Public Health Practice

Stories from the Field
The University of Texas School of Public Health
Student Practicum Experiences
Summer 2015 – DrPH & PhD
The practicum experience is an integral part of the MPH and DrPH curricula. Public health students are provided with the opportunity to apply their classroom knowledge to real world settings through which they make a meaningful contribution to a public health organization.

Under the guidance of a community preceptor and faculty sponsor, students from all divisions gain a deeper understanding of public health practice, interact with professionals in the field, and expand their repertoire of professional skills.

This seventeenth-edition e-magazine showcases student practicum experiences throughout the Summer 2015 semester. (Prior semesters may be accessed through the e-book, a collection of student abstracts and e-magazines describing their experiences.)
Practicum Topics

Serving Size: 1 Practicum per Student
Servings per e-Magazine: 11

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Statistical methods and tools to support equivalence assessment of two drugs

By: Yue-Ming Chen

In clinical trials, the effect of a new test treatment is assessed by testing a superiority, non-inferiority and equivalence hypothesis. The statistical decision is made by either confidence interval based method or test based method. I investigated the duality between hypothesis testing and confidence interval for some special problems of testing in non-inferiority trials and equivalence trials. I derived a test procedure and implemented the proposed method in R. I compared the proposed method with current methods by means of Monte Carlo simulation. The results will be both published in professional journals and internal document for better regulatory statistical practice.

Public Health Significance

To properly assess superiority, non-inferiority or equivalence of a new test treatment and to avoid non-necessary human experiments, FDA sets up a rigorous, multi-step approval process.

Quantitative science plays an important role in the approval process. My intern project arose in the statistical review of drug approvals in FDA.

The proposed methods aim to address the statistical concerns regarding to the appropriateness of using confidence interval of parameter in align with the significance test.

Potential applications of the methods in my intern project include bioequivalence assessment of generic drugs, or biosimilarity of chemical formulations.

Theory Meets Regulation

- FDA judges that a test formulation is bioequivalent or non-inferior to a reference formulation based on quantitative evidence.
- Quantitative science plays an important role in regulatory decision making.

Think Out of the Box

Knowledge learned in the classroom is classical music, but most of the time you meet pops.
Crossover issue in overall survival

Methods to adjust for crossover in overall survival

By: Jin Piao

Under the guidance of biostatistics manager, I worked on assignments in support of clinical trial design, conduct and data analysis.

In randomized clinical trials, control group patients may have the opportunity to crossover to the experimental arm if disease progressed, and the treatment received by patients with crossover becomes a mix of the control and experimental treatments. Methods to remove bias induced by selective crossover are important. Two methods are explored including Rank Preserving Structural Failure Time Model (RPSFT) and Inverse Probability of Censoring weights (IPCW).

The final product I created for practicum site is R programs to implement the methodologies for future POC trials.

Public Health Significance

Offering patients in oncology trials the opportunity to crossover to active treatment at disease progression is a common strategy to address ethical issues associated with placebo controls but may lead to statistical challenges in the analysis of overall survival.

This is closely related to one of the Public Health Essential Service(s) (PHES): Diagnose and investigate health problems and health hazards in the community.

If we analyze the data without adjustment of crossover, we may fail to detect the survival advantage of the experimental treatment if a large fraction of subjects crossed over from control to experimental group. Thus the results might be biased towards the null.

Special events/duties during your practicum

- Work closely with oncology statistician from pharmaceuticals.
- Learn the statistician roles and responsibilities in the clinical trial conduct

Lessons Learned

[OR] Advice for Future Students

- Strong communication skills and team-work spirit are very important for biostatisticians in pharmaceutical company.
Public Health Significance

The primary purpose of phase I clinical trial to estimate the maximum tolerate dose (MTD) that is defined as the dose level at which the probability of dose-limiting toxicity (DLT) is equal to a specified value, say $\alpha$, which usually is around 25% to 30% and varies according to the nature of DLT.

