

Public Health Practice



Stories from the Field

The University of Texas School of Public Health
Student Practicum Experiences
Fall 2013 – Biostatistics

Prevention diabetes safe kids clean water policy disaster response
cancer adolescent sexual health HIV/AIDS research obesity
alcohol empowerment vaccinations maternal & child health

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 twelfth-edition e-magazine showcases student practicum experiences throughout the Fall 2013 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: 3

Hours per Week per Student	Approximately 12
Campuses (Houston)	1
Division	1

Student

Biostatistics

Serial DTI as a Prognostic Metric for Infants with CHD	Andrew Emerald
Emergency Room Utilization-Data Analysis	Divya Pillendla
Fall Patients in Memorial Hermann	Miao Sun

Serial DTI as a prognostic metric for infants with congenital heart disease

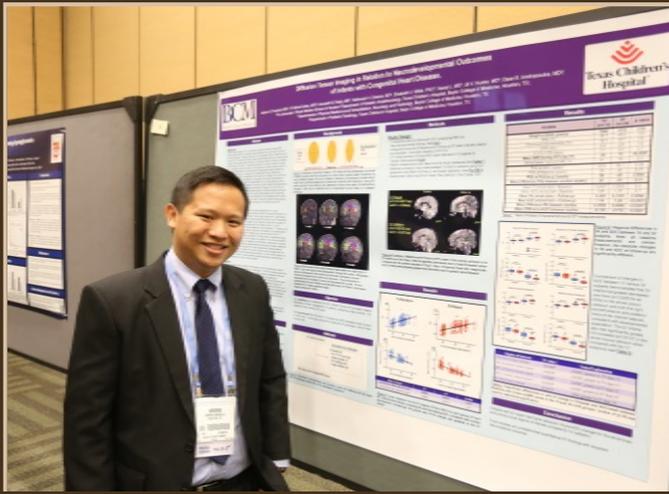


Photo source: Andrew Emerald, FAER MSARF Fellow

**Foundation for Anesthesia Education and Research:
Medical Student Anesthesia Research Fellowship**
Host Institution: Texas Children's Hospital, Houston, TX

BACKGROUND: Diffusion Tensor Imaging is a noninvasive imaging modality that allows researchers to probe the microstructure (i.e. neuronal fiber tracts) in the brain. These tracts develop with age; however, their development may be decreased when physiological impairments exist such as congenital heart disease. Our study was designed to analyze the rate of change (neuron development) in a cohort of infants with congenital heart disease and then tie the results of our findings to neurocognitive outcome testing performed at 1 year of age in hopes of finding a relationship between change in microstructure using DTI and how well infants do on cognitive testing.

FINDINGS: Microstructural change was significantly impaired in patients with single ventricle physiology compared to double ventricle physiology. Analysis of association with neurocognitive outcome is still in progress.

PRACTICUM HIGHLIGHTS

Had the unique opportunity of working alongside clinicians and researchers at a premier tertiary care hospital in the world's largest medical center.

Attended weekly departmental lectures throughout the course of the practicum and eventually gave a departmental presentation/CME-credited lecture on my research.

Attended the annual American Society of Anesthesiologists conference in San Francisco to present my findings in both oral and poster presentation formats at the Medical Student Anesthesia Research Fellowship symposium.

