Civil-Military Operations During Operation Iraqi Freedom

by Ann Peden, REHS

Ann Peden is a Captain in the U.S. Navy Reserve, Medical Service Corps. She was mobilized in February 2003 with the Marine Corps 3rd Civil Affairs Group in support of Operation Iraqi Freedom. Ann recently retired from the Navy with 24 years of service. She currently works for Santa Clara County Department of Environmental Health in their Consumer Protection Division. The following is a narrative from her presentation at the 2005 CEHA AES in Monterey.

We were ordered to report at midnight for an 11:30 am flight the next day. Eleven hours seemed excessive even by military standards, but this was no ordinary flight. My reserve unit was finally leaving for war. After months of waiting and numerous false alarms, we were leaving for Kuwait. The date was March 16, 2003.

It was a miserable night – dark, pouring rain, and cold. We stood in line wearing our Gore-Tex raingear, waiting to be issued our weapons. It was a miserable night – dark, pouring rain, and cold. We stood in line wearing our Gore-Tex raingear, waiting to be issued our weapons. The irony was a captain in the military giving Saddam Hussein and his sons 48 hours to get out of Iraq. We knew the war would start soon.

I arrived at Camp Commando under dark of night. It was pitch black. My seabags were unloaded outside my tent. Everything I would need for the next year was in two seabags. The tent was dark inside, everyone was sleeping. One woman groggily got up and said to come back in the morning when they could find an empty bunk.

When dawn broke, few of us knew where we really were. After a brief orientation, it turned out Camp Commando was approximately 30 miles from the Iraqi border. It was a city of tents as far as the eye could see and growing larger every day. Camp Commando was the headquarters for the First Marine Expeditionary Force. The conditions were sparse. There was a meager chow hall, which served rice and chicken for breakfast, lunch and dinner. The lines were long – it sometimes took up to an hour to eat. There were port-a-potties. The shower trailers worked on occasion. We were advised to bring 5 gallon buckets to wash clothes. My bucket is still sitting somewhere in Kuwait. Quite a journey for a bucket that once held icing from a donut shop in Gilroy.

The missile hit at 10:28 am local time on March 20, 2003. The sirens at the camp...
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Greetings! I hope you've all had a nice summer and have had opportunities to enjoy good weather and time with family and friends. As summer winds down and the kids go back to school, I'd like to invite each of you to get in touch with your respective CEHA representatives to the Board of Directors (i.e., your Chapter Presidents and Presidents-Elect, asking two questions: 1) "What's going on in CEHA—any chapter?" and 2) "How can I help?"

The Board of Directors is focusing efforts these days on the CEHA Strategic Plan and implementation of CEHA's five Strategic Objectives as follows:

1) Continuing Education
2) Public Outreach
3) Communication
4) Legislative Advocacy
5) Financial Solvency

These Strategic Objectives were developed by the Board of Directors in July 2004 as a way to focus the energy of CEHA leadership in a way that would result in effectiveness within the organization and direct benefit to CEHA members.

Continuing Education

The CEHA Board of Directors believes that implementation of continuing education will enhance the practice of Environmental Health through continual development of the skills and knowledge of those working in the profession. The Board of Directors has been working with the Department of Health Services, Environmental Health Registration Program to finalize draft regulations and guidelines for implementation of continuing education requirements for our profession. We are hopeful that regulations will be finalized and implemented in the near future. Some of you participated in reviewing and commenting on the draft regulations and guidelines and we appreciate your input. Anyone else who is interested in obtaining copies of these documents, contact your chapter representatives to the Board of Directors or the CEHA Representative to the Environmental Health Specialist Registration Committee, Dianne Martinez.

Public Outreach

The CEHA Board of Directors is aware that many in the public don't know much about what we do in Environmental Health and how valuable we are to the communities we serve. Many colleges are experiencing declining enrollment in Environmental Health programs to the extent that the programs are being eliminated and it is becoming increasingly difficult to attract and retain qualified individuals in Environmental Health agencies at the county level. NEHA recently published in the Journal of Environmental Health an editorial by Executive Director Nelson Fabian about this difficulty as well as the fact that a large percentage of Environmental Health Specialists across the country will be eligible for retirement within the next 10 years. The combination of fewer people entering and many leaving would be devastating to the profession. As a result, it is a top priority of CEHA to communicate to the public and reach out to those who might not know about careers in Environmental Health in order that we can sustain our profession and secure the existence of Environmental Health Specialists in the future.

Communication

The CEHA Board of Directors has become aware that there are many opportunities for communicating with members that are not being utilized and membership is declining as a result. The Board of Directors of CEHA takes this very seriously and has made a priority to develop better systems of communication within the organization and to communicate more effectively with members. CEHA members are what makes this organization what it is. Without members, CEHA will cease to exist. So if you, the member, have ideas about how CEHA can enhance and improve communication, please let us know.

Legislative Advocacy

CEHA is the voice for the Environmental Health Professional and we need to speak up on legislative issues in order that the legislation affecting the regulated communities, enforcement agencies, and the public we are protecting makes sense. Who better to keep legislators in touch with the reality of the legislation proposed than those who understand the intricacies of implementation of regulatory standards and would be enforcing the requirements imposed by the legislation?

Financial Solvency

CEHA has had good years and bad years in terms of its financial health and ability to cover the expenses involved in maintaining the organization and enhancing its member services. The Board of Directors has made it a top priority to decrease the year-to-year variability in revenue and look for innovative solutions to revenue shortfalls while enhancing the services and value the organization provides to its members and Environmental Health Professionals in general. Financial stability is critical for CEHA to continue as an organization.

In communicating CEHA's five Strategic Objectives, my hope is that anyone reading this will reflect on how achieving these objectives will benefit Environmental Health Professionals across the state, in the public and private sectors. It is also my hope that anyone reading this will want to be a part of the exciting changes coming down the line for CEHA and Environmental Health and will become involved in any way they can in helping CEHA become a dynamic and responsive organization with knowledgeable, passionate, and professional members who make a positive difference in their communities each and every day.

When thinking about the objective above, remember the CEHA Strategic Plan Mission Statement:

To provide the very highest quality career-long professional growth and support for the environmental health professional; and to provide a forum for environmental health issues to advance the environmental health cause.

So for those of you who are active in CEHA, thank you! And for those of you who are new to CEHA or have not been to a meeting or educational function lately, get involved and stay involved! We value your membership and are volunteering our time to serve you — the Environmental Health Professional and CEHA member — in helping to make this profession exciting and rewarding.
which were to warn us of any danger from Iraq to the north, did not go off, and we ran to the nearest bunker with our gas masks. The concrete bunkers were so new that most did not yet have fortifying sandbags around them. At the time, we still were under the belief that Saddam Hussein may have weapons of mass destruction (WMD) capability, and we had to wait until the chem-bio teams cleared the area. After what seemed an eternity, but in reality was probably 60 minutes, the all clear was sounded.

We sustained the first assault of the war when this 1000-lb. Seersucker artillery round exploded about 300 yards from where I was standing. After being in country less than 48 hours, the war was starting.

Commanders feared an artillery barrage and ordered everyone into full chemical suits and gas masks. About two hours after the attack, a 12:35 am, air raid sirens sounded throughout the Camp and we were again sent to the bunkers. Three Patriot missiles then destroyed an Iraqi missile. An hour later, at about 1:30 p.m., an Iraqi Patriot knocked out another Iraqi missile. This scenario was repeated about 50 times over the next three weeks. Saddam was striking back with whatever he had. Huddled in bunkers, it didn’t take long to recognize the sounds of the Patriots being launched and hitting their targets. Everyone held their breath until the sound of the third explosion indicated a hit. Then you waited for the all clear over the loudspeaker so you could remove your gas mask and breathe.

We were given two sets of auto-injector pens filled with atropine and pralidoxime chloride, antidotes for nerve gas. The cap is removed and you stick them in your leg or butt, and it automatically injects the drug into you. Training instructs you to inoculate your shipmate if they are unable to do so themselves.

Helicopters flew constantly overhead. There were constant cries of “gas, gas, gas” as we ran to the bunkers. The best advice I was given during these first weeks of the war was “Get your sleep while you can.” It’s amazing how the body adapts to sleeping in full chemical gear – you collapse from sheer exhaustion. We slept with the lights on to make sure we could get out quickly.

Afterwards, the new reports would say the Iraqi missiles “fell harmlessly in the desert.” It didn’t feel harmlessly at the time, but showing or expressing fear is done at the risk of being branded a coward.

