Public Health Practice

Stories from the Field
The University of Texas School of Public Health
Student Practicum Experiences
Summer 2015 – Biostatistics
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

**Number of Students:** 2

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<th>Hours per Week per Student</th>
<th>Approximately 12</th>
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<tr>
<td>Campuses (Houston)</td>
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<td>Department</td>
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### Biostatistics

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<td>Spinal Cord Injury Patient Recovery</td>
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Spinal Cord Injury Patient Recovery

Improving Analysis Methods of Spinal Cord Injury Patients

By: MAXINE OLEFSKY

This summer, I worked with Dr. Leif Peterson, the Core Director of the Center of Biostatistics at the Houston Methodist Research Institute. In collaboration with Dr. Robert Grossman, an esteemed neurosurgeon at Houston Methodist, I worked on analyzing spinal cord injury data from the EMSCI patient registry, a European database of spinal cord injury patients.

Some drugs are being used in clinical trials on spinal cord injury patients and patient recovery is being studied. The EMSCI dataset has good follow-up and by looking at patient recovery with the standard-of-care treatment, we can better understand where recovery naturally occurs, establishing some sort of baseline recovery.

We worked to see if there was a way to better present important results from the EMSCI dataset so that physicians could efficiently understand what was inherent to the data set, as well as figuring out an alternative way to pinpoint exactly where recovery occurs in patients. A small gain in the UEMS (upper extremity muscle score) translates to a notable difference in the patient’s motor abilities, thus affecting and improving their quality of life.

Using Stata, I ran statistical tests on the EMSCI data, created custom graphics, and ran data simulations. We were able to see where the muscle group recovery occurred at a more specific level. Clinical trial design can be improved by identifying where recovery occurs at different spinal cord injury levels, and tools to measure muscle grip and strength can be further modified to further improve the UEMS measurement scale during diagnosis.

Lessons Learned [OR] Advice for Future Students

• Don’t be afraid to ask questions!
• Meet with your community preceptor and faculty advisor on a regular basis to discuss your practicum progress, but also to talk about life, career advice, and anything else!
Practicum Highlights

- Focus on community health needs assessment in Houston area.
- The distributions of disease categories from hospital discharges of SLMC were analyzed using SAS.

Advice for Future Practicum Students

Plan carefully with your preceptor and participate actively in practicum activities. It’s also important to consult with other experts in workplace.

Community Health Needs Assessment in Houston Area

By: Wei Wang

My practicum project focused on addressing the community health needs around Houston area by collecting and analyzing the existing patient discharge data from the hospitals of St. Luke’s Medical Center (SLMC) from 2012 to 2014.

As a MPH biostatistical student, my main duty was on data analysis in this project.

SAS software was used in the analysis. Initially, the demographic information including gender, age, race etc. was obtained. Then disease distributions from hospital discharges were analyzed based on ICD-9 codes. Furthermore, distributions of common diseases like stroke, cancers, hepatitis C were summarized.

From the analyses, top disease categories were sorted out. Thus the priorities of the community health needs become clear. The income and health disparities are really the issues existing in this diverse community.

Public Health Significance

Because the project was about community health needs assessment, it is closely related to the essential public health services. Some of the essential public health services directly or indirectly involved in the project are: 1) Monitor health status to identify and solve community health problems. 2) Diagnose and investigate health problems and health hazards in the community. 3) Inform, educate, and empower people about health issues. 4) Mobilize community partnerships and action to identify and solve health problems.

Community health needs assessment is important to enhance public health. For example, from the analyses, we have a comprehensive understanding of what diseases are the most commonly occurred ones and the likely reasons for the occurrences, we can therefore take appropriate actions to tackle on the issue and improve public health.

As an essential member of the largest medical center in the world, St. Luke’s hospital greatly contributes to public health by taking care of its patients.
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/