Correct estimate of MTD plays a vital role in clinical trial in that giving a lower dose than MTD diminishes the therapeutic effect while over-dosing is life-threatening instead of curing. This is especially true in cancer phase I trial, where the trial participants at advanced disease stages are probably at last chance in seeking cure.

Statistical Methods in Phase I Oncology Trial

By: Ming Yang

I did my summer practicum (internship) at the Department of Biostatistics at Vertex Pharmaceuticals Inc. located in Boston, MA.

During my practicum experience, I was assigned to work on explore the statistical designs used in Phase I clinical trials to compare the performance among different methods and make recommendations for future use.

I have conducted extensive literature reviews, based on which I wrote computer programs to implement those methods using statistical simulations.

I explored and compared the pros and cons of different approaches and conclusion had been made as when is more appropriate to use which specific method.

Cited from: http://www.forbes.com

Statistical methods in phase I trials

- Literature reviews of statistical methods
- Likelihood-based method
- Bayesian model-based methods

Be comprehensive and complete in designing oncology trials!

- There are many aspects that we need to consider when design a trial also there are many factors need to be balanced when choosing a statistical method that will be used.

Cited from: http://gpdfoundation.com/research/
Establishing a Trauma-Informed Care Collaborative in Harris County
By: Jamie Freeny, MPH

Adverse childhood experiences (ACEs) are stressful or traumatic experiences that can lead to the development of mental, physical, and behavioral health problems in adulthood. ACEs are highest among children in the foster care system and there are over 4000 children in the Harris County foster care system. The trauma-informed care (TIC) framework is a method used to bring hope and healing to those that are dealing with ACEs.

Public Health Significance

The Public Health Essential Service(s) (PHES) that most closely relate to my practicum organization and experience are:

ES #3 Monitor, Inform, Educate and Empower People about Health Issues
ES #4 Mobilize Community Partnerships to Identify and Solve Health Problems
ES #5 - Develop Policies and Plans That Support Individual and Community Health Efforts

DePelchin Children’s Center strengthens the lives of children by enhancing their mental health and physical well-being through services and programs that include psychiatric services, counseling, programs for at-risk youths, parent education, residential treatment, foster care and adoption. Through this project they hope to leverage community partnerships in order to raise awareness and develop protocols that establish trauma-informed care as the main framework of practice.

The picture above is a statue located on the grounds of the DePelchin Children’s Center. Source: DePelchin Children’s Center; http://www.depelchin.org/about-us/

Trauma-Informed Care Consortium of Central Texas

- I was able to attend a Trauma Informed Care Consortium of Central Texas Meeting on April 17, 2015 in Austin, TX.
- I met many of the providers of trauma informed care in the Travis County area.

Advice for Future Students

- The information listed on organizations’ websites is not always accurate or current. The site administrator is a good resource for confirming individuals’ affiliation and contact information.

Collaborative Work. Photo courtesy of Phoenix Talent Schools
http://www.phoenix.k12.or.us/
**Public Health Significance**

This project was important for two reasons. First, although the U.S. Food and Drug Administration (FDA) approved this medication three years ago, uptake has been slow and HIV incidence in Houston has been on the rise. Secondly, MSM still remain the population most affected by HIV infection in the United States.

Regarding the essential public health services, my organization mobilizes community partnerships and action to identify and solve health problems. Furthermore, my practicum experience informed, educated, and empowered people about health issues. For instance, during this project, participants were not simply interviewed but also linked to other organizations that provide needed personal health services, and assured of continuous provision of health care when otherwise unavailable.

**PrEP: Can one pill a day prevent HIV infection?**

*By: Sam Spencer-Darko*

PrEP, an acronym for pre-exposure prophylaxis, is a novel HIV prevention method whereby HIV-negative people take a daily pill called Truvada® to prevent infection. This project focused on PrEP acceptability among adult men-who-have-sex-with-men (MSM) in Houston/Harris County.

My organization, Houston Department of Health and Human Services (HDHHS) used a community partnership approach [e.g. with various community health centers that focus on lesbian, gay, bisexual and transgender (LGBT) health] to recruit eligible participants.