Though Kuwait is a desert country, the sand is more of a tan grit. It gets into everything. Sandstorms were common and the landscape, tents, vehicles, and people became blurt of tan and brown hues. Besides the choking taste of grit, we had to struggle to keep the tents upright.

During all of this, we still had a job to do. I was the senior member of the Public Health team for the Humanitarian Assistance Coordination Center (HACC), monitoring the health status of the civilian population through area assessments and coordinating medical aid where necessary. Military commanders, under international law, are responsible for the safety and welfare of the civilian population. They rely on their civil affairs personnel to minimize civilian interference with military operations and to provide a minimum standard of humane care and basic services until such time as International Organizations (IOs), non-governmental organizations (NGOs), and the host nation can establish operations and assume this capability.

Although a humanitarian crisis was not brought on as a result of active combat, unexpected pre-war shortages, sabotage and limited battle damage resulted in critical humanitarian needs. These emerging requirements, reported by Civil Affairs teams attacking to battle units, required rapid response. The Humanitarian Assistance Coordination Center (HACC) was established and at first, the HACC responded to quick-fix type of operations to the nine south-central Iraqi governments within the area of responsibility for the First Marine Expeditionary Unit (MEF). The HACC was able to deliver life-saving medications, critical food items, safe water supplies, and other desperately needed humanitarian aid to combat zones with hours of initial notification.

The plan for war called for a simultaneous onset of air and ground offensive operation. There was to be a rapid advance into Iraq, bypassing urban centers, and the Iraqi resistance was expected to be sporadic and uncohesive. The plan for humanitarian assistance came under the control of the Department of Defense. The Office of Reconstruction and Humanitarian Assistance (ORHA) was created just seven weeks before the war. ORHA’s focus was on displaced populations, starvation, outbreaks of disease, prisoners of war, and chemical weapons attacks. However, the major concerns during active combat became water, electricity, fuel, medical care and supplies. There was a widespread environmental damage and the oil fields, port facilities and airfields were all secured early in the combat phase. There were no major famines or major epidemics.

Assistance needed to be flexible, diverting from refugee assistance to water, sanitation, and medical supplies for static populations. From their base at the 5-star Kuwait Hilton, ORHA was unable or unwilling to do so.

Another challenge was that military control over humanitarian aid presented difficulties and challenges, primarily with impartiality. The NGOs and IOs rely on their visible neutrality for their safety and effectiveness. Thus, they cannot appear too closely linked to the military.

On May 1, 2003, President Bush declared an end to major combat operations. What started out as small scale, quick fixes, soon became large, nationwide reconstruction projects. Vaccines and vital medications required refrigeration and soon the search for generators and warehouse storage led to the need to rebuild power grids, water plants, hospitals and clinics. The Iraqi supply system needed rehabilitating and payments to civil servants needed to be restored. The United States Agency for International Development (USAID) began distributing contracts for health care, education, and infrastructure repair and we finally started to see organizations that had real money to start urgent projects. The HACC was instrumental in coordinating USAID contractor’s logistics and assist them in prioritizing projects. These contractors often commented on how enterprise and ingenuity the Iraqi people were in maintaining basic services using whatever tools and equipment they could find.

Crossing the border from Kuwait into Iraq, you immediately see the neglect and disrepair from 30 years of terror under Saddam Hussein. The major highways are in fairly good shape, but there is nothing along the sides of the road. The countryside is not “Lawrence of Arabia” type sand dunes, but flat terrain consisting of a mud-brown tule. Three-sided tents and ramshackle mud huts are dwelling units for Iraqi families. Women are seen gathering water from danks, contaminated water holes and irrigation ditches on the side of the road. Occasionally you might see a bombed out tank or other military vehicle from the first Gulf War. The Iraqi people were happy to see the Coalition Forces, often giving them the “thumbs up” sign along the road, but they did not believe they would stay.

Many of the towns in southern Iraq had little to no electricity before the war. Water piped into the homes was non-potable, and
the people filled water cans from reverse osmosis trucks when available. Some hand-dug wells were also seen. Homes were on cesspools or septic tanks for wastewater disposal, most tanks had not been pumped since the 1970's. There seemed to be plenty of food due to increased Oil for Food rations distributed to the population in the anticipation of a major conflict. Locals also relied on food from local markets. The public schools were closed for the year and their facilities ransacked and looted. All textbooks made extensive references to Saddam Hussein's Ba'athist propaganda and had to be replaced.

The Iraqi people lived in constant fear of torture, mass murder and imprisonment as evidenced by the discovery of mass graves. There was a deliberate draining of water in the south, forcing the Marsh Arabs to loose not only a unique culture, but a vast ecosystem as well. The neglect and destruction of Iraq's once viable date palm crop left farmers without income. The size and extent of the work to be done became staggering.

Over time and as areas in Iraq became permissive, NGOs and IOs were establishing a presence in Basrah, but the south central governors were largely by-passed for humanitarian aid due to lack of logistical capability and information. The HACC soon evolved into three distinct locations - Kuwait City, Camp Commando, and Al Hillah. All entities shared the common goal of facilitating humanitarian aid into the IMEF area of responsibility.

The HACC-Kuwait was sponsored by the Kuwaiti government, and they also provided millions of dollars in humanitarian aid to Iraq. A visit to the HACC-Kuwait was where many NGOs and IOs first began their journey to Iraq. I transferred to this location in May 2003 to encourage and assist humanitarian organizations in starting up operations in south central Iraq.

From Kuwait, we were able to provide highly successful conferences for NGOs, contractors, the Coalition Provisional Authority, Ambassadors and Embassy personnel to raise awareness of Iraqi humanitarian issues. The HACC was able to facilitate visas and customs issues. Highly knowledgeable individuals in the areas of public health, education, and logistics from both the Kuwaiti government and coalition forces would determine each organization's goals and objectives as well as any logistical requirements, and then match capabilities with the needs in each governorate. The NGOs and IOs would then have a high level of confidence before venturing into new areas and could discuss concerns and questions before venturing into Iraq.

The HACCs were seen as temporary organizations, facilitating the needs of NGOs and IOs into the transition to Iraqi self-rule. Upon transferring our civil affairs mission to the United Kingdom and Polish coalition forces, we had delivered $130 million in humanitarian supplies, had flown 100 patients to and from Iraq for medical care, and had completed 320 humanitarian projects. The total number of NGOs working in the IMEF area of responsibility was up from just two a few months prior.

When we left, in the fall of 2003, the towns and cities of Iraq were beginning to show signs of vast improvement and normalcy. Restaurants and shops were open and enjoying a brisk trade, the medical clinics were providing vaccinations to children and basic medical care to their citizens, town leaders were learning how to make decisions at the local level, and school children were heading back to school with new books and backpacks. However, we left knowing there was still much work to be done.

The day we left was a typical Kuwaiti day. The temperature was 132°. Again there was an eleven hour wait to board the plane. Again, there were anxious moments of whether we would actually leave that day or not. Again, there was a charted commercial airliner. Again, there was the familiar voice of the Flight Captain over the intercom saying, "We are proud to bring you all home. Job well done." It was those words I had wanted for months to hear. We were going home.
State Targets High-Polluting Vehicles to Help Californians Breathe Easier

By Charlene Zettel
Director, California Department of Consumer Affairs

This year’s state budget includes Governor Arnold Schwarzenegger’s recommended funding for a program that crushes high-polluting vehicles, permanently removing them from roadways and keeping their smog out of California’s air.

A Bureau of Automotive Repair (BAR) program allows motorists to voluntarily scrap their vehicles if they fail the smog check and qualify to participate. BAR’s Consumer Assistance Program (CAP) will pay motorists $1,000 to retire their polluting vehicle or up to $850 in smog-related repairs.

If your vehicle fails its Smog Check, it is not the end of the world, but it is an opportunity to get your high-polluting vehicle off the road for good and to be paid $1,000 for it. Reducing air pollution is a priority for California - every crushed polluter adds to cleaner air.

The 2005-06 budget funds BAR’s Consumer Assistance Program with $16 million to retire vehicles that fail Smog Check and $15 million for repair assistance.

As part of his environmental agenda, Governor Schwarzenegger kicked off the Breathe Easier public awareness campaign on March 16, 2005, to promote vehicle retirement and raise awareness about high-polluting vehicles, their contribution to air pollution and the associated negative health effects, particularly on children.