CORE COMPETENCIES INCLUDED

- Epidemiology
- Biostatistics

ADVICE FOR FUTURE MD/MPH STUDENTS

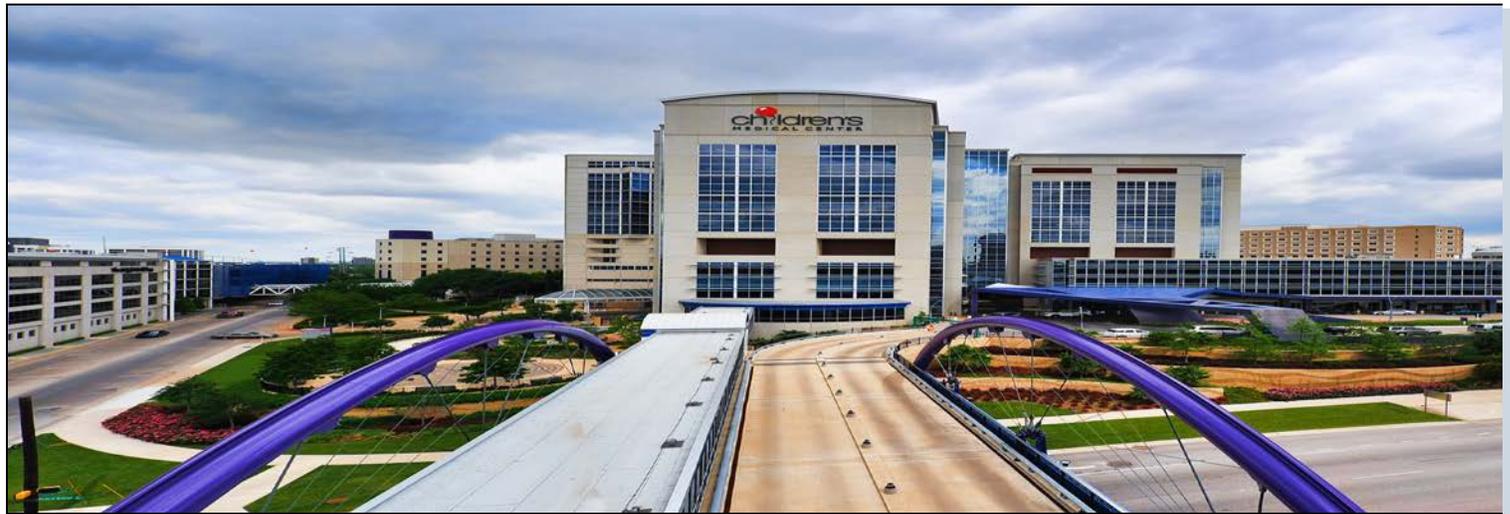
- Be professional, arrive on time, offer assistance
- Come in with an open mind
- Have fun!

PUBLIC HEALTH SIGNIFICANCE

This practicum experience encompassed important public health characteristics such as **diagnosis and investigation, inform and educate, research.**

As a theme, prevention is often preferable to treatment. If DTI proves to be a viable means of predicting neurocognitive outcomes, then programs may be designed to get these children in early intervention programs to improve their outcome and possibly mitigate future impairments due to abnormal heart physiology.

Emergency Room Utilization-Data Analysis



Determining the factors leading to utilization of Emergency Room for Low acuity reasons by Divya Pillendla

This fall, I worked in the Injury Prevention (IP) department at Children's Medical Center located in Dallas, Texas. It is a level one trauma center, which makes it the primary destination for children involved with trauma. While the IP department deals with many prevention efforts. The aim of the hospital is to reduce the use of emergency room for non-emergency medical needs. It is evident that a large number of children who did not

need emergency room services are being treated there as the parents and care givers were bringing them in. I worked mainly on the visit data from emergency room and analyzed it to find the factors that were affecting this unnecessary use of resources. The aim of the analysis is to provide the organization with a report of the factors affecting its utilization. This will be used to provide targeted interventions to redirect the families to better resources for their non-emergency needs.

Public Health Significance

Hundreds of children with routine medical needs are treated being treated in the Emergency Room every month. This leads to wastage of resources that could be better utilized.

Finding the factors causing this behavior and providing them with information to link them to the facilities that are better suited to meet their needs is essential.

The report generated by me during my practicum helps achieve this. It outlines

the emergency room usage patterns based on demographic data (age, sex...), time of arrival of the patient, (business hour vs. non business hours), language, Primary Care Physician (having one vs. not having one) and so on.

Special events/ duties during your practicum

- Participating in "Train the Trainer" and getting certified as a community safety advocate.
- Being able to work on The Trauma Analysis Data

Lessons Learned [OR] Advice for Future Students

Choose a practicum that is in line with your interest and don't be afraid to share your interests and expectations with your Community Preceptor.

Image:

Children's Medical Center
Campus, Dallas
Courtesy: Children's Medical
Center

Fall Patients in Memorial Hermann

Data analysis of fall patients' clinical data in Memorial Herman Hospital

By: Miao Sun

My 2013 fall practicum was working in Memorial Hermann Hospital TMC, department of Trauma. The purpose of this practicum is to find variables related to accidental fall.

The dataset used in this report comes from Memorial Hermann Hospital clinical dataset. The original dataset is from 1/1/2005 to 12/31/2012. The dataset contains 43,233 observations. We checked all observations' mechanism and selected all adult patients (age>=16) whose trauma is related to fall. The fall adult data set contains 8018 observations.

