Public Health Practice

Stories from the Field
The University of Texas School of Public Health
Student Practicum Experiences
Summer 2013 – Environmental & Occupational 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 eleventh-edition e-magazine showcases student practicum experiences throughout the Summer 2013 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: 9

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## Environmental & Occupational Health

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FQHCs and Emergency Preparedness

Practicum Highlights

- Identify current need for preparedness planning amongst Harris County FQHCs
- Research importance of preparedness planning and current planning tools
- Develop tools and provide technical assistance for FQHCs implementing tools
- Collaborate with community organizations to gain resources for project

Advice for Future Practicum Students

- NETWORK! NETWORK! NETWORK!
- Don’t be afraid to talk to people at workshops or meetings—exchange information! This will help you develop relationships with important community stakeholders that can help further your project and career.

Providing FQHCs technical assistance with implementing an emergency management plan

By: Elyssa Berg

Federaally Qualified Health Centers (FQHCs) have a unique responsibility to the community because they act as safety net providers for vulnerable populations. As an integral part of the health care system, health centers are critical in delivering services and assisting the community during emergencies.

In order to do so, health centers must be prepared for these situations through planning and training. This project focused on helping FQHCs develop and implement an emergency management plan to be more responsive to the community during emergency situations.

I was mainly in charge of researching current emergency planning tools, contacting FQHCs in Harris County, attending workshops, and providing technical assistance to the FQHCs.

Public Health Significance

This practicum experience was important for the Public Health. The Essential Public Health Services it mainly addressed included diagnosing and investigating a health hazard, educating organizations, mobilizing community partnerships and developing policies and plans.

This project involved gauging the current level of preparedness of each FQHC and diagnosing the need for the emergency preparedness project. After gauging their interest, I educated the FQHCs about the importance of implementing an emergency preparedness plan and how crucial it is for the community. I mobilized community partnerships between the UTSPH and these FQHCs, along with several other city organizations like the Medical Reserve Corps and Harris County Public Health and Environmental Services department. Lastly, I helped these organizations develop policies and procedures to enact during an emergency.
Improving Electronic Medical Records for Rural Haitians

By: BRIAN BERRETT

I have been working with an organization called the Haiti Health Initiative (HHI) to improve their electronic medical record (EMR) system and patient data tracking. HHI conducts bi-annual trips to a rural village in Haiti where they provide medical, dental, and agricultural assistance.

I was specifically in charge of improving their EMR system, finding ways to improve patient data tracking, and creating health information cards. Funding and maintaining a complex EMR was impractical with the resources currently available to HHI. As such, an excel database utilizing macros and advanced filtering was utilized. Health information cards with unique patient ID numbers will be distributed on the next trip. The excel database will improve patient tracking and reduce record duplication.

Public Health Significance

This project will help HHI to correctly monitor health status of Haitians and to identify community health problems. Improving the EMR System and creating health identification cards were needed to help reduce patient duplication and to better monitor the health status of their patients.

HHI has been improving the health of rural Haitians by providing them with medical, dental, agricultural, and educational assistance. One example of a great intervention is their giving Vitamin A and Albendazole (an anti-parasitic medication) to improve the hemoglobin counts of children under five. They need to know if their intervention is effective and to monitor the health status of their patients but have been unable to effectively do so because of difficulties in correctly identifying return patients.

With the improved EMR system and printed health information cards they will be able to evaluate the effects of their interventions, decrease record duplication, and better monitor patients’ health.

Special events/ duties during your practicum

- Researched EMRs used in Haiti and other developing countries
- Identified the strengths and weaknesses of the current data tracking system of HHI
- Created health information cards to correctly identify patients
- Improved the EMR system in a way that is functional but user friendly and low maintenance

Lessons Learned and Advice for Future Students

- Talking to experts from a wide variety of backgrounds and digging deeply into a subject can help you to uncover solutions to problems that once seemed impossible to solve.

