Public Health Practice

Stories from the Field

The University of Texas School of Public Health

Student Practicum Experiences

Fall 2014 – 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 fifteenth-edition e-magazine showcases student practicum experiences throughout the Fall 2014 semester. (Prior semesters may be accessed through the e-book, a collection of student abstracts and e-magazines describing their experiences.)

UTHealth | School of Public Health
The University of Texas
Health Science Center at Houston

Practicum Topics

Serving Size: 1 Practicum per Student
Servings per e-Magazine: 2

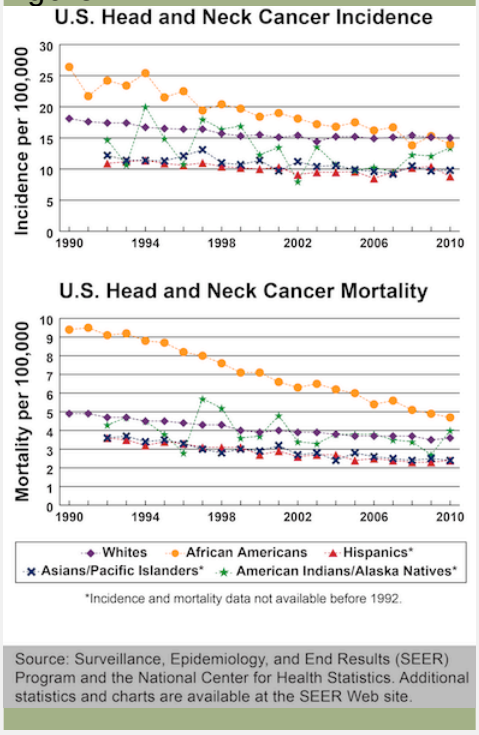
Hours per Week per Student	Approximately 12
Campuses (Houston)	1
Division	1

Biostatistics

	Student
Secondary Primary Malignancies	Winston Chan
Turning Cancer data into Discovery	Weiqin Liao

Secondary Primary Malignancies

Figure 1.



Prediction Model for SPM in HNSCC Patients

By: Winston Chan

Head and neck cancer is the 6th most common malignancy in the world. Despite new treatment methods for head and neck cancers, 5-year survival has not dramatically improved. One main reason is the development of a second primary malignancy (SPM) that occurs quite often in head and neck cancer patients than cancers of other sites. Using the SEER-Medicare linked cancer database, a study cohort was created to determine a risk prediction model for a SPM in Head and Neck Patients. The SAS statistical programming software was primarily used to analyze our cohort and conduct a logistic regression on our data. The results of the regression are shown in figure 2 below. At the end of the practicum a scientific poster was created to show our findings to be presented to all MD Anderson staff as well as all summer Trainees.

Memorable Experiences

- *Presented a poster and gave an elevator speech on my topic open to all MD Anderson Employees*
- *Conducted several career interviews with people in my profession to learn about what life is like as a biostatistician*

Public Health Significance

Most of the work conducted at my practicum revolved around the assessment portion of the essential public health services. This is done primarily through monitoring and investigating. As mentioned above, we looked primarily through the SEER-Medicare linked cancer database for our patient cohort to determine a risk prediction model for SPM. This also helped to evaluate current treatment methods of dealing with head and neck cancer. We attempted to find if treatment methods such as radiation vs. surgery had any effect on the chance of developing a SPM. This serves as an assessment of yet another essential public health service through the evaluation of health services, as well as ensuring doctors and patients can make the best informed decision when treating head and neck cancer.

Advice for Future Practicum Students

Don't be afraid to talk to people in your field no matter how important they may be. They often love sharing tips to young aspiring students who take the initiative to learn.

Discussion of Results

As expected from the literature review, tumor site, and tumor stage were significant risk factors of developing a SPM. What proved interesting is the fact that treatment with chemotherapy proved to be highly significant, whereas treatment through surgery was not.