The vehicle retirement program restarted in September 2004 after a two-year suspension. As of June 30, 2005, BAR has retired nearly 5,000 vehicles. The average retirement age of high polluting vehicles is 19-20 years old. These older cars can produce up to 30 times more emissions than newer vehicles.

According to the 2001 California Health Interview Survey (CHIS), one out of ten children in the state suffers from respiratory disease. In another study, the California Department of Health Services reported that asthma hospitalizations cost $480 million in California in 2000. Each year, 15,000 children are hospitalized because of asthma, forcing parents to miss work and children to miss school.

The program’s goal is to crush 15,000 high polluting vehicles by the end of the 2005-06 year, which represents more than 900 tons of reduction in smog-forming pollutants. BAR also plans to continue its vehicle retirement program in future years to help maximize reductions in air pollution.

The money for the CAP program comes from a portion of a $12 annual fee paid by new vehicle owners, who are exempt from Smog Check for the first six years.

Drivers who have failed their Smog Check, can get a CAP application by calling (800) 952-5210 or by going online to www.breatheeasier.ca.gov. Information is available in both English and Spanish.

Charlene Zettel was appointed in March 2004 by Governor Arnold Schwarzenegger to head California’s lead consumer-protection agency, which licenses more than two million professionals and handles a similar number of consumer inquiries annually. Her previous public service career includes being the first Republican Latina elected to the state legislature, serving two terms in the Assembly, championing laws protecting seniors and children.

Perspectives of an Old-Timer

By Laura Barbour
REHS #4633

I love environmental health! Even after almost 30 years in this profession, I still am passionate about what we do. I’ve been a CEHA member almost all of that time, and have witnessed many changes: good, bad and indifferent.

My first AES was in Sacramento (seems like a million years ago now) during my first year in environmental health while I was still a trainee. I was so excited by the breadth and depth of environmental health, the sharing of information, the camaraderie, and the delight we all shared in our chosen career path. I knew this was what I wanted to do with my life.

We are traditionally a quiet collection of professionals lurking in the shadows, protecting an unsuspecting public from often unseen hazards through inspection, investigation, enforcement, education, consultation and product development. It is time to emerge from the shadows.

What is CEHA? CEHA is your professional organization. It is your professional identity to the rest of the world. It is the field worker for a government agency. It is the consultant in the private sector. It is the industry striving to provide tools to improve and enhance the protection of public health. It is educational institutions feeding “newbies” into the workforce.

CEHA is YOU!

This year’s CEHA Board has an ambitious Strategic Plan. The members of this board have the enthusiasm and passion to successfully inject new life into an aging organization. They have a vision of a dynamic, responsive and respected board that will (1) educate the public about what we do (2) be a beneficial resource to its members, and (3) create a respected professional identity and voice throughout environmental health. The Automobile Club of America did it for motorists, the California Teachers Association did it for teachers, the American Association of Retired Persons did it for us old folks, and CEHA wants to do it for you!

During the coming year, look for improved communication and resources and positive changes on the horizon. But most of all, look deep inside yourself and find an idea or suggestion, an hour to volunteer, a potential member you can bring to a chapter meeting, an article you can submit, or something else that you can give to help make CEHA your new dynamic powerhouse!

Laura is a CA Registered Environmental Health Specialist with over 25 years of enforcement/regulatory experience in all program areas of environmental health. Laura is currently responsible for Sonoma County’s unique Environmental Risk/Community Outreach program, a non-regulatory public information program involving all areas of environmental health, but focusing primarily on groundwater contamination issues. In it’s first year, the fledging program earned a prestigious national “Model Practice” Award from the National Association of City and County Health Officials and in 2004 received recognition from the CA Governor’s Environmental and Economic Leadership Award in Sustainable Practices. She has been an invited presenter at CEHA, NEHA, GRA and CDC/ATSDR annual conferences. Laura received her B.S. degree from Cal Poly - SLO, has a Doctor of Naturopathy degree, is a former teacher and newspaper editor and is a member of CEHA, NEHA and the Groundwater Resources Association.
2005 AES in Monterey Highlights

Richard Wilson (Santa Cruz County) attending the 2005 AES in Monterey.

Vickie Sandoval (Placer County, 2004-2005 CEHA President) welcomes attendees at the opening of the 2005 AES in Monterey.

Allen Stroh (Monterey County Director of EH) welcomes attendees on the first day of the 2005 AES in Monterey.

Keynote Speaker
Fran Solomon

Karen Tracy (Riverside County) and Ron Owczarz (Alameda County) enjoying a light moment at the 2005 AES in Monterey.

Attendees at the 2005 AES in Monterey learn from the leading experts in our fields.
2005 AES in Monterey Highlights

Mel Lim (City of Pasadena Director of EH, 2004-2005 CCDEH President) address attendees at the opening session of the 2005 AES in Monterey.

Vickie Sandoval (Placer County, 2004-2005 CEHA President) presents an award of appreciation to her husband, David Murakami, for his patience and support of her year long duties to CEHA.

Forrest Walker, CEHA Past President 1959-1960. He has attended more than 44 CEHA AES's.

Dick Pantages (NEHA 2nd Vice President, 2004-2005 CEHA Immediate Past President Proxy) presents a plaque to Vickie Sandoval (Placer County, 2004-2005 CEHA President) in recognition of her commitment and devotion to CEHA and completing her term as CEHA President.

Vickie Sandoval (Placer County, 2004-2005 CEHA President) presents Karen Tracy (Riverside County) with the Environmental Health Specialist of the Year award for her initiative and dedication in fighting and overturning the "Sushi Bill".

Vickie Sandoval (Placer County, 2004-2005 CEHA President) passes on the CEHA gavel to Melissa St. John (Waste Management, 2004-2005 CEHA President-Elect), and all the duties and responsibilities as the new 2005-2006 CEHA President.
Cryptosporidium After Action Report
By Brad Prior

Introduction and Background
Cryptosporidium is a highly contagious protozoan parasite that causes prolonged watery diarrhea and can be transmitted between animals and humans. Less than 10 organisms and, presumably, the organism can initiate an infection. In previous years in San Luis Obispo County (SLO), cases were limited to 5 or 6 a year. Cryptosporidium has long been known as a farm animal pathogen, but was not recognized until 1976 as a source of significant human disease. There are a number of reasons why this organism is particularly difficult to control in an aquatic environment such as a waterslide park. These include the following:

- The infectious agent (called an oocyst) is so small and agile (about half the size of a human red blood cell) that it easily passes through a standard sand filter.
- The oocyst is highly resistant to the low concentrations of chlorine typically found in a public swimming pool.
- The incubation period of the disease is from 1-12 days with seven days being the average; by the time the disease appears the victim is so far removed from the source of the infection that identification is difficult.

Infection with Cryptosporidium is much more common than is generally recognized, in the United States and Western Europe between 1.0 and 4.5 percent of the population is infected at any one time while in developing countries the prevalence ranges from 3 to 20 percent.

This organism is not easily detected in the laboratory. Unless specific tests are run the oocysts will not be detected.

The main symptom is an intense diarrhea which typically lasts for 7-10 days, even after the diarrhea subsides the patient is still infectious for another 2 to 3 weeks.

There is no treatment for the disease other than rehydration when indicated; fortunately, cryptosporidiosis (the formal name for the illness) is self-limiting and most victims recover completely. However, patients with compromised immune systems are at risk for a severe, prolonged illness or death, this disease is a frequent killer of people with AIDS.

Cryptosporidium is highly infectious; secondary infection of family members or caregivers is very common.

On August 30, 2004, a concerned parent called to inform SLO-Environmental Health that her daughter had been sick with a severe case of diarrhea. Her return to college had been delayed by a few days due to the illness. The patient had contacted a member of her friends (via email) who had attended a waterslide party with her on August 20, 2004. All of her friends were quite sick and had symptoms similar to hers.

The Communicable Disease program manager was contacted on the same day and by 9/1/04 an assessment of the sanitation at the pool was being conducted. The pool operator, who reported that all of his lifeguards had recently been ill, voluntarily closed the pool upon being notified that both the SLO Public Health Laboratory (PHL) and the Sierra Vista Hospital Lab had fluorescent assay (DFA) confirmation of Cryptosporidiosis. A full-scale investigation was now underway to determine the extent and magnitude of the outbreak and to bring the situation under control.

