in care, and lack of adequate treatment and/or care.

Approach
This problem was addressed by examining how the family based preference system of policy for immigration came into existence, and how past reforms of that policy have recognized the rights of children and rights of the intellectually disabled, and how it has not adequately
addressed our problem. Research into the definition of child and dependent in other relevant immigration laws was conducted as well. Existing immigration options for the intellectually disabled through the family preference system were researched as well as the use of waivers to overcome health-related grounds of inadmissibility.

Findings
From our research we discovered that there exists a visa in the immigration system that defines child in a way that would allow adults with ID to immigrate with their parents. These are the A and G visas for foreign dignitaries. Used in conjunction with the affidavit of support, we can use the definition of child from these visas to address the issues facing adults with ID in the family preference system of US immigration law. However this only partially solves the problem because not all adults with ID are supported by their parents, they often will be living with another family member, such as a sibling. We would like to add that familial aspect so that the new rule would apply to all adults with ID living with immediate family members, not just restricted to their parents.

Essential Services of Public Health
My practicum at Tindall & Foster, PC addresses the informing, education and empowering people and the development of policies and plans essential services of public health. The final goal of our research is to publish an article that will inform people of the magnitude of the issue, explain why the law needs to be changed, propose a working solution, and have the law changed or amended to adequately address this issue.

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Topic: Irritable Bowel Syndrome
Title: Irritable Bowel Syndrome-an emerging area of research
By Pingal Desai

Irritable bowel syndrome (IBS) is a disorder of gastro-intestinal tract characterized most commonly by cramping, abdominal pain, bloating, constipation, and diarrhea. IBS causes a great deal of discomfort and distress, but it does not permanently harm the intestines and does not lead to a serious disease, such as cancer.
Public Health Significance

As many as 20 percent of the adult population, or one in five Americans, have symptoms of IBS, making it one of the most common disorders diagnosed by doctors. It occurs more often in women than in men, and it begins before the age of 35 in about 50 percent of people. It has an annual Incidence rate of 1-2% in US. It is responsible for a significant morbidity like absenteeism from work, change in sports and leisure activities and brings about change in interpersonal relationship like with spouse, children, and other family members. This disease has a great economic impact of $1.35 billion in US.

In addition to this, despite of ongoing research, exact etiology of IBS is yet not known although one theory is that people who suffer from IBS have a colon, or large intestine, that is particularly sensitive and reactive to certain foods and stress. The immune system, which fights infection, may also be involved. This makes it even more challenging field for further research.

Approach

The main aim was to understand the patho-physiology of Irritable bowel syndrome. I was a part of research project jointly carried out by UT-School of Public health, St Luke’s Hospital and Kelsey-Seybold Clinic. The patients were those diagnosed at Kelsey-Seybold clinic. A questionnaire form was mailed to about 550 patients diagnosed with IBS which consisted of general information like their race, sex, age, time since disease, travel to foreign country, their level of education, socio-economic status, impact of disease on them and type of IBS. Phone calls were also made to remind those who did not respond. Depending on patients who responded, a data base was created and all information obtained from the patient was entered into the data base. During analysis, specific risk factors such as travel information, race, socio-economic status etc and even type of IBS and its impact on the life was reviewed to formulate hypothesis for a future treatment study.

Findings

Data entry was done for all the questionnaires collected and the results were analysed by me along with my fellow student also doing practicum at Kelsey-Seybold clinic. Various relationships were determined between IBS and race, socio-economic status, travel to foreign country, impact on interpersonal relationship, type of IBS etc. The results of this project are to be used to formulate a study analyzing the treatment of IBS symptoms using Rifaximin.
Essential Services of Public Health
My project primary attended the following essentials of public health—
PREVALENCE of health problem in the community
EARLY DIAGNOSIS AND TREATMENT of the disease
EFFECTIVENESS of the treatment through clinical drug trials

Topic: Irritable Bowel Syndrome

Title: Prevalence and Risk factors associated with Irritable Bowel Syndrome (IBS)

By Sunder Suraj

Public Health Significance
Irritable Bowel Syndrome (IBS) is a disorder of the gastrointestinal tract that is characterized by abdominal cramps, bloating, abnormal stool frequency and form. Traditional this syndrome was identified by exclusion criteria but more recently specific guidelines such as the Rome criteria and the manning criteria describe the disease and the symptom patterns. In the United States estimates suggest that prevalence of IBS is approximately 10-20% and the incidence is between 1-2% per year. Furthermore 20-50% of gastroenterology cases relate to IBS symptoms. IBS is not a high mortality disease or condition but rather is associated with high morbidity and lifestyle changes such as work absenteeism, lost wages etc. IBS is a disease of the younger generation as most individuals with IBS are under the age of 40. Women are also more at risk of developing. The economic impact of IBS is also great with total annual direct costs related to irritable bowel syndrome being $1.35 billion in the USA. Thus as seen IBS has a significant public health impact in terms of human morbidity as well as economic impact. As a result, understanding and effectively treating or preventing IBS is essential to the public.

Approach
In an effort to understand the epidemiology and patho-physiology of IBS, a study was conducted by Kelsey Seybold Clinic (KSC), the UT School of Public Health and UT Galveston to study the prevalence and incidence of IBS based on lifestyle factors. Patients were identified from the KSC as well as UT Galveston. Once identified, biographic information such as
name address, sex, race etc were obtained. One questionnaire requesting their participation in the study was mailed to patients. Depending on patients who responded, a data base was created and all information obtained from the patient was entered into the data base. During analysis, specific risk factors such as travel information etc were reviewed to formulate hypothesis for a future treatment study.