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Brian Berrett - Brian.J.Berrett@gmail.com

Photo courtesy of DeborahPhotography (Deborah Berrett)
Essential Summer Safety

Practicum Highlights

- Inspections of temporary food vendors at the many cultural festivals in Downtown Houston
- Apartment complex swimming pool inspections

Safety Inspections of Food Establishments and Swimming Pools

I have spent the summer observing Health Inspectors/ Sanitarians for the City of Houston Consumer Health Bureau complete routine inspections of various food establishments and pools. Establishments include restaurants and vendors with temporary food permits, as well as spas and swimming pools throughout the City of Houston. Although inspections are completed year round, it is of extreme importance in the summer months when citizens are out frequently enjoying festivals and swimming to cool off on hot days.

Inspectors play an important role in ensuring vendors have valid permits, and proper hand washing and sanitizing stations set up. Verifying proper holding temperatures of food that can be potentially hazardous if mishandled is also essential. Swimming pool inspection is necessary & important to summer safety. Proper chemical levels, fence maintenance, signage, safety valves & pump releases ensure that vulnerable populations like children can safely enjoy swimming and can help prevent unfortunate submersion.

Public Health Significance

Food establishment and swimming pool inspections relations to the Essential Services of Public Health that involves enforcement of laws and regulations that protect health and ensure public safety.

As an important aspect of safety inspections, Sanitarians take the time to educate and explain the importance of what they look for during inspections, and offering suggestion to ensure and maintain regulation compliance.

Advice for Future Practicum Students

- Choose a practicum closely related to your area of interest and start as early as possible.

Improper food handling courtesy of CHB

Water clarity issue and non-compliant fence resulting in a pool closure. Courtesy of Consumer Health Bureau
Pharmaceuticals & Personal Care Products (PPCPs) in Water

Using Analytical Methods to determine low concentrations of PPCPs in water

By: Laura Espinoza

During my time at the EPA Region 6 ESB Laboratory, I primarily worked with Johnson Mathew, a senior scientist/chemist, by using high performance liquid chromatography (HPLC) combined with tandem mass spectrometry methods to analyze minute amounts of PPCPs in water samples.

I first researched the EPA’s current methods to determine low concentrations of PPCPs through multiple literature sources. I also learned the correct way to prepare standards of both specific pharmaceuticals for the HPLC method and formaldehyde using a separate passive air sampling analytical method.

Overall, this experience has taught me the specific analytical methods the EPA uses to determine the concentration of multiple chemicals in public water and air sources.

Public Health Significance

The work done at the EPA’s ESB laboratory helps to directly monitor chemical concentrations in the environment to identify potential community health problems; one of the Essential Services of Public Health.

Should a potential health problem exist, scientists at the lab can further evaluate the issue and pass this information to other departments within the EPA and possibly lawmakers.

This chain of events can be used to potentially develop and enforce helpful laws and regulations that protect health and ensure safety.

PPCPs comprise of thousands of chemical substances which have been detected in the nation’s water bodies. Research has suggested that certain drugs are causing ecological harm though scientists have found no evidence of adverse human health effects from PPCPs in the environment.

The EPA is at the forefront of improving the techniques to detect and quantify these chemicals, in order to better determine if they have any further effects on environmental and human health. In particular, the work done in this lab is contributing to this important issue.

Special events/duties

- Interacting with EPA staff and learning from their careers and experiences.
- Using laboratory techniques to prepare samples and analyze their results with high performance liquid chromatography equipment.

Lessons Learned

- Don’t be afraid to ask questions if you don’t understand something; this can help you perform your job better and be quicker for both you and your preceptor.
- Listen. Employees at your site many times come from different professional backgrounds and have a lot of experience to learn from.

Running tap water.
Source: http://safechemicalpolicy.org/chemicals-and-health-in-perspective/
Public Health Significance

The focus of my practicum experience was on assuring a competent public health and personal healthcare workforce. By communicating the gaps in competencies between Biological Safety and Infection Prevention, both UT Physicians and Biological Safety, corrective actions can be taken to ensure:

1. **Reduction of disease by providing knowledge to employees on personal protection and proper handling of biological materials.**
2. **Reduction of disease by providing knowledge to employees on proper disinfection applications, especially for devices specific to clinics.**