My responsibilities:

Designed Access database form
Made data management
Analyzed data with SAS 9.2
Made forms and plots with Excel Sheet
Prepared reports

My final products:

I did many descriptive and predictive analysis including t-test, chi-square, and linear regression.

I found many interesting questions for further study.

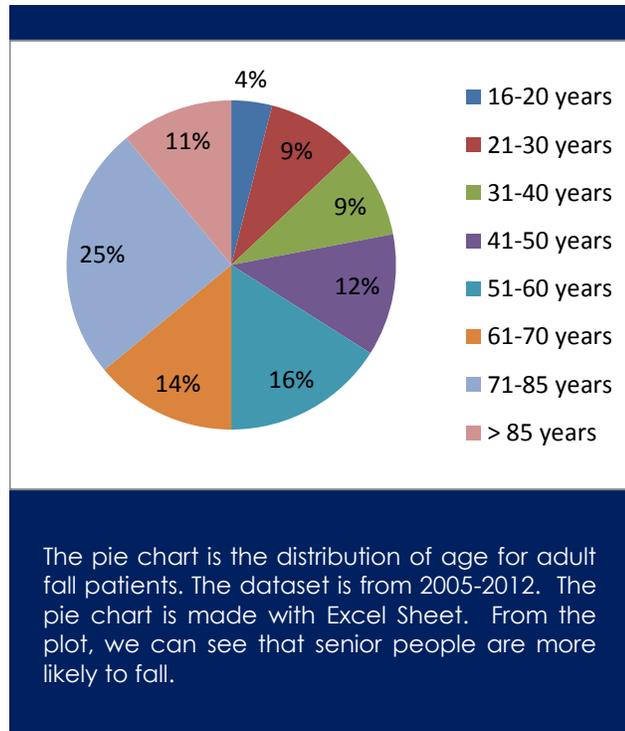
I made several reports to demonstrate my findings.

Public Health Significance

Monitor: we used clinical dataset to track trauma patients' status in Houston area.

Evaluate: we did data analysis of clinical fall patients' dataset to evaluate their mechanisms of fall.

Research: we used research methods and advanced analytical skills to find variables related to fall's happening. These findings can be used in future intervention program design.



Highlights:

*Used various models and tools learned from school.

*Work may contribute to design of fall prevention intervention program.

*Study found several variables significantly related to accidental fall.

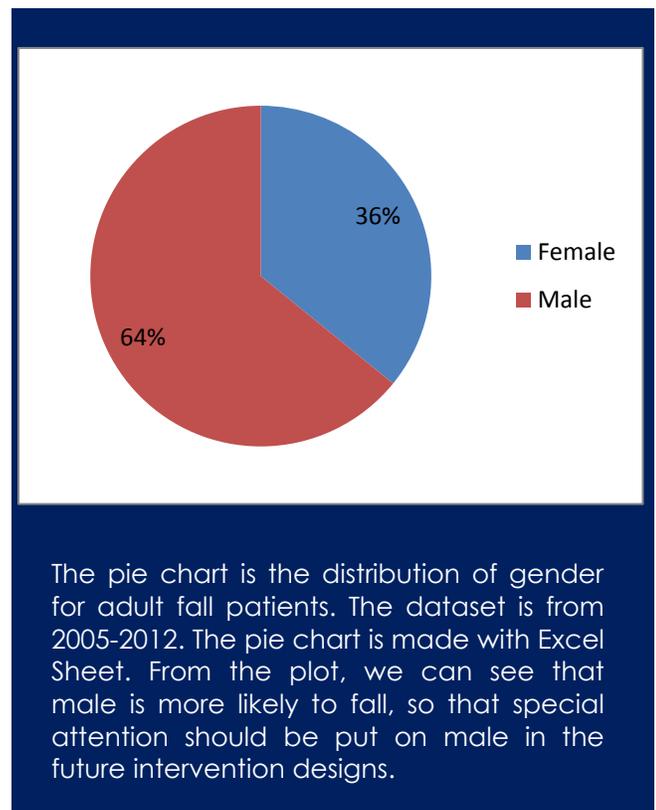
Lessons Learned

*Check outliers before data analysis.

*Make work log to track work.

*Practicum can be very helpful for your future career!

*It is a good opportunity to practice English for international student!



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/>