**Findings**
The questionnaires were collected and are currently being analyzed by myself and other members of the group. The primary focus of the analysis is measure the relationship between travel history and the nature of symptoms to the severity and to link associations along the causality pathway. The results from this project will then be used to formulate a study analyzing the treatment of IBS symptoms using Rifaximin.

**Essential Services of Public Health**
- **Monitor** health status to identify and solve community health problems.
- **Diagnose** and investigate health problems and health hazards in the community.
- **Evaluate** effectiveness, accessibility, and quality of personal and population-based health services.
- **Research** for new insights and innovative solutions to health problems.

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**Topic: Liver Donors and Hepatic Artery Anomalies**

**Title: Aberrant Arterial Anatomy Does Not Increase the Risk of Hepatic Artery Thrombosis (HAT) and Biliary Stricture after Orthotopic Liver Transplantation (OLT)**

**By Olga Taylor**

It has been reported that up to 40% of all liver donors have hepatic artery (HA) anomalies. Several studies have suggested that the presence of aberrant arterial anatomy increases the risk of HAT and biliary complications post OLT.
Public Health Significance
The purpose of our study was to examine the incidence of aberrant HA anatomy and its effect on the rate of HAT and biliary strictures post OLT at our institution.

Approach
We retrospectively reviewed data of 313 adult patients who underwent OLT between 1/00-7/07. Hepatic artery (HA) reconstruction was defined as revascularization of the allograft requiring additional anastomosis between donor hepatic arteries.

Findings
Overall, 28.4% (89) of the donor livers had aberrant arterial anatomy. Of these cases, 13.1% (41) had a replaced left HA, 10.2% (32) had a replaced right HA, 3.8% (12) had both replaced left and right HAs, and 1.3% (4) had the common HA originating from the superior mesenteric artery (SMA). Reconstruction was required in 12.8% (40) of the cases. The main reconstruction techniques consisted of anastomosing the celiac artery to the SMA in 5.4% (17) of the cases or anastomosing the accessory vessel to the splenic artery in 5.1% (13) of the cases. The overall rate of HAT in this study is 3% (10). As shown in Table 1, 2.2% of the patients with abnormal anatomy developed HAT compared to 3.6% of the cases with normal anatomy. 2.5% of the cases that required reconstruction developed HAT while 3.4% of the cases that did not require reconstruction experienced HAT. The overall biliary stricture rate was 13.4%. 13.5% of the cases with aberrant anatomy and 13.4% with normal anatomy developed a biliary stricture. 13.1% of patients that did not require reconstruction and 15.0% of cases that required reconstruction developed biliary strictures (Table 1). There was no statistically significant difference in HAT or incidence of biliary stricture between any of the groups (p>0.05).

Essential Services of Public Health
The presence of aberrant arterial anatomy in the donor liver allograft or the requirement for arterial reconstruction does not increase the risk of HAT or biliary stricture in our patient population.
Topic: Murine Double Minute 2 Protein

Title: The effect of a single nucleotide polymorphism that upregulates MDM2 on survival, response to therapy, stage at presentation, and hemotoxicity in neuroblastoma patients

By Andrew Ludwig

Public Health Significance
Murine Double Minute 2 protein (MDM2) has been shown to play a critical role in the process of cellular transformation that leads to cancer. Since its discovery, MDM2 amplification and overexpression has been indicated with high risk, poor prognosis, or poor survival in many cancers, particularly gliomas, soft tissue sarcomas, acute lymphoblastic leukemia, and non-Hodgkin’s lymphoma. The method of MDM2-induced transformation is likely due to its inhibitory effects on the tumor-suppressor p53, which is mutated or inactivated in over 50% of human cancers. Interestingly, p53 mutations are almost never found in neuroblastoma so understanding other methods of p53 inactivation in this cancer is of understandable importance.

A single nucleotide polymorphism (SNP) located in the promoter region of MDM2, SNP309T>G, has been shown to cause a significant increase in cellular levels of MDM2 protein and reduced levels of p53 activity. Recently, the G/G allele of this SNP has been shown to predict earlier onset of childhood leukemia in Caucasians and Spanish Americans but not in Afro-Americans. Because of the above information as well as the implication of SNP309 with a variety of poor outcomes in adult cancers, we attempted to determine the SNP309 genotype of current neuroblastoma patients at our institution and look for correlations with survival, response to therapy, stage at presentation, and hemotoxicity.

Approach
Using published methods, we designed primers that span a 352bp fragment of the human MDM2 promoter and performed PCR amplification of this region from the genomic DNA of 61 neuroblastoma patients. The fragments were then digested with a restriction enzyme, MspA1I, that specifically cuts only the G allele of SNP309. These digested fragments were resolved on an agarose gel for genotyping. Once the
genotypes of all patients were known, we began abstracting data from their medical records. We abstracted data on outcome variables for survival, response to therapy, and hemotoxicity, as well as known risk factors and demographics.

**Findings**

Although data abstraction is currently ongoing, the results of the genotyping suggest some interesting trends. Whereas previous reports indicate the general population has a 12% frequency of the G/G genotype, our population has a frequency of 21% and an increase in G allele frequency over the general population as well. These data suggest that MDM2 overexpression may play a critical role in neuroblastoma pathogenesis. However, preliminary data analysis indicates that there is not a correlation between genotype and age at diagnosis or ethnicity.

**Essential Services of Public Health**

This research project was primarily aimed at studying the previously undefined effect of a single nucleotide polymorphism on survival, response to therapy, stage at presentation, and hemotoxicity in neuroblastoma patients. Although this SNP has been investigated and implicated in several other adult and pediatric malignancies, no published literature exists on its prevalence or effect in neuroblastoma.