We attracted participants by offering free HIV screening sessions, gift cards and musical concert tickets.

As the principal investigator, some of my duties included educating participants about PrEP use, coordinating the study, data collection, management and analysis.

The final product of this project is an executive report of the study’s findings, to be submitted to HDHHS.

Preliminary study findings indicate that major barriers to PrEP use in Houston/Harris County are: lack of publicity and cost of the pill.

**Special events during the practicum**

- Community outreach to encourage HIV testing in the Bissonnet neighborhood.
- ‘Nicki Minaj Concert’ for the LGBT community (held July 18), at the Toyota Center, Houston.

**Advice for Future Students**

A practicum is supposed to be enjoyable; it is always fulfilling to do a project that you are interested in because it can greatly contribute towards your career goal.

**Bottom line:** Never pick a practicum, or topic, that you have no interest in!

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**Reference**


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**Steps to HIV prevention using PrEP**

Source: www.chasebrexton.org

**PrEPed? Should You Be?**

Source: www.c2ea.org
Impact of D.A.W.N. Services on Self-Management of Type II Diabetes
By: Ladoya Peterson

The management of Type II diabetes can be a difficult endeavor for individuals living with this chronic illness. Treatment includes medication use (oral agents and or insulin), self-monitoring of blood glucose, daily meal planning, and regular physical activity. This project focused on the impact of D.A.W.N. services on diabetes self-management, unhealthy eating, and physical activity in Houston, TX.

My host organization, the Health and Human Services Department of Houston (HDHHS) developed a program called the Diabetes Awareness and Wellness Network (D.A.W.N) to help individuals manage their diabetes.

The D.A.W.N program was designed to provide health education and behavioral interventions for diabetic and pre-diabetic adults, as well as people with elevated risk factors such as obesity. Adults aged 18 years and older who are enrolled in the D.A.W.N. program are designated as participants, and can engage in their own health improvement to become advocates for better health management. Benefits of being a member of the D.A.W.N program include diabetes education classes, access to personal trainers and gyms, and tutorials on healthy food preparation. All members are assigned a social worker, nurse, and a health coach. Additionally, services are free for participating members.

Being the principal investigator, my duties included cleaning data, entering data, and conducting a secondary data analysis.

The final product of this project is a report of the study’s findings, to be submitted to my community preceptor, at HDHHS.

Public Health Significance
This project was important because it helps the D.A.W.N. program to better understand the impact of services offered to their participant members regarding effective diabetes self-management. Consequently, understanding diabetes self-efficacy will help the D.A.W.N program to improve services that are offered to individuals living with diabetes.

My practicum experience is closely related to the essential public health service of “informing, educating, and empowering people” about self-management of Type II diabetes. Additionally, the HDHHS performs the essential services of public health by developing novel programs that aim to prevent acute or chronic diseases. For instance, the D.A.W.N project is about diabetes education and effective diabetes management, but it also assists diabetic patients by referring them to various supplementary health services (in other organizations) that can promote health but are not provided by the HDHHS.
Both volunteering and perceived community connectedness have been linked to positive health outcomes, but little has been done to draw connections between the two. Even less research has been done specifically on lesbians, bisexual women, and transgender men, all of whom belong to underserved and understudied populations. By undergoing this project, both LHI and UTSPH continue their tradition of cutting-edge community-based participatory research with the potential to help people worldwide.

PUBLIC HEALTH SIGNIFICANCE:

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The Project

Over the past year LHI’s CEO, Liz James, and Community Health Practice Doctoral Student, Caitlin V. Neal have collaborated on a research project designed to focus on the lesbian, gay, bisexual, and transgender volunteers who serve the organization and make the health fair possible. Together they asked, what impact does volunteering for LHI have in terms of perceptions of community connectedness? Their collaboration aims to characterize the experience of the volunteers, describe differences in experiences based on sexual orientation and gender identity, measure perceptions of community connectedness and most crucially, determine if volunteering with LHI has changed participant’s perceptions of community connectedness.