Upon initial notification of the first cases, the SLO—PHL contacted several primary care physicians in the community and hospital emergency rooms. Diarrhea surveys were carried out by SLO—PHL in September among visitors to the waterslide, demonstrating that many contacted had experienced diarrhea since August, 2004. SLO—PHL notified physicians, Cal Poly health center, urgent care centers, hospital and emergency room, and daycares, about Cryptosporidium and encouraged testing of people who were symptomatic or had visited the waterslide. Crypto was positive from one local pediatrician while another pediatrician reported approximately 30 cases in South County. Testing for Giardia and Crypto is part of our ova and parasite protocols at SLO—PHL lab.

On 9/11/04 SLO—PHL officials contacted the duty officer of the Division of Communicable Disease Control (DCDC) of the California Department of Health Services. On 9/14/04 Charlotte Wheeler, MD, CDC, the EIS Officer and Debra Gilliss MD, Medical Epidemiologist in the Bioterrorism Epidemiology section of DCDC departed Sacramento for San Luis Obispo to assist in the investigations. The objectives of this investigation were to describe the extent of the outbreak; to identify risk factors for Cryptosporidium; to assist in the development of interventions to control the outbreak and, to assist in the development of effective educational messages and strategies for the public and health care providers about control measures.

Community Survey
A telephone questionnaire was administered to employees of the waterslide. A dedicated telephone line was setup to take calls from community members who had visited the waterslides and experienced diarrhea in the last month or who had questions. Persons who experienced diarrhea were encouraged to list their friends, contacts, or others who were at the slides with them so that they could be contacted. Additionally, public awareness bulletins posted at information boards and by mass media inviting potentially exposed persons to call the telephone hotline. The survey queried about the occurrence of 3 or more loose stools in a 24-hour period.

Laboratory Investigation
Stool testing for Cryptosporidium was requested of those individuals with current or recent diarrhea symptoms. Testing for Cryptosporidium was performed at SLO County laboratories by direct immunofluorescent assay (DFA).

Water and filters were sent to the CDC for microscopy and molecular typing.

Age ranges from 1 to 49, with 15 as median age. Teenagers were more likely to be affected.

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<tr>
<th>Age Group</th>
<th>Number of Positives</th>
<th>Per Cent of Positives</th>
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<tr>
<td>0-2 years</td>
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<td>10 and &lt;18</td>
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<td>14.55</td>
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<td>Unknown</td>
<td>1</td>
<td>1.82</td>
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Environmental Investigation
Recreational Water
The environmental investigation included the waterslide, community pools and semi public pools. Pool water samples were taken on, 9/01/04 and 9/02/04 from the two large side by side waterslides, the kiddie pool, and four hot tubs.

Water samples were sent in for analysis before and after hyper chlorination.

Drinking Water
The first thing done was water sampling on 8/30/04. The water sampling was conducted by the county engineers. This was done not only to allay the fears of the citizenry, but also to ensure that no potential Cryptosporidium contamination of public water supply had occurred.
As of 12/04/04, 56 (SLO) lab lab-confirmed cases of Cryptosporidium infection had been identified from about 379 surveys. Most of the patients were county residents and some lived outside the county. It is highly likely that the total number of victims of this outbreak was much higher than the 56 lab-confirmed cases. The Mustang Waterslides Park is located in the middle of a very popular 400-space campground; many of the campers who visited the water park would have returned home before any symptoms developed. In August, 2004, the water park had over 17,000 customers, only a fraction of whom were contacted.

Drinking Water
Three wells supply the Lopez lake recreation area. The utilities board (City Engineering) and SLO Environmental Health (EH) have determined that so far, public water supply for Lopez recreation area has remained unaffected.

Public Health Interventions
There were a number of public health interventions that were implemented in response to the outbreak. The owners of the waterslide immediately closed the water slides and embarked on hyper-chlorination levels throughout the waterpark were raised to 20-30 ppm and maintained at that level for twelve hours. All life jackets and slide mats were air dried and the walkways were all scrubbed with a dilute bleach solution. Other public pools in the county were similarly closed and hyper-chlorinated. Affected persons in sensitive occupations were excluded from work until 3 negative stools were obtained. For example, food handlers and health care workers were excluded from work until 3 negative stool samples were obtained. Children less than 6 years of age were excluded from daycare until 3 negative stools were obtained. Persons engaging in other water activities and who were symptomatic were asked to stay out of the water until 2 weeks following cessation of diarrhea or 3 negative stools. Symptomatic school age children were asked to stay home until diarrhea resolved.

Strict infection control policies were also instituted in the daycare and school settings including the exclusion of all children and staff with one episode of diarrhea and cleaning possible fecal-contaminated areas at daycares, schools, and church nurseries with hydrogen peroxide to inactivate Cryptosporidium. In addition, public health officials developed guidelines for pool operators in dealing with fecal accidents and visited swimming facilities in an effort to verify the posting of public health notices for swimmers. All positive cases received education about appropriate measures to help themselves and to prevent the spread of infection. EH was notified when questionnaires revealed possible secondary source contamination in other local pools. These pool owners were contacted and hyper-chlorination was recommended.

Health Communication Activities
In response to the outbreak, there were a variety of health communication activities implemented. Public health notices and fact sheets were distributed to various groups in the community including physicians, urgent care centers, university health centers, emergency room, hospital, pool operators, swim teams, daycare facilities, school nurses, public and private schools, nursing homes, and assisted living facilities. Fact sheets provided information on Cryptosporidium and discussed ways to prevent transmission. In addition, restaurants were notified by the county health departments emphasizing hand washing and requiring employees with diarrhea to refrain from food preparation activities. Written media releases were sent daily to both the local and regional media houses regarding the investigation. The County Health Officer held media briefings during the investigation to update the media on the outbreak, answer questions and emphasize prevention messages. Appropriate local policymakers were kept current on the magnitude of the outbreak and the progress of the investigation. Cases in adjacent counties epidemiologically linked to the waterslide outbreak were investigated through continued communication with both SLO and other county health departments. Following the report of cases, multiple national aquatics organizations were made aware of the outbreak and agreed to disseminate a drafted alert to all regional members in the surrounding geographic areas. Pool operators were alerted to enhance maintenance and patron education in order to minimize the risk of outbreaks at their facilities.

Environmental Health was found no Cryptosporidium in the Mustang Waterslides Park post-hyperchlorination although no data exists on the effectiveness of detection methods following hyperchlorination. CDC recommends drying of all equipment and pool surfaces. Contamination of recreational water with Cryptosporidium may be commonplace and educational measures should be undertaken to encourage swimmers to refrain from swimming when ill with diarrhea.

Additionally, environmental investigation revealed no evidence that drinking water was implicated in the Cryptosporidium outbreak.

The study illustrates how enteric illnesses, such as cryptosporidiosis, can amplify and spread within a community and underscores the need for instituting rapid and concerted environmental and behavioral interventions to prevent community-wide spread. The extreme chlorine resistance of Cryptosporidium underscores how even chlorinated water activities can play a key role in community-wide amplification. Recreational water parks and community swimming pools represent popular venues with potentially high volume pool use, particularly in the hot summer months. These exposures allow for accidental ingestion of contaminated water in pools or other water activities or through person-to-person contact.

An outbreak such as we have experienced exemplifies the challenges posed by community-wide outbreaks of enteric disease. The speed of diffusion of an outbreak requires prompt and swift actions such as was done. Decisions were made based on limited information and they proved to be essential in mitigating the outbreak. Lowering the threshold for instituting community-wide alerts and interventions in similar outbreaks may prove advantageous in preventing continued amplification of enteric pathogens in a community. Alerts were deployed as soon as reports of
LESSONS LEARNED

There is the need to have consistent clerical support. During an outbreak, the need for keeping track of a cascade of events cannot be overemphasized. Maintaining an action log is real time as is done in Standard Emergency Management System (SEMS) is needed. An array of illness template documents and health notices could be prepared that could be simply customized for the pathogen of interest. There is also the need for enhanced contact mechanism for the notification of regulated facilities.