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**Topic: Off-Pump Coronary Artery Bypass Surgery**

**Title: Off-Pump Coronary Artery Bypass surgery (OPCAB) leads to a significant improvement in left ventricular function.**

**By Murtuza Rampurwala**

**Public Health Significance**

Off-Pump Coronary Artery Bypass surgery (OPCAB) has become a much more common method for treatment of adult coronary artery occlusive disease. Investigations have shown that OPCAB is associated with a lower risk of morbidity and mortality when compared to CABG with Cardio-Pulmonary Bypass (CPB) support. With nearly 450,000 CABG operations performed every year in the United States; this concerns a large patient population. OPCAB has been extensively studied in patients with renal
dysfunction, neurological impairments and pulmonary disease; however its effects on ventricular function have not been as thoroughly investigated.

**Approach**
I did my Practicum with Dr. George Letsou at the UT Medical School. We set up and analyzed a database of 509 consecutive patients, who underwent coronary revascularization using OPCAB or a combination of off-pump stabilizers with cardiopulmonary bypass (CPB-BH) for circulatory support between 2002 and 2007. No patient underwent hypothermic cardiac arrest. Ejection Fraction (EF) was assessed by nuclear scanning (MUGA) within 3 days pre-operatively and then within 3 to 10 days post-operatively. In cases where EF was not assessed by nuclear scanning, echocardiogram was obtained. In addition, pre-operative demographic data concerning operative priority, age, sex, smoking history, presence of chronic obstructive pulmonary disease, presence of diabetes, presence of hypertension, history of myocardial infarction, presence of angina, congestive heart failure, history of stroke and presence of cardiomegaly were recorded in the prospective database. The Institutional Review Board at the University of Texas-Houston approved the data collection for use in research with patient consent waived as no identifying parameters were recorded.

**Findings**
The final analysis of the data is still in progress. However in the initial analysis of the data, mean EF seems to have improved significantly in the total population. This is seen for both OPCAB and CPB-BH groups. There seems to be no significant difference in EF improvement between the OPCAB and CPB-BH groups. In patients with EF < 40%, improvement in mean EF looks particularly impressive. This substantial improvement in ejection fraction is present in both OPCAB and CPB-BH patients. An analysis of demographic data shows that age greater than 70 and cardiomegaly are significant predictors for lesser degree of EF improvement post-operatively.

**Essential Services of Public Health**
OPCAB provides optimal myocardial preservation because there is no ischemic cardiac arrest. This should improve post-operative ventricular function, which would benefit a large patient population undergoing CABG.
Topic: Podcasting: A New Medium for Dissemination?

Title: Podcasting: A New Medium for Dissemination?

By Jennifer Richards

Public Health Significance
The National Institute of Health describes translational research as a product of two components. The first component is the “process of applying discoveries generated during research in the laboratory, and in preclinical studies, to the development of trials and studies in humans” while the second is “enhancing the adoption of best practices in the community”. The need for this field was established when it was clear that basic scientists were not familiar with how their innovations would be applied in clinical practice and similarly, practitioners were not considering further research needs based on their observations in the clinical setting. This is clearly a significant issue to public health if one considers the reasoning behind the health research studies we conduct that is the ultimate goal of helping to improve the health and quality of life of people… not bacterial colonies or lab rats.

Approach
My assignment as it related to translational research was to investigate a relatively new medium of health communication, audio - or podcasting, and how recorded interviews of basic scientists as well as practitioners could be structured to facilitate communication with the target audiences of patients and practitioners and promote the dissemination of their particular innovation or observation.

Findings
My final product was a framework or protocol for a podcast interview that contained questions based on a health communication theory, The Diffusion of Innovations by Everett Rogers. At the end of this practicum, I also successfully produced an interview podcast with a basic science researcher that is published on the University of Texas ITunesU site and have two more interviews scheduled before the conclusion of the semester. As this project is now incorporated as a part of my employment with the CCTS, I will continue this project until an undefined time.
Essential Services of Public Health
My particular practicum inherently addresses most if not all of the essential public health service, though maybe not in a direct sense. Essentially, translation of innovations and information is undoubtedly necessary if not critical to be efficient in preventing epidemics and injuries, promoting healthy behaviors, assuring quality of service, etc. For example, if a particular group discovers the cure for AIDS, what good will it do to preventing the epidemic in Africa if it is not publicized to the public health practitioners who would disseminate and ultimately provide it to the population. In conclusion, I enjoyed this project thoroughly and as evidenced by my plan to continue it in my employment, I hope that I will be able to continue work in the field of clinical and translational sciences after my graduation from UTSPH and beyond.

'The University of Texas Center for Clinical and Translational Sciences.
http://ccts.uth.tmc.edu

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Topic: Policy Analysis and Program Development

Title: The Pay for Performance Movement: Determining the Potential Impact of Medicare’s New Reimbursement Policies on a Major South Texas Health System.

By Jonathan Rivera

Public Health Significance
The nationwide Pay for Performance (P4P) movement is a broad sweeping effort driven by Medicare that is aimed at improving the quality of care delivered to patients. Quality of care is of utmost importance in public health and developing processes and programs to ensure high quality has become a renewed focus for the healthcare industry.

Approach
My practicum initially began with a more general focus on the overall P4P movement, which was accomplished through extensive research and literature reviews focusing on the impact of Medicare policies on health care providers nationwide. A priority focus area in the P4P movement is the prevention of various hospital acquired conditions which includes hospital acquired pressure ulcers. My organization quickly identified
hospital acquired pressure ulcers as an area with significant opportunity for improvement. I was involved in the establishment of a system-wide process for monthly pressure ulcer prevalence studies, as well as collecting, aggregating and analyzing the monthly survey data.