Comparing Competencies: Biological Safety and Infection Prevention

By: Kristin King

UT Physicians is the medical group practice for the UT Medical School at Houston. This working relationship facilitates the common goal of bridging the gap between basic sciences and practical applications in clinical applications. This is an advantage for researchers in fields such as gene and cell therapy, which can have direct clinical applications. In settings where the “research to practice” continuum is being bridged, special attention must be paid to the protection of patients and workers. In some cases, research facilities with established safety programs may assign the role of infection prevention in outpatient clinics to the biological safety program. But a biological safety professional’s orientation may not be in concordance with infection preventionists. By objectively comparing the established competencies of these two professions, it was determined that while they both serve to prevent infectious disease, biological safety focuses on worker safety, whereas infection prevention focuses on patient safety. While common competencies such as hand hygiene were noted, an opportunity for targeted education activities to bridge the competency gaps were identified as:

1. Infection prevention professionals could recognize proper applications of disinfectants, worker exposure hazards and safety precautions, proper handling of biohazards, exposure control and emergency procedures.
2. Biological safety could recognize the need for environmental monitoring, outbreak investigation to assess proper control measures, unique devices such as endoscopes that require specific disinfection procedures, and recall of supplies.

Lessons Learned

A main focus of current biomedical research is using biological materials as novel therapeutics options, such as gene, cell, and plasma therapies. As this work evolves, the biological safety profession will plan a more significant role in review and monitoring of associated clinical trials to ensure worker safety, as well as protection of patients from the specific risks associated with the therapy. Just as the medical practice and laboratory research fields are collaborating to accelerate the use of biomedical research findings, the two fields of Biological Safety and Infection Prevention will have to synchronize activities and expertise to prevent disease.
Public Health Significance

My practicum experience related to the following Essential Public Health Services: Monitor, Inform and Educate, Mobilize, Diagnose and Investigate, Develop Policies and Plans. One of my main practicum objectives was to monitor workers for exposure to chemical and physical hazards. Based upon the monitoring results, I then informed and educated the workers that I monitored along with their supervisors of the final results. BP contributes to public health by putting the necessary resources in place to ensure they can appropriately address workplace hazards, thereby creating a safer working environment.

My Experience as an Upstream Industrial Hygienist

By: Brandon Marrow

During my summer practicum with BP, I had the opportunity to visit multiple field sites to help monitor and evaluate potential personal exposure to hydrocarbons, H2S, noise, NORM, and mercury during routine work activities. I was then responsible for submitting a final report to management and personal exposure monitoring letters to all employees involved with our exposure evaluation. I was in charge of ensuring all industrial hygiene instruments were maintained, serviced, and calibrated per the manufacturer’s requirements. Another summer goal was to review the new OSHA standard in order to help update BP’s NAG Hazard communication practice.

Working on produced condensate tanks may result in exposure to BTEX and H2S.


Special events/ duties during your practicum

- Conducting personal monitoring for BTEX and H2S at well sites in Wamsutter, Wyoming.
- Conducting noise surveys for well sites in Dumas, Texas

Advice for Future Students

- Over the course of my practicum, I found it helpful to maintain detailed records so I could easily recall information at a later date. This was most beneficial when writing formal industrial hygiene reports.
Public Health Significance

The public health significance of my practicum included investigating health hazards, enforcing regulations that protect health, and informing workers about health issues.

I helped to investigate health hazards through air monitoring, to determine the presence or concentration of chemicals in the air, and through testing drinking water for lead and copper.

I conducted respirator fit tests which will help protect medical personnel against exposure to infectious diseases such as tuberculosis. I also participated in safety surveys which helped to enforce university and state/federal rules and regulations that protect employees from chemical spills and exposure, slips, trips, and falls, and ensures a safe working environment.

Finally, the ergonomic surveys I performed helped inform university employees about the long term consequences of using improper posture while working, which can cause unnecessary harmful forces on the body. The recommendations and modifications that were made from the surveys will help improve employees’ long term health.

Industrial Hygiene at UTHealth

UTHealth’s Chemical Safety Program

By: Tracy Mejeoumov

My practicum was located in UTHealth’s Chemical Safety Program which is part of the Safety, Health, Environment, and Risk Management department of the university. The Chemical Safety Program is responsible for providing support in the recognition, evaluation, and control of chemical and physical hazards.

