The National Molecular Subtyping Network for Foodborne Disease Surveillance

PulseNet News

State & Local Public Health Laboratories in the United States and PulseNet Canada

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In This Issue

WELCOME TO HISTORIC PROVIDENCE

Deborah Ottaviano, Rhode Island Department of Health, Providence, RI

Welcome to historic Providence, Rhode Island, the site of the 11th Annual PulseNet Update Meeting. This year's meeting will take place at the Marriott Hotel located in downtown Providence. The entire downtown area is listed on the National Register of Historic Places--the only major city to be so designated. A proud symbol of Rhode Island is the State House, which is a landmark visible from most of downtown and many approaching highways. The self-supporting marble dome is the 2nd largest in the world, only after St. Peters Basilica.

April weather in Providence is unpredictable, with an average temperature of 57 degree Fahrenheit. Whether you choose to take a short walk or use the trolley that leaves right from the hotel, there is so much to see and do. Benefit Street showcases a mile of history. Packed onto this cobblestone street is an impressive concentration of original colonial homes, beautifully restored houses, churches, and museums that overlook the city's historic waterfront. The innovative and internationally renowned Rhode Island School of Design Museum on Benefit Street exhibits more than 80,000 works of art.

Students from Brown University and other schools in the area congregate on Thayer Street. This trendy street boasts vintage clothing shops, bookstores, music shops and cafes. For a modern experience, check out the more than 150 stores at the Providence Place Mall. This mall is a short walk from the Marriott and offers three levels of upscale shopping, an IMAX theatre and several full-service restaurants.

For an evening out at some of the finest Italian restaurants in Rhode Island, make your way to "The Hill." Federal Hill, a historic area also known as Little Italy, features many gourmet restaurants. You will know you have arrived when you see the huge arched gateway, with a bronzed pinecone, which marks the entry to the neighborhood. The Providence nightlife ranges from the smallest college hangouts to the most upscale martini bars.

For those of you who have plans to extend your stay beyond the meeting, Newport offers some of the country's oldest mansions, interesting museums, great seafood, unique shops, galleries and a number of walking tours that reveal the history and charm of the city. You could also travel an hour north to Boston, MA or an hour south to the casinos in Connecticut. Whatever you decide to do while you are here, enjoy all that New England has to offer. Have a great time in the area and a wonderful PulseNet Update Meeting. On behalf of Providence and the Rhode Island Department of Health, welcome PulseNet! CDC

2006 WESTERN REGIONAL PULSENET MEETING

David Boyle, WA State Dept. of Health, Shoreline, WA

Washington hosted the first West Area PulseNet laboratory meeting on December 5th and 6th in Seattle, Washington. The vast size of the West Area was reflected by the fact that 11 laboratories from Alaska, California, Idaho, Oregon, Nevada and Washington attended the meeting, with three additional FDA laboratories also attending. The varied geography and demography of the West Area was further reflected by the numbers of PulseNet laboratories from some states. California has five PulseNet participating laboratories consisting of the state Public Health Laboratory in Richmond and an additional four laboratories in San Diego, Los Angeles, Santa Clara and Orange Counties, which serve over 36 million people. A total of 38 laboratorians, epidemiologists and laboratory directors/managers were able to attend the meeting. The lecture and breakout sessions of the meeting were facilitated by an expert team of PulseNet veterans comprised of members of the Association of Public Health Laboratories (APHL), the Minnesota Public Health laboratory, PulseNet CDC, and the National Laboratory Training Network.

The differences in pulsed-field gel electrophoresis (PFGE) testing were largely reflected by the size and populations of the West Area states. Alaska, with its huge size and small pockets of population, presented unusual hurdles for specimen collection, shipping and outbreak investigation. California presented other problems commonly associated with populous states or counties (the 9.9 million population of Los Angeles County alone surpasses most states). This was also reflected by the large numbers of specimens received, in particular *Salmonella* strains, and the difficulties in choosing which of these to test or even fully subtype. The epidemiologists also have unique issues in their surveillance and tracking outbreaks of foodborne disease in high density areas, as well as widespread areas that often are not easily accessible. The numbers of isolates tested by the different laboratories varied from less than 200-300 per year to several thousand; some laboratories also offer subtyping of non-enteric pathogens such as MRSA, while others focused solely on the enteric organisms.