Findings
The P4P movement has the potential to significantly impact the clinical quality and financial health of healthcare providers nationwide. With a focus on pressure ulcers, my organization’s monthly pressure ulcer prevalence studies are an ongoing project that will continue indefinitely. Much time and effort went into coordinating efforts by nursing and ancillary staff to hardwire the process of conducting the survey on a monthly basis. The monthly surveys have allowed the organization to get solid baseline data which will help to determine the efficacy of interventional programs to be developed in the coming months.

Essential Services of Public Health
The essential services of Public Health that my practicum addressed include:
1. Research
2. Development of policies and plans
3. Monitor health status

Topic: Premature Birth

Title: March of Dimes’ Impact on Premature Birth: The Antepartum Family Support Program (AFSP)

By Jessica Gamboa

Public Health Significance
In 2004 the total number of live births in Harris County was 67,131. Of that number, 12.7% or 8,537 babies were born premature (Texas Department of State Health Services, 2004). Premature babies face an increase risk for complications and death. The current treatment for many of the mothers of these premature babies includes hospitalization on bed-rest. Research has shown that in addition to being at risk for delivering babies requiring NICU hospitalization, these women are also prone to depression. Bed-rest may be accompanied by separation from family,
anxiety about pregnancy and the baby’s health, boredom due to lack of activity, and a change to a diet of hospital meals; all of which combined may contribute to a mother’s stress.

While causes associated with delivering a premature baby are multifactoral, the Antepartum Family Support Program is aimed at reducing stress in mothers on bed-rest in hopes of preventing the birth of a premature baby.

**Approach**

The Antepartum Family Support Program (AFSP) is the only program to target Antepartum women with socialization and support materials for potentially decreasing the incidence of prematurity. No other hospital-based initiatives targeting this population exist in these hospitals (The Woman’s Hospital of Texas and Children’s Memorial Hermann Hospital).

As a program intern, I recruited and trained volunteers who would be the key in implementing the program. Volunteers are vital to the program’s success as they will provide the educational support materials to the women and will dedicate their time to socialize the mothers-to-be on bed-rest. Volunteers are required to spend two hours twice a month volunteering at the hospital. They provide educational materials provided by the March of Dimes and socialization to the women on bed rest. A pre-and post-evaluation assessment is given to mothers participating in the program. I also held meetings with hospital staff that would be involved with the program (nurses and volunteers services). It was important to determine the logistics of how the program would be implemented, keeping the right information private, and the most effective way to help the target women.

**Findings**

We worked during the semester to get the program initiated. While the intervention has not reached many women yet, those that have received it are grateful and satisfied for program volunteers. The hospital staff is particularly excited about such a program because currently, no other programs exist that target expectant mothers on the Antepartum unit. Providing conversation and educational materials will greatly benefit the future mothers.
Essential Services of Public Health
The AFSP is designed as a promotion and prevention program. We promote awareness about prematurity and newborn care. The AFSP’s short-term goal is to decrease stress levels experienced by expectant mothers in hopes of decreasing premature births, the long-term goal.

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Topic: Premature Birth

Title: My Experience as an Intern with the March of Dimes Ante Partum Family Support Program

By Alakananda Mohanty

Public Health Significance
My project entitled Ante Partum Family Support Program (AFSP) of the March of Dimes is an intervention of social interaction and educational resources to women hospitalized with high-risk pregnancies in Houston. Prematurity is a very serious public health problem affecting millions of infants in the U.S. and worldwide and the leading killer of newborns. Research has shown that premature babies could have lifetime burden of problems including poor health, low educational attainment and are less likely to have families of their own and more likely to have offspring of their own born prematurely and with complications (Lancet, 2006). In the United States alone, more than a half million babies were born prematurely in 2007; i.e. 1 in every 8 babies born.

Evidences also have shown that high-risk pregnant women on bed rest in hospitals are prone to depression leading to premature births and the stressors can be reduced by family support, entertainment and social interaction (Doyle, 2004).

Approach
The AFSP was initiated with the objective of providing social support via one-on-one or group interactions through conversation and companionship to these expectant mothers at the two pilot sites, Children’s Memorial Herman Hospital (CMHH) and Texas Women’s Hospital (TWH) at the Texas Medical Center in Houston.
After conducting an internet search through various websites and contacting local volunteer sites at the Texas Medical Center, members were contacted. Mailers were sent to all the potential members from the March of Dimes Walk America list and the Guild List which included a description of the program flyer, objectives of the program, and a self addressed consent form. The responses were very encouraging and many of the contacted members expressed their interest.

Findings
Based on the responses, a database of volunteers was created and contacts with the Volunteer Services Divisions at the CMHH and the TWH were established. Under the direction of March of Dimes Staff, volunteers were recruited, managed and trained at these hospitals. The Hospital Professional staff (For e.g. Nurses Division) were informed in advance and requested to introduce the program to stabilized ante partum patients and inform them to participate.

Materials developed:
• Promotional one page flyer about the Program
• Volunteer Information Form
• PowerPoint Presentation for orientation of the Volunteers
• Created a Database of Volunteers
• Consent Form
• Volunteer Introduction Flyer
• Pre-assessment Form
• Post-assessment Form
• March of Dimes Welcome Kit

Essential Services of Public Health
The program is a pilot study and has been implemented with a very encouraging number of volunteers.

I am very positive and looking forward to the findings of this pilot study which would hopefully serve as a reference for future research on the subject.
In my opinion, this Ante-partum Family Support Program of the March of Dimes primarily focuses on informing, educating and empowering people from within the community about preterm births and risks associated with it. I would say, it is a great effort to mobilize community partnerships to deal with this issue and intends to provide new insights for future research.