UTHealth has hazards that are unique to the laboratory and clinical setting. Whether it’s working with a carcinogenic chemical in a lab or using an x-ray machine in the hospital, everyday employees are at risk for the potential exposure to chemical, biological, and radiological hazards. Due to this, I had a lot of variety in my job and was able to gain experience in both safety and in industrial hygiene. Some of my duties included air monitoring of labs and offices, testing drinking water fountains for metals, conducting respirator fit testing on medical personnel, conducting ergonomic assessments for office personnel, and assisting with laboratory safety surveys.

Special events/duties during your practicum

- Conducting respirator fit testing for medical students
- Learning how to safely and properly clean out a laboratory.

Advice for Future Students

- Be selective in choosing a practicum and make sure that it is in the specific industry you want to work in after graduation.
- When searching for a practicum, ask your advisors and professors about opportunities, use university resources, general online searches, and attend local professional/industry meetings.

Summer 2013 • Tracy Mejeoumov • UTHealth Environmental Health and Safety • Industrial Hygiene
Workplace Violence and Crime

Practicum Highlights

Crime and violence in the workplace has become a significant public health concern especially on college campuses. To help students, faculty, staff and visitors better understand what they can do to prevent crime and protect their safety, the content for a basic safety and security orientation video was developed.

Lessons Learned

The issue of workplace crime and violence encompasses a wide breadth of issues, so the challenge presented during this practice was to make decisions to reduce the content to a manageable amount of information, so that it could be effectively portrayed in a 5 to 7 minute video.

Consideration also had to be given the sensitivities of certain issues, so as not to cause undue alarm and inadvertently increase in apprehension among the viewers.

A Novel Safety and Security Orientation Video

By: Krisztina Nemeti

The content for a brief safety and security training video was created in cooperation with the University of Texas Police Department. This video also contributes to the UT Police Department accreditation objectives from ICLEA by providing unique means of training. When the filming for the video is completed, the product will be unique that;

(1) all of the elements covered are evidenced based, in that they are created by local crime statistics and

(2) the video instruct people on what they should or can do to prevent crimes, rather than describing what the police force does.

A follow up evaluation tool was also developed based on the Kirkpatrick-Phillips Model to be distributed to the viewers (after watching the video) 15 days to determine if the information delivered actually resulting in any changes in behavior both at work and home.

Public Health Significance

If we take the 10 essential public health rules my assignment falls into the “inform educate and empower” category.

According to the Bureau of Labor Statistics, for the years 2003 to 2010, 63% of occupational injuries and illnesses resulted from workplace violence. ([http://www.cdc.gov/niosh/topics/violence/](http://www.cdc.gov/niosh/topics/violence/)) To underlying objective of this exercise was to develop an educational tool that would permit individuals to prevent violence and crime before it occurs. It is hoped that upon review of the data collected from the post course assessment tool that individuals will not only apply prevention techniques in their place of work, but will also use the knowledge in their homes and will share it with their neighbors, thus having a community-wide impact.

Education and training is the core of Public Health because this is the essential tool how public health professionals communicate to the community. Public Health has a major role in prevention and the most important device to get the desired result is informing educating, and empowering people.
Public Health Significance

The essential public health services that most closely relate to my position are diagnose and investigate health hazards, inform and educate people about health issues as well as develop policies and plans to support health within the workplace.

The noise monitoring and silica sampling that I planned and implemented were a way to investigate health hazards.

The reports and notification letters that I wrote and distributed were to inform and educate employees about health issues.

The health hazard profiles that I developed are essentially policies that must be followed to protect workers health.

Industrial Hygiene Internship with Baker Hughes

By: Joseph Prescott

Who: all Baker Hughes employees

What: assess potential workplace health hazards

When: June, July and August

Why: to provide a working environment free from occupational hazards

How: through noise and air sampling, evaluation of previous findings, publishing of health hazard profiles and consultation with other Baker Hughes Health and Safety staff.

I worked on noise monitoring at a variety of facilities, silica monitoring at pressure pumping sites and control banding of hazards at a wireline, evaluation and motor facility.

I was responsible for planning, implementing and reporting on noise and silica sampling projects. I was also responsible for the writing of health hazard profiles.

Highlights

• Planning and carrying out my own sampling
• Learning the trade from Baker Hughes staff as well as IH consulting firms

Advice for Future Students

Be confident and take advantage of every opportunity for field experience
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/