Our Strategy

In order to answer these questions, volunteers who assisted during the Spring 2015 health fair will be asked to complete a brief online survey that utilizes a modified measure of community connectedness originally developed for the Urban Men’s Health Study (Stall, 2001). The results will contribute to our understanding of the potential benefits of delivering services utilizing a community-based approach.
As the incidence of chronic disease grows in the United States, and the negative impact of side effects from pharmacological and surgical interventions gain attention, alternative approaches are increasingly being implemented in biomedical settings. Previous research has shown that practices such as yoga relaxation, massage, and acupuncture benefit patients with chronic diseases, and particularly pain, nausea, and anxiety. Yet research on the impact of these programs on patient care and experience remains lacking. This past summer, The University of Texas School of Public Health and the CHI St. Luke’s Health Baylor St. Luke’s Medical Center came together to conduct a research study on CHI St.Luke’s Health’s Integrative Medicine program. Using a qualitative research design, a pilot study is currently underway consisting of hour-long interviews with yoga relaxation patients in their hospital rooms. Thematic content analysis will be conducted to identify concepts which will then be used to help refine structures and themes. These dominant themes will then incorporated into a final paper to be prepared for publication, and shared with the UTSPH and CHI St. Luke’s Health Communities.

Lessons Learned

• Conducting a research project on a compressed time frame can be frustrating; going through IRB approval and working in a hospital setting involves many administrative requirements

• Collecting patient narratives is immensely rewarding—an individual’s story provides perspective, motivation, and passion to drive the work we do to create healthier communities

Preliminary results suggest that the integrative medicine services help patients deal with their disease-related anxiety and ability to cope with their illness, making their hospitalization a more healing experience.

http://www.stlukeshouston.com/OurSer vicces/IntegrativeMedicine/Index.cfm
Public Health Significance

This practicum relates to the Evaluate effectiveness, accessibility, and quality of health services.

The Immunization Partnership voiced the importance of redesigning the IZ Champs. In order to evaluate what components of the project worked and need more improvement, #9 of the Essential Services of Public Health was utilized. The program’s effectiveness was assessed through surveys and information necessary was provided for allocating resources and shaping the project.

The Immunization Partnership has developed community-wide programs to improve immunizations rates using three focus areas: Education, Advocacy and Support of Immunization Best Practices.

The main benefit of implementing an RR system in provider practices is to improve timeliness and completion of immunizations. Participating clinics have been successful at improving vaccination coverage rates by an average of 33% according to a recent annual report by TIP. IZ Champs is proven to be effective when it is implemented and sustained.

Immunization Champion Project

- Was designed to increase child and adolescent immunization rates in four clinics.

- Champions are trained staff members or student interns who are strong advocates for immunization and leads the clinic to successful immunization practices.

- Champions have screened over 50,000 immunization records and recalled more than 14,000 patients to come into clinics for immunizations.

Lessons Learned

When using a web survey software, make sure to do your research in terms of features, capabilities, analytic tools and export file types.

Barriers to increase clinic immunization rates

By: Ana Zangeneh

As an epidemiologist, infectious diseases as well as vaccine preventable diseases (VPD) are routinely investigated. Every year, millions of people die from VPD, and many suffer life-long disabilities.

The purpose of this project was to understand factors and barriers that have facilitated or hindered clinics the sustainability of a reminder and recall (RR) system, part of the Immunization Champion project (IZ Champs) with the Immunization Partnership (TIP).

A survey was developed and administered to clinic staff of 4 participating adolescent clinics. Recommendations were made to reshape the program based on clinic’s responses to improve Tdap, MCV4, and HPV vaccine uptakes within 11-18 year old adolescent.

Most clinics believe they have been successful in maintaining high immunization rates due to IZ Champs, however, major barriers were workflow changes and non-automated systems. Some recommendations include having the champion speak directly to parents and families as well as being part of the clinical staff.