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**Topic: PROP sensitivity and Obesity**

**Title: PROP Sensitivity is Related to Adiposity Among Diverse Children**

**By Nga Nguyen**

**Public Health Significance**
The problem of overweight and obesity in the United States has increased over the past two decades. Because overweight youths are likely to become overweight adults, childhood obesity is gaining increasing importance as public health concern.

Obesity is influenced by multi-factors. PROP (6-n-propylthiouracil) sensitivity provides a genetically determined influence on behaviors which may lead to obesity among children. Our objective was to investigate the relationship between PROP sensitivity and obesity among children from different ethnic backgrounds.

**Approach**
Children were recruited at elementary and high schools. Informed consent was obtained from parents and assent from the child. Height was measured by a stadiometer and weight by an electronic scale, both according to standard protocol with two assessments per measure. BMI was calculated and BMI percentile and BMI z score obtained from the CDC web site. PROP sensitivity was assessed with the comparative impregnated NaCl and PROP tissue paper procedure. Linear regression and multinomial logistic regression were used in the analysis.

**Findings**
Data were collected on 1,695 children with complete data from 1,690. There was no statistically significant relationship between PROP
sensitivity and adiposity status in the sample as a whole. However, there was a weak (overall model accounting for 11% of this variance), but significant, gender x taster interaction term (p=0.0057) in a logistic regression analysis using a categorical (normal, overweight, obese) dependent variable and controlling for grade and ethnic. Subgroup analysis revealed that female non-tasters were less likely to be overweight (OR=0.41) but more likely to be obese (OR=2.64), than super-tasters, while males had reverse pattern.

**Essential Services of Public Health**
This project addresses how PROP sensitivity relates to obesity among children. It will be an initial step to determine which dietary intervention could be tailored.

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**Topic: Quality Assurance Plan**

**Title: Houston Medical Monitoring Project (MMP)**

**By Vaneet Arora**

**Public Health Significance**
Quality assurance is used extensively in health care but has lagged in public health programs. The funds are always limited in public health programs. With increasing focus on accountability and threat of litigations, integration of quality assurance into public health programs has become imperative.

**Approach**
Houston Medical Monitoring Project (MMP), a part of CDC’s MMP gathers information from HIV positive individuals regarding risk factors and access to health care. The quality assurance plan developed for MMP as a part of this practicum focused on developing instruments to ensure quality of interviews and reliability of Medical Record Abstractions (MRAs). The instruments gathered information on selected indicators like timeliness, completeness, accuracy and reliability on re-abstraction of a probability sample of MRAs, and determining areas for improvement by observing a probability sample of interviews.
Findings
The quality assurance plan helped in identifying the strengths and weaknesses. This proved helpful in planning targeted training for interviewers and medical record abstractors. By providing regular feedback the errors were not repeated, and unique (new) errors could be preempted and averted.

Essential Services of Public Health
My project addressed “assessment”, “assurance”, and “policy development”. Integration of quality assurance into public health programs helps in ensuring quality and expending limited resources effectively.

Topic: Quality Control Procedures for Research Laboratory

Title: Maintain & Develop Quality Control Procedures for Enteric Laboratory Research

By Thushara Galbadage

Public Health Significance
In most epidemiological studies, including outbreak investigations and prospective research studies, case-patients are identified by clinical symptoms and confirmed with laboratory test results. Therefore the quality of these laboratory tests needs to be maintained at high levels, to ensure the validity of the procedures and results. Standardized quality control (QC) measures help maintain the laboratory standards and minimize erroneous results. Quality assurance is not only a component of laboratory research, but also an integrated part of field epidemiological studies to maintain the precision of data collected. Therefore quality control/assurance is a critical element that helps maintain the integrity of research carried-out by public health professionals as well as the larger research community.

Approach
Most procedures for proper QC measures were currently laid-out in the enteric laboratory at the UT Center for Infectious Disease (CID), as it is accredited by the College of American Pathologists (CAP). This accreditation and QC methods ensure that the research studies carried-out
are supported by proper standardized laboratory procedures. It was definitely a challenge to grasp the entire process of maintaining QC procedures, and had to be learnt with time. Some QC measures are done daily, while others weekly, monthly, quarterly or annually. This becomes a routine process and QC results are recorded systematically. In addition, when new reagents, media, equipment, and microbial isolates are received, they are tested for quality and integrity prior to being used. When encountered with problems or deviations from the norm, they are logged in, and measures are taken to correct them. All these procedures are documented in the manual of procedures (MOP) that has been developed. When novel procedures are prepared, new QC methods are documented and added onto the MOP, while older versions are stored separately for reference.

**Findings**

Though the QC measures seem invisible, mundane and involve a large amount of documentation, it is a vital component of all research, in order to be confident in the findings and to have a point of reference. QC methods are by no means stagnant; rather they are very dynamic and involve the implementation of procedures, improvement of existing ones, formulate new methods and replace older ones. The process is most learnt and understood when results deviate from the norm. This dynamic practice in research does drain funds, time and skills that could be used to further more critical research; but the resulting confidence and accuracy of results does save in many indirect ways.