RECOMMENDATIONS

1. Enteric illness health alert to become an integral part of Web CMR when deployed, to alert physicians and health care providers. In turn health officials, (CD & EH) are to alert, pool operators, daycare facilities, schools, restaurants, hospitals, and nursing homes, etc. about community illness.
2. From the analysis done by Charlotte Wheeler, it is apparent that having water in ones mouth poses significant risk. This information should be construed as an advisory for parents and others to discourage recreational water users from taking in water in their mouth or to embark on squirting contests.
3. At the early stages of the investigation, the survey questionnaires were a work in progress and therefore not complete, hence the question format had to evolve. The Web CMR is expected to overcome any shortcomings.
4. Regularly scheduled chlorine shocking of pool/spa water slide, etc. once a week with at least 20 ppm for 8 hours. Routine hyper-chlorination of public pools and more especially allowing for frequent drying out. Thoroughly air-dry all life jackets, slide mats, aquatic toys, etc. at least weekly.
5. Emphasis on diarrhea exclusion policies in recreational water users, daycare attendees, daycare workers, health care workers, or food handlers.
6. Education of persons with diarrhea and those taking care of persons with diarrhea, to thoroughly wash hands with warm water and soap after using the bathroom and before preparing foods in order to prevent secondary transmission of Cryptosporidium.
7. Utmost care in the use of child wading pools, water tables, and other communal water-based activities in daycare facilities, particularly among diaper-aged children.
8. Disinfection protocols for cleaning of pools in daycare facilities and other soil areas in order to inactivate Cryptosporidium and other water borne pathogens.

9. Education of pool operators and swimmers to encourage persons with diarrhea to discontinue swimming while ill and for two weeks after their diarrhea has stopped.
10. Maintain detailed daily logs of chlorine, pH & CYA readings including, but not limited to the followings times:

Pre-opening, After lunch, Mid Afternoon, Pre-Closing

11. Monthly staff training sessions to include reading pool water chemical tests, logging results, not working in the water when ill, etc.
12. Maintaining posting of the “Notice to Users” sign advising persons with diarrhea illness not to enter the pool/spa water.
13. We would suggest the need for enhanced communication between the public at large with public health, and also for physician and laboratory reporting of suspected and confirmed crypto cases.
14. The pools will require a knowledgeable water quality monitoring person designated to cover each shift.
15. Periodic draining and refilling of spas/wading pools, watersheds based on volume usage and weather etc.

FURTHER ACTION AND STUDY

We still have to pursue getting the results regarding the strain of Crypto so we can determine whether this was a single or coincidental multiple source infection. We would also compare this strain with any might occur in future. It is hoped that future sampling in the summer months will adjudice if measures we have taken have a lasting impact.

ACKNOWLEDGMENT

This report was prepared with the kind collaboration of SLO - CD; Janelle Gorman, Bert Sharpe, SLO Lab; Tom Maier, Sharon Beccario, SLO EH, Steve Carnes and Brad Prior. Many thanks to SLO PHD staff who carried out the surveys. Special thanks goes to the state officials from DCDC DHIS, Drs Charlotte Wheeler and Debra Gilliss. Coordination efforts with San Diego, Monterey, Oregon and Santa Barbara Health Departments are highly appreciated.

Brad graduated from the University of Washington with a BS in Preventive Medicine in 1969, spent two years in the Army, and then went to work as an Environmental Health Specialist (Sanitarians) back then in Yakima, Washington. He returned to UW for an MS in Public Health and then spent the next 27 years in Medford, Oregon where he managed the county On-Site Sewage Disposal, Well Siting, and Solid Waste programs. A little more than two years ago he and his wife moved to San Luis Obispo. He began working for the Public Health Department here in August, 2003.
CITRUS CHAPTER

The Citrus Chapter is involved in many things this year. We hosted the 2005 Educational Update at the Palm Springs Aerial Tramway.

The Citrus Chapter is involved in helping to plan the 2006 AES to be held in May at the Anaheim Crow Plaza. There is still plenty of opportunity to become involved.

The Citrus Chapter just put out their chapter newsletter. For those of you that are interested in seeing our newsletter please visit the webpage listed below:

http://home.dc.rr.com/traceyford/traceyford/

The Citrus Chapter has also arranged to take in an Angels Baseball game. We purchased 100 tickets. I hear they are going fast, so make sure you buy your tickets.

In addition to all our planning activities, we still manage to do our normal board activities. We host chapter board meetings every second Wednesday of the month at 4065 County Circle Dr. Riverside. We have dinner meetings too. Our last dinner meeting was at Bobby Baja's in Rancho Cucamonga where we had a guest speaker, Sia Haghjighi from San Bernardino County who spoke about waterborne illnesses. We held a meeting in September 2005. Please check the website or ask a Citrus Chapter Board member for more details.

In September we sent our scholarship awards to the local high schools. Our theme for the paper is "What is Environmental Health?" The award will be judged in January with the recipients honored at our March 2006 dinner meeting.

NORTHERN CHAPTER

A Yahoo Users Group has been established for Northern Chapter. Northern Chapter will be working on launching a chapter web page.

There was a chapter Training/Meeting Day on September 10th:

The training consisted of a morning, hands-on "How to make your own Biodiesel" seminar, along with other transportation related alternatives.

The general membership meeting was held after seminar in the afternoon time frame.

A general discussion and update was held, along with timely issues regarding training, membership, and topics of interest to membership.

REDWOOD CHAPTER

The chapter is planning a hazing training for this fall. Brian Hoy is a member of Publications Committee.

SOUTHERN CHAPTER

As usual, the Southern Chapter has been very active in promoting the lucrative field of environmental health. To assist with CEHA's strategic planning public outreach goal, Southern Chapter has created a new committee to provide outreach and recruitment among college students within the County of Los Angeles. This committee will prove to be crucially viable not only to CEHA's future, but to the future success of the REHS profession. There are nine major universities (USC, UCLA, CSULB, CSULA, CSUDH, CSUN, Cal Poly Pomona, Pepperdine, and LMU) within LA County and numerous community colleges that will be targeted for outreach efforts through career fairs, science students' club organizations' presentations, and science course presentations. This committee will become active in outreach beginning in the upcoming Fall semester. In addition, the Southern Chapter hosted an educational dinner meeting in Commerce, California on July 21, 2005. The topics of the meeting were: Health Risks of Consuming Contaminated Fish Caught Locally Near the Palos Verdes Shelf, and Raw Oyster Consumption Risks and Regulations, presented by Monica Cardenas of Long Beach Health Department, and Hugo Cornejo of CA DHS. This was a very educational and informative meeting enjoyed by a large audience of CEHA members.

SUPERIOR CHAPTER

Superior Chapter is planning to develop an electronic newsletter to inform members of board and chapter activities as well as to solicit input on member wants and needs.

PLAN CHECK SECTION

By Frank O'Sullivan

A one day seminar titled "Food Service Energy Efficiency for Environmental Health Professionals" was conducted at the Food Service Technology Center in San Ramon, CA on October 13, 2005. The seminar was co-ordinated by the CEHA Plan Check Section and the Norther Chapter of CEHA. It was attended and well received by 25-30 Environmental Health professionals. The material covered included: refrigeration, lighting and exhaust ventilation. Lots of practical information was presented that can be used to convince food facility operators to replace old problem equipment with new "Energy Star" equipment that can pay for itself in a year or so.

Other information was presented that food facility operators could use to modify existing equipment and save thousands of dollars per year in energy costs and have the equipment operate more efficiently.

The Food Service Technology Center is willing to do this type of presentation for other Environmental Health professionals if there is interest out there. Two locations that were mentioned were Downey, CA and the San Diego area next year. The instructors for the class were Don Fisher and Richard Young. Richard is willing to take this presentation to other areas if there is enough interest. He can be contacted at ryoung@fishnick.com. There is lots of information about the research that the Food Service Technology Center has been doing on their web site that you will find very informative. Go to www.fishnick.com and explore. If you need any additional information, I can be reached at frankos@ix.netcom.com.
Partnering With Industry to Create a Cutting-Edge Body Art Program

By Kathy Hartman, REHS and Heather Stackelrodt, REHS

BACKGROUND

Today it is estimated that 39-40 million Americans have a tattoo. California has an estimated 4 million people with tattoos. Because tattooing, permanent cosmetics and body piercing involve the use of needles to pierce the skin, there is concern about transmitting disease-causing pathogens from one person to another. There are numerous bloodborne pathogens as well as some surface bacteria and viruses such as staphylococcus, and herpes simplex virus (HSV), that need to be kept in mind when performing body art procedures.

Human Immunodeficiency Virus (HIV) is often first thought of when thinking about diseases to fear in body art. But HIV is very fragile and requires direct transmission of blood from one person to another. Hepatitis B (HBV) and hepatitis C (HCV) on the other hand, are very strong and both can be transmitted directly or indirectly, making them more likely to be transmitted than HIV. Hepatitis B has been shown to be infective after drying in blood drops for seven days or more. Research by Robert Haley listed tattooing as a risk factor for acquiring hepatitis after he found that people with tattoos were at least as likely as IV drug users to have HBV or HCV. There is no vaccine for hepatitis C at this time, but HBV can be prevented by a series of three vaccinations given over a period of six months.

