

Public Health Practice



Stories from the Field

The University of Texas School of Public Health
Student Practicum Experiences
Summer 2015 – 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 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

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

Student

Biostatistics

Spinal Cord Injury Patient Recovery	Maxine Olefsky
Community Health Needs Assessment	Wei Wang

Spinal Cord Injury Patient Recovery



Source:
http://clinsmart.com/?page_id=387

Duties during your practicum

- Review literature on previous clinical trials on spinal cord injury patients
- Communicate effectively with Dr. Peterson and Dr. Grossman, being able to discuss the work with different audiences
- Attend weekly meetings to discuss findings and present new graphing methods

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

Public Health Significance

My summer practicum addressed the 10th Essential Public Health service: Research for new insights and innovative solutions to health problems.

Previous research on drug effects on spinal cord injury patients often focus on the total UEMS gain over a period of time. Though useful, recovery can differ from segment to segment, so discussing a total UEMS change in patients is dilutes some recovery specific to certain segments. Certain muscle groups might be more sensitive to the drug, thus recovering more than other

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.

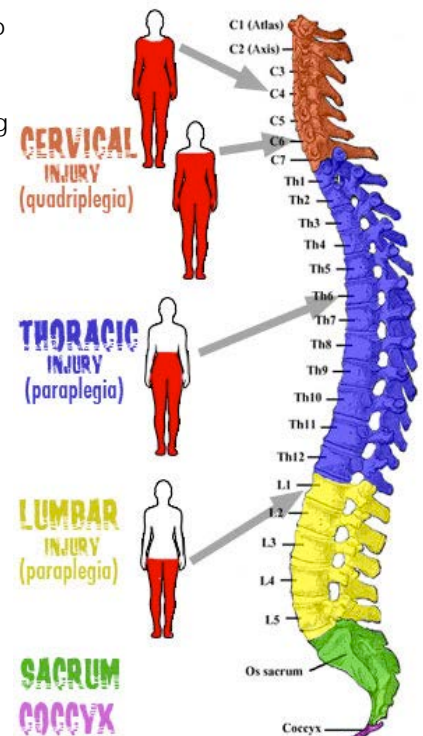
muscle groups.

By establishing a baseline level of recovery, predictions can be made in clinical trial design in how patients with certain types of injuries might recover when using specific drugs.

By studying muscle group recovery more in depth, future research can be done to improve the treatments for spinal cord injury patients by identifying where recovery is most likely to occur and how effective the drug is in those that are predicted to be most responsive.

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!



How injury location affects muscle use in the body

<http://www.innovationsstemcellcenter.com/patient-education/adult-stem-cells-for-spinal-cord-injuries/>

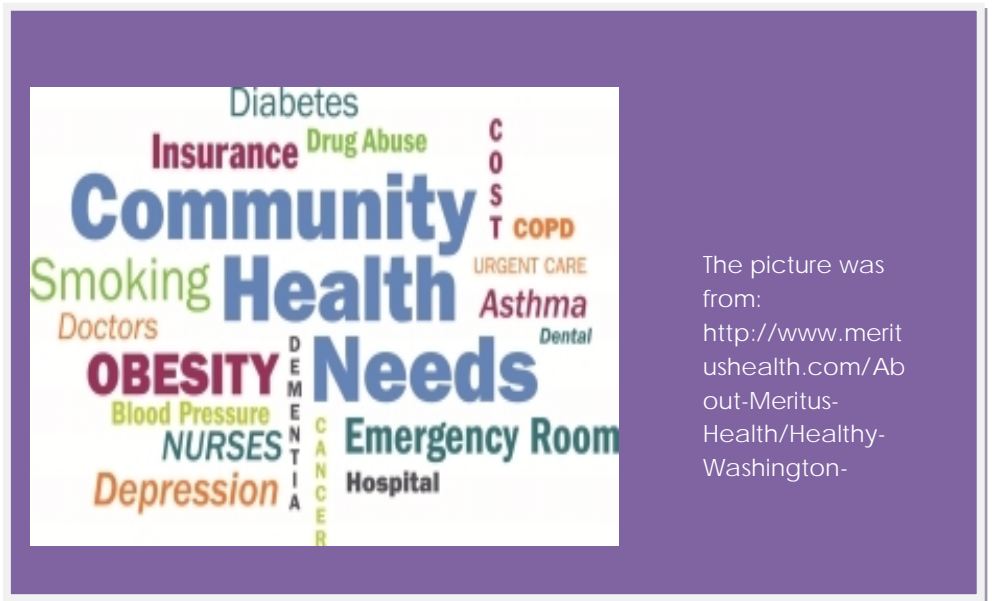
Community Health Needs Assessment

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 Wana

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

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.

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.

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/>