**Essential Services of Public Health**

Research for new insights and innovative solutions to health problems is one of the essential services in Public Health. Quality control/assurance is a central component for this process. It is not possible to carry-out research without standardizing the procedures used. QC helps maintain the standard of the results, not only within the laboratory, about across the entire research community.
Topic: Reducing Methicillin Resistant *Staphylococcus aureus*

Title: The Initiation of a 3-year Intervention Study: Reducing Methicillin Resistant *Staphylococcus aureus* (MRSA) Skin and Soft Tissue Infections (SSTI)

By Gregory N. Leos

Public Health Significance
SSTIs that are positive for *S. aureus* and occur in the community are often reported in young, previously healthy individuals that share common items with others or co-habitat in close spaces (1, 2). These include athletes, military personnel, and prison inmates (2). Individuals incarcerated in correctional facilities frequently come in contact with *S. aureus*. The most notable outbreaks have occurred in jails in Mississippi, California, and Texas (3). Outbreaks may occur because inmates share towels, equipment, and personal items. This allows one infected inmate to infect many others prior to treatment. Most cases of *S. aureus* in correctional facilities are SSTIs that are sometimes misdiagnosed initially as a “spider bite,” but some individuals may develop bacteremia, meningitis, osteomyelitis, necrotizing pneumonia, or necrotizing fasciitis from the initial SSTI (4).

Approach
This study will measure the effectiveness of such an intervention. Having one group use disposable towels pre-treated with chlorhexidine and another using disposable towels pre-treated with a placebo (saline water) both receiving improved hygiene education compared to a group receiving no intervention at all will allow the investigators to assess whether education alone is effective, or if the antimicrobial is needed to make the intervention maximally effective. The control group will provide the baseline comparison.

My participation involved the abstraction of medical records for the background portion of the paper that this study will produce. I also attended meetings and provided insight to IRB issues, procedure methods, and general assistance to get the study started. I also assisted in the creation of methods for educational material for study participant enrollment.
Findings
The initiation of this study did not occur as rapidly as I had hoped, but such is the nature of large studies involving so many players (The University of Chicago, UT Southwestern, Parkland Department of Jail Health, and Dallas County Sheriff’s Office). That experience alone was invaluable, as I was allowed to see problems arise and be solved with manning, budget and time issues. The bulk of my time was spent abstracting data. Preliminary result (from the three months of data I abstracted) indicates that the rate of MRSA SSTIs in the Dallas county Jail is consistent with the national average (~80% of all SSTIs cultured were positive for MRSA). I also assisted in suggesting methods to code the abstracted data for more complex analysis.

Essential Services of Public Health
My hope beginning this practicum was to focus epidemiology. However, I found myself being educated in not only epidemiology, but health policy and management issues. I was fortunate to have the medical director for jail health as my community preceptor, who is a UTSP MPH graduate as well as an MD. This allowed me to see how changes to health policy for a large population are decided upon, made and implemented. I have been so impressed by the people I have worked with that I am volunteering to continue working on the study until the end of the year.

References


Topic: Risks Factors for Child Inactivity

Title: Risks Factors for Child Inactivity

By Hong Zhang

Public Health Significance
A recent study indicated that approximately 16% of boys and girls aged 6 through 19 years were overweight and 30% were at risk of becoming overweight. (1) In the past 3 decades, the proportion of overweight children and adolescents has tripled (2). Obesity in children and adolescents is increasingly being recognized as it associated with health complications (3). Sedentary behaviors, especially television viewing has been consistently viewed as an important factor on risk of overweight in youth (1). A better understanding of the correlates of physical activity and television watching in children and adolescents will enable more effective interventions that target multiple behaviors. Also, identifying correlates that can affect these two target behaviors among children of varying weight status will be important for child health.

The relationship of athletic self-concept to physical activity, over and above the specific effects of gender, ethnicity, and overweight status, three key correlates of physical activity, however, remains to be explored. Therefore, this study was to examine the association of Anderson’s Athletic Identity Questionnaire scores with physical activity and television viewing in two age groups of children, over and above effects of gender, ethnicity, and overweight status.

Approach
Two age groups of children (N = 2095) completed the 40-item Athletic Identity Questionnaire (AIQ), measuring athletic appearance, competence, importance of physical activity and sports, and encouragement for activity from parents, teachers, and friends. Multiple regression analysis assessed the effects of athletic identity, ethnic group, gender, and overweight status,
calculated from measured height and weight, on moderate-to-vigorous physical activity and television watching in each age group. Secondary analyses considered the contribution of each factor of athletic identity to both behavioral outcomes.

Findings
In both age groups of children, athletic identity was independently related to physical activity (p < .0001, p < .0001) and television (p = .01, p = .002).

Essential Services of Public Health
This project addressed questions and issues that enable effective interventions that target multiple behaviors for children inactivity and obesity concerns.

References


Topic: Role of Graduate Student Epidemiology Response Programs

Title: A Solution to the Missing Link: the Role of Graduate Student Epidemiology Response Programs in Strengthening Public Health Capacity

By Erik Hensarling

Public Health Significance
The CDC and the Council of State and Territorial Epidemiologists have recently identified a deficit in the resources and infrastructure for epidemiologic surge capacity in the US. At the same time, several academic institutions and the CDC have emphasized the need to diversify epidemiological training programs that provide practical skills and experience for future public health professionals. A logical solution to help meet the need for both increased public health surge capacity and opportunities for hands-on training are the creation of graduate student epidemiology response programs (GSERPs). The Student Epidemic Intelligence Society (SEIS) at the University of Texas School of Public Health is a GSERP that has rapidly grown since its inception in 2003. The objectives of SEIS are to provide assistance to health departments during emergencies; offer students training and hands-on field experience in outbreak and disaster preparedness and response; and develop knowledge of incident command systems and emergency operations management.

Approach
To achieve this goal, materials spanning the history of SEIS will be edited and condensed into form which is organized and easily understood. Accomplishing this will require collaboration with current SEIS officers and faculty advisors. Additionally, 8 hours of collaborative time will be spent at the Harris County Public Health Division of Epidemiology.

Findings
In the end, our efforts intend to produce an SEIS compendium which will allow other Schools of Public Health to establish and grow their own GSERPS. This will be in the form of document templates and procedural outlines for securing funding, initiating training programs, establishing
partnerships with local health departments, and other essential duties required to maintain a GSERP.