NEW PROGRAM DEVELOPMENT

Like many other jurisdictions, San Diego has been waiting for state body art regulations. However, in the interest of taking immediate steps to protect the public health, San Diego has decided to proceed in developing a risk-based body art program that addresses cross-contamination and infection control.

REQUIREMENTS

To be successful, any cutting-edge program has to be geared toward achieving positive outcomes, measuring performance, and maintaining and improving the quality of service. Although the specifics of programs will certainly vary from jurisdiction to jurisdiction, there are at least four basic concepts that should be considered. San Diego has added a fifth concept: Partnering, to the list of concepts it used while developing its new body art program.

BASIC CONCEPTS

1. Risk Assessment — Determining what the risk factors are is the first step in designing a cutting-edge program. During the two month period of December 2004 and January 2005, a baseline survey of all body art businesses in San Diego County was conducted to determine conditions, routine activities, and lack of infection control training that could possibly contribute to cross-contamination; the major risk factor for illness, injury or even death in a body art business. Assessing risk is an ongoing process that can help to identify changes in trends, new problems and to identify, for example, whether there is a relationship between lack of knowledge and violations found. Most importantly, on going assessment can help determine whether implemented interventions are effective.

2. Risk Communication — A sound knowledge base is essential. Without the understanding gained through knowledge and experience, it is impossible to communicate risk. During the San Diego baseline survey, environmental health specialists talked about risk factors for disease transmission in body art facilities. For example, they noted whether each body art business had a cleaning room, a dedicated biohazard sink, and if the ultrasonic cleaner and autoclave were used safely and produced acceptable results.

3. Risk Management — San Diego’s body art program will manage risks by promoting an inspection methodology that prioritizes inspections and investigations based on relative risk, and ensures that the focus of the inspection is on risk factors and interventions. Two aspects of this will be a newly designed risk-based inspection form, and standardized training for a specialized body art inspection team. Several measurable elements have been included:

a. Consistency and uniformity of operations in body art shops
b. Consistency in inspection methodology used by environmental health specialists
c. Identification of resources and training for environmental health specialists and body artists.

Two initial body art team members conducted the first round of inspections and did a survey of the body art businesses together in order to standardize their methods. Five new members were added to the body art team and completed their training in June-July 2005. An important part of their training was standardization in collection of survey data and in the way they conducted inspections. Annual standardization training will be designed to keep the team members consistent in their inspection methodology and in the information and interventions they provide to the body art practitioners.

4. Verification of Service — To ensure excellence in our program, and to verify the quality of our service, San Diego’s program will include:

a. A process for the evaluation of the above elements.
b. Annual standardization of our body art team members, and
c. Mailing customer surveys to body art practitioners.

A solid knowledge base is essential for any program. Before beginning any fieldwork, inspectors completed bloodborne pathogen training and attained a working knowledge of tattooing and piercing procedures. This included hands-on experience in assembling a tattoo machine and even tattooing on fake skin.

5. Partnering — Increasingly, partnering is becoming a fact of life whether people realize it or not. Partnering can occur with departments, outside one’s immediate group, with organizations, or with stakeholders such as body art professionals. The best part of partnering is that it results in mutual understanding, tangible results, and it helps to achieve goals more efficiently.

CONDUCTING THE BASELINE SURVEY

A survey of body art shops in San Diego County revealed 320 artists working in approximately 100 tattoo, permanent cosmetics and body piercing shops. DEH currently regulates 90 tattoo and permanent cosmetics facilities under our existing local ordinances, which do not include body piercing. The name and address of each artist was collected to facilitate registering and permitting the artists. Information was gathered on the number of artists who had taken Bloodborne Pathogen training, the number of artists for which hepatitis B records were available, general client record keeping and information on ultrasonic cleaners, autoclaves, biohazard sinks, the
availability and use of personal protective equipment, sharps containers, and information on any shop design problems. Of special interest were business conditions, procedures, or practices that were possible sources of cross-contamination, the main risk factor in a body art studio.

Bloodborne Pathogen (BBP) Training - The survey revealed that 54% of the artists working in San Diego County needed to complete BBP training. Any Bloodborne Pathogen training certificate was accepted. The good news was that 30% of all artists in SD County that had completed BBP training received it at the “Creating a Safe and Compliant Body Art Business” seminar that was co-sponsored by the San Diego County Department of Environmental Health (DEH), the California Alliance for the Promotion of Safe Body Art (CAPSBA), and the Southwest Chapter of CEHA. Unlike some of the bloodborne pathogen training classes that were accepted, the training offered at the seminar was designed specifically for the body art practitioners. For DEH, the fact that 30% of the artists received the BBP at the seminar was an eye-opening experience that really helped to solidify the benefits of partnering.

Record Keeping - Although record keeping is not the most exciting topic, it can be one of the most costly if the Occupational Safety and Health Administration (OSHA) visits a body art business. Recently, OSHA fined a San Diego body art shop $2500 for not having hepatitis B records on file for each artist. Record keeping is an area that can be a challenge to both DEH and the operator. Hepatitis B records is an area where great improvements in record keeping needs to be made.

In San Diego there were a few body art businesses using only 100% single-use, purchased pre-sterilized equipment. Because these businesses did not re-use equipment, they did not have an autoclave to do in-house sterilization. Ninety-nine percent of all artists using equipment requiring in-house sterilization had an autoclave available. Ninety-three percent of these artists used autoclaves that provided adequate sterilization as determined by an Integrator test, even though only 70% of the artists used autoclaves that were routinely spore tested to ensure the autoclave was providing complete sterilization. The failure to adequately monitor the effectiveness of an autoclave increases the risk of cross-contamination through use of un-sterile equipment.

Risks have been evaluated and communicated to the artists, and areas for future interventions and outreach efforts have been identified. Body art team education and preparation played an important role in the way artists reacted. The team members conducting the survey were knowledgeable and were prepared to offer good alternatives (interventions) when question-able procedures or physical conditions were found. This resulted in a noticeable change in the attitudes of many of the artists.

What is Ahead? While we are well on our way, San Diego still has some work to do before realizing the full vision of a Cutting-edge Body Art Program. Letters have been sent to artists with instructions for registering with the county as a body art practitioner and for obtaining the required body art health permit. When all the artists have been registered and permitted, San Diego will need to provide an additional 320 inspections a year. To meet this need, a well-trained team of body art inspectors has been formed. As they deliver the health permits to the individual artists, the team will also complete a second baseline survey of individual artist’s techniques as they are brought under permit, and perform routine inspections using a new risk-based inspection format. A smaller group of inspectors not only minimizes training costs and aids in standardized collection of risk factor data for use in program performance evaluation, it also means inspectors also get more field time, which helps to maintain their body art inspection skill sets.

DEH will also continue to encourage California Alliance for the Promotion of Safe Body Art organization, and to partner with CAPSBA and the Southwest Chapter of CEHA to sponsor an annual “Creating a Safe and Compliant Body Art Business” seminar that offers training specifically designed for the body art industry.

Kathy Hartman and Heather Stachelrodt are employed by the County of San Diego as Environmental Health Specialists in the Food and Housing Division. They have been active in public outreach involving body art by providing training at Naval Air Station Safety Stand Downs, and by providing body art inspection training to military environmental health specialists. As active members of CEHA and CAPSBA, they have helped to organize and have presented at the annual “Creating a Safe and Compliant Body Art Business” seminar and other industry education venues. Kathy Hartman can be reached at Kathy.Hartman@sdcounty.ca.gov and Heather Stachelrodt can be reached at Heather.Stachelrodt@sdcounty.ca.gov.
A Great Opportunity to See Things from Another Point of View and to Make Great Friends

By Kathy Hartman

Being the California Environmental Health Association (CEHA) exchange delegate to the Lancaster Symposium was one of the most exciting events in my career in environmental health. The three-day symposium was sponsored by the North Western Centre of the Chartered Institute of Environmental Health (CIEH) and was held at Edge Hill College in Ormskirk, England. It was wonderful to see former exchange delegates from the North Western Centre again and to meet new friends. The people from the North Western Centre were wonderful and even arranged for me to meet with an infection control nurse who took me to a tattoo shop. Everyone at the North Western Centre was friendly and helpful. CIEH pays for the cost of the conference including the conference fee and room and board for four nights and three days. My husband and I were seated at the head table during the banquet and I was presented with a lovely plaque to commemorate being a delegate. David Neusum even took us to the airport in Manchester at the end of the conference.