IZ Champs is proven to be effective when it is implemented and sustained.
Analysis of Hospital Readmissions

Practicum Highlights

- Learned about child mental health and the assessment tools used to determine the appropriate level of care placement for children and adolescents
- Conducted an analysis of Clarity’s inpatient readmissions to determine significant differences

Advice for Future Practicum Students

- Choose a practicum aligned with your interests
- Always ask questions
- Be motivated and receptive to feedback
- Remember that working with datasets requires diligence and patience

Predicting Child Mental Health Inpatient Readmissions

By: Norma Garza

My practicum experience focused on a retrospective secondary data analysis of inpatient health records of existing Clarity Child Guidance Center clients aged 3-17 with mental, emotional, or behavioral health disorders.

Clients were divided into two groups, those that had a readmission vs. those that did not have a readmission after initial discharge. Readmissions were analyzed against the Child and Adolescent Service Intensity Instrument (CASII) and the Children’s Global Assessment Scale (CGAS) scores. Both the CASII and CGAS are tools commonly used to assess the level of functioning and care needed by the child. The goal is to examine if the scores can be used as a means to predict readmissions.

My final product consists of a report of significant findings and suggestions for further research.

Public Health Significance

Child mental health disorders are an important public health concern due to their high prevalence and impact in the community.

During my practicum experience, I witnessed how Clarity Child Guidance Center fulfills many of the Essential Public Health Services. Clarity is committed to assuring a competent public health and personal healthcare workforce; inform, educate, and empower people about health issues; and research new insights and innovative solutions to health problems.

Given the high costs associated with inpatient mental health treatment and the CMS penalties related to excessive readmission, my practicum focused on examining a possible relationship between the mental health assessment scores and risk for readmission. The goal is to understand factors affecting readmissions and therapy areas that need attention to improve care and reduce readmission.
Monitoring Chronic Disease

Diabetes in a Changing Healthcare System

By: Kyle Kozlovsky

In the summer of 2015 I worked in the Research and Information Department at University Health System (UHS). UHS is the county hospital in Bexar County, Texas.

Those with diabetes mellitus uniquely need continuity of care. UHS underwent changes in how unfunded patients received care following the roll out of the Affordable Care Act. UHS wanted to know how experiences differed for patients that had to find new funding sources such as the ACA to those that continued receiving funding through the CareLink program. CareLink provides payment plans for unfunded patients with lower levels of federal poverty levels. In order to do this, outcomes for patients diagnoses with diabetes in 2013 were assessed.

I was tasked with collecting data on these individuals and assessing the continuity of care they received following the changes on January 1, 2014.

Special events/ duties/ highlights during your practicum

- IRB exempt status achieved
- Data received from financial and informatics arms of UHS
- Collaboration in order to develop literature on topic

Public Health Significance

The essential service relating most closely to my practicum was monitoring. As UHS changes the way care is delivered in response to a changing US healthcare system, it is important that those with chronic diseases such as diabetes maintain continuity of care.

Another essential service that this project related to was inform, educate and empower. With new information about patient experiences the system can now adjust policies in accordance with the needs that came up in this monitoring endeavor.

Lessons Learned [OR] Advice for Future Practicum Students

All data requests need to be submitted as soon as possible. Hospital system data can be located in many different places and requests can involve several different departments. This is likely true for gathering some federal data that has not been placed publicly on a website.

Also, when you are trying to compare a specific disease or procedure with national level data, be aware of the inconsistency that exists between how different locations determine diagnoses and procedures. For example, be aware of some using ICD-9 codes and now ICD-10 codes and conversions that may be required in order to compare different data.

Getting the data you need can be a race against time you start out losing. SOURCE: http://www.123rf.com/photo_8434986_a-cartoon-person-runs-a-race-against-a-time-clock-on-a-busy-day.html
For more information regarding The University of Texas School of Public Health, Office of Public Health Practice and the practicum program, please visit:

https://sph.uth.tmc.edu/practicum/