**Essential Services of Public Health**
Under the definitions of essential services provided by the CDC's National Public Health Performance Standards Program, espousing the SEIS message as outlined here fulfills the essential services of informing, educating, and connecting community partners.

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**Topic: Subtle Prejudice**

**Title: Assessment and significance of subtle prejudice**

**By Dianne Wells**

**Public Health Significance**
Although many Americans today believe that prejudice rates in general are dropping, research exists that suggests that while overt prejudice may be less evident than in the past, subtle prejudice continues to flourish and to be problematic. As time passes and Americans become more educated, they tend to adopt attitudes that are more egalitarian and so become less likely to acknowledge or express outright prejudice. Many harbor sublimated prejudicial feelings, however, and may still behave prejudicially by justifying their actions according to criteria they deem to be non-discriminatory. Subtle prejudice may manifest in many ways and is more difficult to detect and to combat than outright or overt prejudice. Implications for the existence of subtle prejudice in public health issues include its contribution to disparities in health care, education, employment, and wages. Given such disparities, it would behoove us to develop methods to recognize, assess, and prevent subtle prejudice.

**Approach**
My approach in this practicum was two-fold. First, I worked with my community preceptor in researching and in producing a literature review on the subject of prejudice. I also participated in administering and organizing data for a study designed to measure prejudicial attitudes of students toward professors.
Findings
My final product for this practicum was an annotated bibliography in which I summarized the results of my literature review on subtle prejudice. Based on my research, I have concluded that subtle prejudice is a constant and pernicious public health issue. Subtle prejudice currently contributes to disparities in health care, education, employment and wages.

Essential Services of Public Health
In this practicum, I addressed research and assessment of subtle prejudice. I believe that much more research is warranted. My hope is that results from current and future research might enable us to determine methods of minimizing or preventing the negative effects of subtle prejudice on public health issues.

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Topic: Teenage Pregnancy

Title: Project Working On Real Teen Health

By Tiffany Davis

Public Health Significance
The adolescent years are important in a person life because it is a time of growth physically, mentally, and emotionally. According to statistics from the National Campaign to Prevent Teen and Unplanned Pregnancy, the teen pregnancy rate for Texas is 101 per 1000 (2004). Statistics also show that 39% of teens are sexually experienced by 9th grade and there is either very little or inadequate sexual education occurring in school. It is important that public health officials step in to make sure that teens are being properly educated about sex. In Texas, many of the schools that teach sexual education use an Abstinence Only curriculum. Project WORTH uses the BIG DECISIONS™ curriculum that is evidence-based and Abstinence Plus in select schools throughout San Antonio Independent School District.

Approach
I joined the Project WORTH Facilitators in implementing the 10 week BIG DECISIONS curriculum at area high schools. We worked in the Freshman Prep classes at Sam Houston High School on the eastside of San Antonio and Jefferson High School on the northwest side of San
Anderson. I also observed the “Goals and Dreams” presentation that the facilitators gave to eighth graders at Tafolla Middle School. By the end of the ten weeks, I had made valuable connections with the students and felt comfortable facilitating the curriculum.

**Findings**
Being in the classrooms and interacting with the students showed me first-hand the need for quality sexual education in high school and middle school. The students are severely misinformed on some of the most important knowledge needed for safe sexual behaviors and practices. Not discussing sex or giving incomplete information is doing the adolescents a disservice, so I believe that an Abstinence Plus education is the most comprehensive alternative.

**Essential Services of Public Health**
Project WORTH embodies two essential services of public health: Educate and Evaluate. Their main focus is to educate teens on sexual health practices, STD/HIV, and contraception. However the curriculum also includes important discussions on goals, dreams, sexual pressure and influence. This multifaceted approach has implemented by other public health agencies in select areas around Texas. Dr. Janet Realini is the creator of the BIG DECISIONS curriculum, medical advisor to Project WORTH and my community preceptor. She has taught me the importance of using evidence-based research in programs such as Project WORTH. She constantly evaluates the effectiveness of the curriculum and makes updates accordingly to ensure that everyone is using the most effective approach to teaching teens about sex.

**Links**
Project WORTH  [www.sanantonio.gov/projectworth](http://www.sanantonio.gov/projectworth)
National Campaign to Prevent Teen Pregnancy  [www.teenpregnancy.org](http://www.teenpregnancy.org)
Topic: Teenage Pregnancy

Title: Health Facilitator: “All About Youth” Study

By Stacy Ann George

Public Health Significance
Teenage pregnancy in the United States is a complicated issue that affects health care professionals, educators, families, the government, and teens themselves (Klein, 2005). Surprisingly, teen pregnancy rates are much lower now than previously in the 20th century (Coley & Lansdale, 1998) but the United States continues to have the highest rates in teenage pregnancy among industrialized nations (Phipps, 2008). More than 45% of high school girls and 48% of boys have had sexual intercourse, with the average age for females being 17 and for males 16 years of age (Klein, 2005).

Each year, around 900,000 teenagers become pregnant in the United States and even with the declining rates, more than 4 in 10 teen girls have been pregnant at least once by the time they are twenty years old. Teenagers who give birth during their adolescent years often lag behind their peers who delayed child bearing. These teen mothers will experience many difficulties such as low educational achievement and poverty, poorer psychological functioning, unsuccessful marriages, and a greater number of pregnancies out of wedlock. They are more likely to use welfare, experience instability in employment, and have slightly higher rates of health problems (Coley & Lansdale, 1998; Koniak-Griffin, 2001).