The North Western Centre also twins with Zambia, and this year the delegate was a fascinating gentleman, Yoram Kalonga Siulapwa, Secretary of the Zambian Institute of Environmental Health. It was wonderful to have the opportunity to talk with him. We had several conversations about the needs of the Institute. In the United States, we take so much for granted that it is hard to realize how great the need is for everything imaginable in Africa. Hopefully, Bill and I will be able to go to Zambia in the future and perhaps help out at the Institute. Mr. Siulapwa also gave a very sobering report on AIDS in Zambia and how it affects everyone.

This year the conference theme was housing. It was a fascinating topic. I must admit, that I did have a little trouble identifying with some of their challenges...like 300-400 years old housing stock. One of the presenters gave a very interesting presentation with pictures of the problems found in old brick and stone buildings. The pictures really made a difference in understanding the problems discussed by several other presenters. They also had a different set of challenges because of the system of government in England. They do not issue health permits for multiple family housing as we do in San Diego, so it isn’t as easy to get violations corrected. In some cases the best solution was demolition, but the landlords often do not cooperate.

The Lancaster is similar to the AES in that they also have a silent auction. The silent auction was held to benefit the “Water for Kids” program. Barrie Whitehead reported at the end that about $40,000 had been raised this year from various activities including the raffle tickets, silent auction etc. and would be used for two new bore holes, pumps, tanks, pipe and solar energy in a village in Zambia.

The Lancaster was a wonderful experience that I will never forget. The value of attending a conference in another country is without measure. It provides an opportunity not only of to learn about important environmental health issues and see things from a different perspective, but to make new friends. I would strongly recommend that anyone who has even briefly thought about applying to be the exchange delegate to the Lancaster Symposium contact any of the recent exchange delegates. We have all had really memorable experiences, and have come away with a new appreciation for environmental health. Julie DeGraw, Heather Bonomo, and I are all from San Diego. We all had a great time. It is never too early to start thinking about 2006.

There is an empty Lancaster Delegate Application waiting for you. Start planning now, a fabulous experience is only an airplane ticket away!

I would like to thank Diane Eastman and the International Committee for making the twinning and delegate exchange a reality for CEHA, and for encouraging me to apply. I would also like to thank the Southwest Chapter for their financial support. It is wonderful to be a part of a chapter that is so generous.
SUBJECT AREAS - Topics approved for credit include:
1. food protection.
2. solid waste management.
3. liquid waste management.
4. medical waste management.
5. water supply.
6. housing and institutions.
7. bathing places.
8. vector control.
9. hazardous materials management.
10. underground tanks.
11. air sanitation.
12. safety and accident prevention.
13. land development and use.
14. disaster sanitation.
15. electromagnetic radiation.
16. milk and dairy products.
17. noise control.
18. occupational health.
19. rabies and animal disease control.
20. recreational health.
21. bioterrorism.
22. emergency preparedness.
23. lead poisoning.
24. cardiopulmonary resuscitation.
25. epidemiology and communicable diseases.
26. public health
27. environmental health administration and management.

ACCREDITATION AGENCIES Continuing education providers shall be approved by an accreditation agency - The regulations will recognize CEHA, NEHA, and CCDEH as approved accreditation agencies.

RECOGNIZED PROVIDERS - shall meet specific standards such as: being relevant to the scope of work, accurate, timely, and objective.

DOCUMENTATION - Each REHS shall be responsible for maintaining their certificates of completion for five years.

EXEMPTIONS from continuing education requirements may be granted for such reasons as illness, military leave or inactive, retired status.

Please be aware that the review and comment period has not started and prior to the adoption of regulations you will have ample opportunity to provide comments.

Margaret Blood graduated from Sonoma State College in 1977 with a bachelor's degree in Biology. She completed her experience and training requirements at Los Angeles County Health Department in 1980 and followed up with specific coursework in environmental health at San Jose State University. She worked in the rural counties of Calaveras and Amador performing general environmental health duties for 18 years, concentrating on the program areas of solid waste, food and drinking water. Starting in March of 2003 she has assumed the responsibilities for administering the Environmental Health Specialist Registration Program.

By Laura Barnthouse

Your 2005-2006 Public Relations Committee has set some ambitious goals in fulfillment of a portion of the CEHA Board's Strategic Plan for this year!

As these goals and objectives are accomplished, the public will increasingly understand the mysterious field of Environmental Health. As an environmental health professional, you will be proud to be a member of CEHA and recognize the value of this professional organization to you and to the community.

Generally speaking, the goals are to:

- Increase public knowledge of the Environmental Health field through a public information campaign (both print and TV media)
- Market the profession and CEHA through visibility at and collaboration with educational institutions
- Improve communication and membership satisfaction among CEHA members
- Provide a single source web-based location library of educational and resource materials for use by all CEHA members
- Increase the benefits of CEHA membership
- Establish CEHA as "THE" professional Environmental Health organization in California with a unique, recognizable and respected identity
- Develop an EH outreach/educational campaign to allied professions
- Explore the feasibility of an EH major at target CA universities and to facilitate the process
- Develop a series of basic Environmental Health courses (i.e. "Care & Feeding of Your Septic Tank", "What You Need to Know About Your Well", etc.). These courses would be electronically available to CEHA members for use in public meetings, in collaboration with community colleges as a Saturday Seminar class, or for use in any way helpful to the EH professional.
A Public Health and Vector Control GIS/Remote Sensing Project in Relation to West Nile Virus in Monterey County

This project was conducted by National Aeronautics and Space Administration (NASA) Ames Research Center, DEVELOP student interns during the Summer of 2003 in collaboration with staff from the Monterey County Health Department, Information Technology, and the Northern Salinas Valley Mosquito Abatement District.

West Nile Virus (WNV) has become an ever-encroaching threat to humans as well as animals. Since its arrival in New York in 1999, the virus has expanded westward, and in August of 2003, appeared in mosquito samples from Imperial County, California near the Salton Sea.1

WNV is an arthropod-borne virus (arbovirus) that expands its range via a cyclic mechanism of infection between vector and host, primarily birds and mosquitoes. Avian hosts are the most competent amplifying hosts for WNV. Humans and other mammals are considered dead-end hosts. Horses and coots, such as crows, jays and magpies, are prone to death from infection and therefore, are of great concern. Infants and adults over the age of 55 are most susceptible to the worst effects of WNV, including paralysis and death.

DEVELOP is a NASA-sponsored program in which student conduct pilot projects that demonstrate to community leaders how Earth science data and technology can be applied to local policy issues.

Monterey County Health Department sought proactive assistance from the NASA DEVELOP Program to address the threat of West Nile Virus using remote sensing and Geographic Information System (GIS) technologies. The goal of this project was to create a Mosquito Vector Risk Map for Monterey County that exhibited the correlation of “higher-risk” vector source areas with vulnerable populations throughout Monterey County. For the purpose of this project, human population over 55 years of age was considered the major concern. Monterey County has a very high percentage of adults over the age of 55, with distributions of retirement-aged persons varying geographically.2 A mosquito vector risk map for Monterey County would be used as a decision support resource affecting focused mosquito abatement practice and response, and local government policy regarding suburban residential and commercial development. Also, such a map could be utilized as an educational outreach tool, enhancing local community awareness in regard to WNV.

Identified in studies, the most probable competent mosquito vectors for WNV in Monterey County are certain species of the genus Culex. Cx. tarsalis breeds in most freshwater sources and is considered the most likely vector for WNV. Areas of high riparian vegetation are most likely to be a breeding source, including tamarisk, orchards, mosquito clumps, and cattails. Cx. pipiens is most closely associated with urban, densely populated regions, and readily breeds in clear or polluted waters such as storm drains, sewer catch basins, pools, ditches, and sewage treatment plants. Cx. erythrothorax, known as the tule mosquito is associated with wetlands that include tules, cattails, rushes and sedges.3,4

In order to identify “higher-risk” areas in regard to WNV, the spatial extent of these species breeding sources and adult habitat areas were mapped and correlated with population distribution. Using Landsat 7 Enhanced Thematic Mapper (ETM+) imagery and ERDAS. Imagine 8.7 image processing software, countywide vegetation and urban areas associated with each of the respective vectors’ habitats where classified. The thematic vegetation classification was then converted into a vector coverage that could be integrated with other data layers through the use of Environmental Science Research Institute (ESRI) ArcGIS software.