Figure 2. Stepwise Logistic regression* results

Effect Entered	DF	Number In	Score Chi-Square	Pr > ChiSq
Year of diagnosis	17	1	493.3495	<.0001
Chemotherapy	1	2	181.4689	<.0001
Stage	3	3	171.0076	<.0001
Age	3	4	78.9741	<.0001
Region	10	5	81.2058	<.0001
Charlson Comorbidity	2	6	17.9265	0.0001
Race	2	7	15.2239	0.0005
Sex	1	8	9.3104	0.0023
Education	3	9	12.2456	0.0066
Radiation	1	10	4.2792	0.0386
Tumor Site	3	11	5.7420	0.1249
Marital Status	2	12	3.7965	0.1498

*slentry=.15 slstay=.2
**Variables not in final model: Surgery, Poverty Status

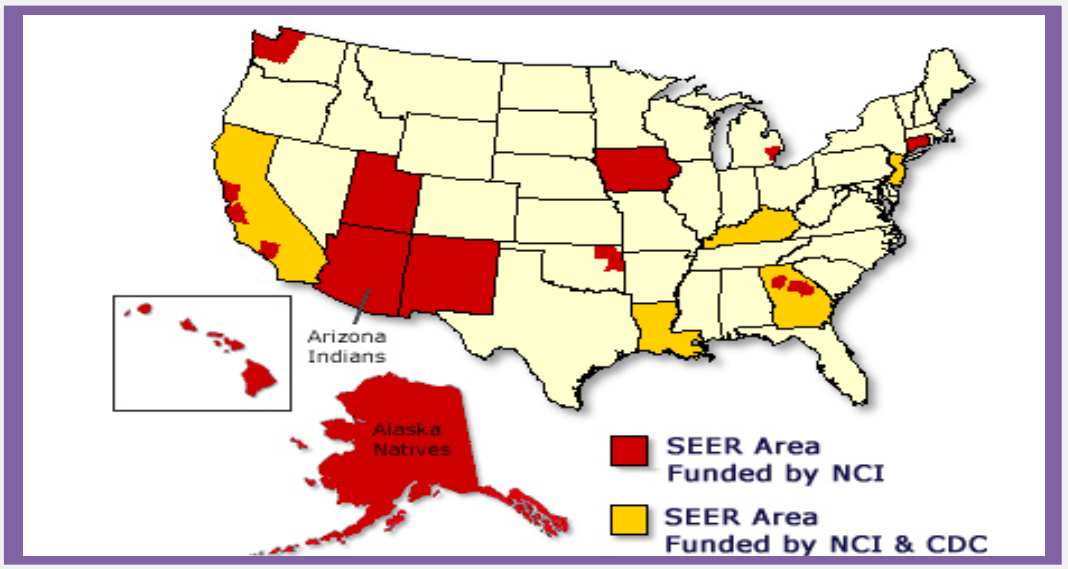
Turning Cancer data into Discovery

Practicum Highlights

- Practicing and Improving my SAS skill in practical problems

Advice for Future Practicum Students

- Learning a skill is a long process, be patient and confident
- Asking for help from your preceptor and other colleagues , they are your best teachers
- Don't be afraid of making mistakes



Source: *http://seer.cancer.gov/registries/*

Data analysis for breast cancer of SEER Program

By: Weiqin Liao

I am doing my practicum with Dr. Zhao in the Department of Health Service Research at M.D Anderson Cancer Center this Fall Semester. The work I have done here mainly focuses on doing data analysis for breast cancer data using data obtained from SEER research data (http://seer.cancer.gov/data/).

My final product is a summary report of demographic characteristics and cancer treatment distributions in breast patients – aged 65 and younger vs. above 65 years in SEER data from 2006 to 2011.

My responsibilities are: 1) Familiar with data structure, variable names, variable coding, ICD-O-3 cancer sites, and ICD-O-3 history types in the SEER data. 2) Attend the analysts' seminar. 3) Conduct descriptive statistical analysis using SAS

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Public Health Significance

The Surveillance, Epidemiology, and End Results (SEER) Program funded by the National Cancer Institute and CDC collects and publish data on cancer incidence and survival throughout the United States started 1973.The information from population-based cancer registries covers approximately 28 percent of the US population. The goal of this program is to help the researchers get information to investigate the risk of cancer.

The Public Health Essential Service that most closely relates to my practicum is "Monitoring Health to Identify and Solve community Health Problems". My project is using statistical methods to identify factors associated with breast cancer.

My host organization, Department of Health Service Research, contributes to public health by conducting innovative and high quality research in health care, health economics and effectiveness.

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/