An analysis by Saul Hoffman, Ph.D, published by the National Campaign to Prevent Teen Pregnancy (2006) estimated that $9.1 billion in taxpayers’ money was used to cover the cost of teen childbearing (19 and younger) in 2004 in the U.S. alone. The average annual cost to tax payers associated with a child born to a teen mother aged 17 and younger was $4,080. Texas ranked highest among states in 2004 with the costs of teen childbearing reaching $1 billion dollars. Services associated with these costs include increased health care costs, child welfare costs, incarceration and a loss in revenue due to lower taxes paid and lower earnings by the teen mothers.
Due to the costly consequences, various groups are working to reduce the incidence of teen pregnancy. One of the objectives of Healthy People 2010 (2001) is to promote responsible sexual behaviors. Healthy People Objective 9-7 aims to reduce pregnancies among adolescent females from 68 pregnancies per 1,000 females aged 15-17 to 43 per 1,000. They consider schools as a main source of information for teens. I had the opportunity to work as lay health facilitator with the “All About Youth” Study teaching an HIV/STD and pregnancy prevention curriculum to 8th grade students in Houston Middle Schools.

**Approach**
I attended a week long orientation and actually reviewed the curriculum that I was going to be teaching. During the training we learned about administrative procedures, facilitation skills, classroom management, and had the opportunity to actually teach a lesson for the staff and co-facilitators. I was teaching the second half of a two year curriculum that looked at the effectiveness of risk avoidance and risk reduction programs. In order to verify consistency in teaching methods, I was supervised during various lessons and was given useful feedback. I was involved with four different middle schools, either teaching or helping with computer lessons.

**Findings**
I was able to meet all of my learning objectives that were established before I began my practicum. I was able to teach a risk-avoidance program for middle school students and gain practical experience through application of theory in an intervention. I was able to be a part of an effective intervention project that I really feel gave students the ability to make smart, informed decisions about their relationships and life. There are so many components to developing and implementing an intervention study and I can see why the details are so important when thinking about the validity of the data collected. I am interested to see the data comparing the risk reduction and risk avoidance groups after the study is completed.

**Essential Services of Public Health**
The project I worked on emphasized informing, educating and empowering people, specifically adolescents. Also, the project addressed an essential service of Public Health by researching innovative solutions to the health problems of teen pregnancy and STI’s.
Topic: Uninsured Americans

Title: Health Facilitator: “All About Youth” Study

By Jennifer Mineo

Public Health Significance
The number of uninsured Americans reached 47 million in 2006, which is an increase of more than twenty percent since 2000. The growing number of uninsured individuals is a significant national issue felt deeply at the local level where city and county governments, hospitals and providers try to provide care to patients who have limited or no resources. When care goes uncompensated, providers must find resources elsewhere. Consequently, costs are raised for those who have funding or resources, and soon those individuals who have coverage can no longer afford their insurance, and they too become uninsured. The vicious cycle will perpetuate until changes are made. One proposal of change is a creative financing and coverage option at the local level called the 3-Share Plan. In Galveston County, the 3-share plan is a health benefits program that will be offered to working individuals through their employers. The cost of the health care is shared by three entities- the employer, the employee, and another source such as government or philanthropic funds. This cost-sharing approach allows for monthly premiums to be more affordable, thus improving the accessibility for the working uninsured.

Approach
The focus of my practicum was to develop a qualitative tool to be used to evaluate the Galveston 3-Share Plan. Initially, I partnered with a colleague who will be conducting the quantitative evaluation, and we used a logic model to guide the development of the survey questions. I drafted the tools, presented them to stakeholders, and solicited input in order to make modifications.

Findings
The final product of this practicum is actually the first step in the overall evaluation of the Galveston 3-Share Plan. The initial draft of the evaluation survey has been developed and is under review by stakeholders. This first draft is the basis for the tool that will be used in the evaluation.
Essential Services of Public Health
This project addressed the public health essential service of Evaluating Effectiveness, Accessibility, and Quality of Personal and Population Based Health Services.

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Topic: Youth and Health Indicators

Title: Action for Youth sponsored by Paso Del Norte Health Foundation

By Fernando Sanchez

Public Health Significance
This internship dealt with youth and health indicators related to health outcomes. Partnerships and the foundation met and designated certain categories as priority in terms of how they affected health of youth. Those areas of concern were teenage sex, youth involvement in gangs, and lack of community involvement. I provided the technical assistance in getting the 13 partnerships the demographic and background data to help substantiate what the literature stated on these areas of concern.

Approach
I did a literature review using government based websites as well as online professional journals. I compiled data and wrote a summary on some of the findings as well as present them to the partnerships.

Findings
The literature review confirmed areas of concern for partnerships. The data I presented to the groups confirmed that teenage sex, youth involvement in gangs, and lack of community involvement do affect health outcomes for youth.

Some of the Health outcomes for teenage sex affected youth emotionally, financially, and physically. Teens that get pregnant at an early age could cause physical problems for the mother and the child. Teens are also at a high risk of contracting AIDS or other sexually transmitted diseases.

The main health outcome affected by youth involved in gangs was homicide. Literature revealed that involvement in gangs increased one’s
risk of violent death by 60%. Other areas involved truancy, fighting, vandalism, burglary, assault, and extortion.

Lack of community involvement deals with the adults in the community. What the literature show was that when adults are not involved this affects the health of the youth. The root of this lack of involvement was centered on the area of risk perception. In other words, adults who think, “my daughter does not do drugs because she does not look like a person who does drugs” may harm their own children by not dealing with the reality of what may be actually happening in the lives of their children.

**Essential Services of Public Health**

This program used Health promotion and education aspect of public health to help identify areas of needs, develop strategies to assess those needs, and tools to measure success of program.