Combining the use of certain spatial processing functions and “overlay analysis” techniques, the objective was to produce three specific data layers that address the problem of the project. These layers mapped the extents of 1) vector-breeding source areas; 2) adult vector habitat areas; and, 3) “higher-risk” mosquito vector source and habitat areas. Acknowledging varying traits and habitat parameters, the spatial functions and queries applied to the data created unique and varying outputs for each vector species. Resulting from use of the GIS were several map products, including the Mosquito Vector Risk Map for Monterey County and the West Nile Virus Surveillance Risk Map for Monterey County. (Figures 1 and 2)

Referring to the Mosquito Vector Risk Map for Monterey County, “higher risk” vector source areas, shown in red, were potential breeding source areas that were...
located within a direct proximity to densely populated communities. "Higher risk" facilities, including hospitals, retirement centers, long term care centers, and horse facilities, were classified as such due to direct adjacency to vector breeding source areas. The interns suggested that "higher risk" vector source areas associated with these facilities may merit a more aggressive mosquito abatement management regime, particularly should West Nile Virus become present and active within the region.

Referring to the West Nile Virus Surveillance Risk Map for Monterey County, green and yellow point features represent surveillance tools that were in place at the completion of the project, including a sentinel chicken flock and mosquito light traps. Arrows indicate topographic corridors through the county's border areas where stream channels provide movement of water, air, birds, and insects from adjacent regions. These represented potential entry corridors for WNV into Monterey County. The students suggested to the Monterey County Board of Supervisors that effective surveillance of West Nile Virus mosquito vectors may necessitate the strategic placement of additional surveillance tools amid these corridors. Point features shown in orange represent potential placement locations of such tools. The students' suggestions were well-received and the county expanded its surveillance for West Nile Virus by adding in two additional chicken sentinel flocks, one in the area of Monterey and the other in King City in the Central Valley corridor.

The predictive capabilities of the model were assessed using 2004 WNV activity, as determined by human and animal surveillance, and vector activity, using mosquito reports to and activities of the County mosquito abatement and public health agencies. Areas of WNV activity in 2004 correlated with the model's predicted areas of higher risk. The model provided an excellent assessment for enhancing ongoing surveillance activities prior to local arrival of WNV.

The county further enhanced its WNV surveillance strategy by applying for and receiving a grant from ESRI/Trimble to purchase a hand-held Global Positioning Satellite (GPS) unit and associated software in 2004 to create a data dictionary for mobile field data collection of dead birds, mosquito sources, and mosquito complaints by Environmental Health personnel. The addition of this hardware and software reduced staff time and costs for collection and analysis of this data and further expedited the ability of staff to evaluate 2004 and 2005 dead bird data for geographic temporal clusters. Such spatial-temporal patterns of dead birds in areas of WNV activity have been shown to serve as a warning system of human infection.


CEHA has a Twinning arrangement with the North Western Centre of the Chartered Institute of Environmental Health (CIEH) in the UK. Each year, a delegate is sent from the North Western Centre to the CEHA AES, and CEHA chooses a delegate to go to the North Western Centre's Lancaster Symposium.

David Newsam was this year's delegate from the North Western Centre to the CEHA AES in Monterey.

Kathy Hartman was this year's delegate to Lancaster Symposium. She had a really wonderful time. It's not too early to think about a delegate for next year's symposium. The Lancaster Symposium is held in early July each year. Every delegate has reported on wonderful hospitality and an overall great time.

For further information on the Lancaster Symposium, please contact Diane Eastman at 805/644-4434, or email deeastman@west.net.

By Diane Eastman

The International Committee drafted, signed and sent a letter of confidence following the terrorist attacks in July to our twin, the North Western Centre, expressing the hope that life returns to normal as quickly as possible.

The next World Congress on Environmental Health is in Dublin, Ireland, June 18-23, 2006. Check their website www.ieh2006.org for the most up to date information.

Figure 2 - Monterey County - West Nile Virus Surveillance
The last day for the Governor to sign or veto bills was October 14, 2005. Since this is the first year of a two-year legislative session, any bill introduced this year but failed passage may be reintroduced next year. If you have any questions please call me at 805/654-2811, or e-mail at melinda.talent@ventura.org.

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HIGHLIGHTS:

PLEASE NOTE THE FOLLOWING HIGHLIGHTS:

Condolences. Letters of condolences were sent to the Chartered Institute of Environmental Health in the United Kingdom from NEHA President, Ron Grimes and Executive Director, Nelson Fabian to express sympathy for lives lost during the recent terrorist attacks in London.

69th Annual Educational Conference and Exhibition (AEC). The 69th AEC was held in Providence, Rhode Island from June 26-29, 2005. It was a great conference and a beautiful location. The keynote speaker was Asa Hutchinson, the former undersecretary for the Homeland Security Department. NEHA continues to strive to increase the visibility of the REHS by developing relationships and partnering with various agencies, such as the Department of Homeland Security, FDA and the CDC. A meeting for NEHA members from Region 2 was held during the conference. I requested e-mail addresses for those present. Please let me know if you have colleagues that would like to be added to this distribution list.

70th AEC. The 70th AEC will be held in San Antonio, TX June 25-28, 2006. Included with this report is the Call for Abstracts. The deadline to submit abstracts for next year's conference is October 21, 2005. Let me know if you have any questions about being a presenter.

Site locations for upcoming AEC's are as follows:

2007 - Atlantic City, New Jersey
2008 - Tucson, Arizona

Computer Network. NEHA has recently invested in a new computer network for the Denver office and the entire NEHA staff is working through the transition. There has been a delay in some e-mail communication, so your patience is appreciated. They are all looking forward to this huge improvement.

Epi-Training. NEHA has partnered with the Centers for Disease Control and Prevention (CDC), academia, and various agencies to provide an ongoing training course in epidemiological investigations. To date, training courses have been held as follows:

Atlanta, GA (Oct 2003); St. Louis, MO (Jan 2004); Charlotte, NC (Mar 2004); Anchorage, AK (May 2004); San Diego, CA (Aug 2004); South Bend, IN (Oct 2004); Virginia Beach, VA (Feb 2005); San Francisco, CA (Feb 2005), Providence, RI (June 2005). Upcoming courses will be held in Estes Park, CO (September 19-20, 2005), Washington, DC (November 8-10, 2005). This has been an extraordinary success and I am pleased to report that the FDA has agreed to review the entire epi-ready course and enhance it by adding educational materials. Visit the NEHA website at www.neha.org for registration information.

Government Affairs. In efforts to have a presence in Washington, DC, NEHA has recently appointed Larry Yates as a Government Affairs and External Liaison in the Washington, D.C. area.

Awards. NEHA sponsors two very prestigious awards and encourages nomination packages to be submitted for deserving and viable candidates. The first is the NEHA Mangold Award and the other is the Snyder Award which is cosponsored by NEHA and NSF. For additional information regarding the Mangold Award, contact Tabby Bernardo at NEHA's Denver office and for information regarding the Mangold Award, contact Stan at NSF at 1-800-NSF-MARK.
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Suite #2A
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Contact: Jon Bazzell
www.sneeze-solutions.com

Taylor Technologies
31 Lovetoe Circle
Sparks, MD 21152
(410) 472-4340
Contact: Tom Metzbower
www.taylortechnologies.com
October 7, 2005
CEHA Bulletin Deadline Theme - Water

November 18, 2005
REHS Exam

December 7 & 8, 2005
CEHA Traveling Seminar/NSF Plan Review Course -
Sacramento Yolo Mosquito and Vector Control office
(go to www.ceha.org for details)
REHS Exam

January 1, 2006
CEHA Bulletin Deadline - Theme - Body Art

January 21, 2006
CEHA Board of Directors Meeting - Sacramento

January 25 & 26, 2006
CEHA Traveling Seminar/NSF Plan Review Course -
Sonoma County Environmental Health Department office
(go to www.ceha.org for details)

February 23 & 24, 2006
CEHA Traveling Seminar/NSF Plan Review Course -
Fresno County Environmental Health Division office
(go to www.ceha.org for details)

March 17, 2006
REHS Exam

April 1, 2006
CEHA Bulletin Deadline Theme - AES, Community/Temporary events

May 9, 2006
CEHA Board of Directors Meeting - Anaheim

May 10-12, 2006
CEHA AES - Anaheim

May 13, 2006
CEHA Board of Directors Meeting

June 18-23, 2006
World Congress - Dublin, Ireland

June 24-28, 2006
NEHA AEC - San Antonio

July 21, 2006
REHS Exam

Please Note: CEHA has a new mailing address. The new address is:
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Please visit the CEHA website at www.ceha.org