The format of the meeting was similar to other PulseNet Area meetings and focused on the need to improve communication between laboratorians and epidemiologists, attempted to solve existing issues within the states regarding specimens and effectively utilizing PFGE data in reporting and surveillance. A lack of funding, effective investigation tools and the distance between labor-

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2006 Western Regional PulseNet Meeting

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atory and epidemiology sections in some states were common problems voiced in the laboratory presentations. An issue highlighted by many states was how to devote staff to PFGE analysis while balancing the need for performing other diagnostic duties, as well as retaining PulseNet PFGE certified staff.

The breakout sessions were particularly useful in providing the opportunity for everyone to present their successes and problems at local levels. A real benefit to this was that everyone had the opportunity to meet and work with other "PulseNuts" and their local epidemiologists. This familiarization will really help improve communication at local and state levels in the future. Often, other representatives were immediately able to help with ideas and could provide protocols to improve tracking and reporting. The FDA provided interesting input as to how the agency incorporates PFGE to investigate contaminated products - from tracking to the removal of the product from the shelves and the issues in safely disposing of millions of pounds of produce that are no longer fit for consumption.

Each laboratory created an action plan that they tailored to address particular deficiencies in their PFGE programs, epidemiological investigations and communication with state/county legislatures. Typically, these included better training, more accurate results, communication with epidemiologists and also more feedback and updates from the epidemiologists on how the PFGE results are being applied during outbreaks. The area laboratory has sent out copies of the specific action plans to each laboratory and is planning conference calls four months after the meeting to review the success of these proposals.

The completed evaluation forms submitted after the meeting have left the organizers in no doubt that the meeting was a great success at several levels. It was a fantastic opportunity for the laboratorians and epidemiologists to meet and discuss issues together. The work done in teams helped identify and resolve many of the prob- lems faced by all and provided assistance for the more unique ones. The most common request was to hold more meetings similar to this one, but with a greater emphasis on the relationship between the laboratory and epidemiology in identifying and tracking clusters. The expertise provided by the guest speakers on PFGE and epidemiologic investgations was also much appreciated by many of the attendees.

With the West Area comprised of so many laboratories, this meeting was a great success in drawing so many laboratorians and epidemiologists together in a setting conducive to working together, sharing ideas, and commenting on all things relating to PulseNet and PFGE. This will be of invaluable help in the future with improved inter state/county communications for all aspects of foodborne disease and, in particular, the identification and tracking of multi-state outbreaks. The Washington laboratory will continue to assist the member laboratorians in their area with training, troubleshooting and surge capacity during major outbreaks or when there is a lack of staffing and/or equipment malfunction. We would like to thank the organizers, guest speakers, and the participants for what was hopefully the first of several fundamental and insightful meetings on how best to use PFGE to track and combat foodborne disease. CDC

PULSENET MIDDLE EAST CONSULTATION

Ahmed ElSedawy, Centers for Disease Control and Prevention, Atlanta, GA

A consultation to explore the establishment of a regional molecular subtyping network for foodborne disease surveillance in the Middle East region was held in Cairo, Egypt, on December 12 and 13, 2006. It was hosted by the World Health Organization Eastern Mediterranean Regional Office (WHO EMRO) and involved multiple international agencies and organizations. In addition to WHO Regional Office staff, representatives from the WHO office in Lyon, France and WHO headquarters office in Geneva, Switzerland, the Centers for Disease Control and Prevention (CDC) (Dr. Bala Swaminathan, Dr. Peter Gerner-Smidt, Ahmed ElSedawy) and the Association of Public Health Laboratories (APHL) (Shari Rolando) in the USA and the US Naval Medical Research Unit 3 (NAMRU-3) located in Cairo, Egypt, were also present. Public health representatives from eight Middle Eastern countries participated in the consultation, and the eight countries represented included Egypt, Iran, Kuwait, Lebanon, Morocco, Oman, Pakistan and Tunisia.

The first day began with presentations from staff of the CDC and APHL on foodborne infection surveillance in the USA. They described the PulseNet program and its role in foodborne disease surveillance in the USA. From a global perspective, both the Pulse- Net International and the WHO-Global Salm Surv (GSS) program were introduced to participants, which share the goal of strengthening foodborne disease surveillance in countries around the world. The second half of the day consisted of presentations by laboratory staff and/or epidemiologists from the eight countries on the current status of foodborne infections surveillance, laboratory capacity and organizational structure within each country in the region. From the presentations, it was clear that the surveillance systems and the laboratory capacity varied from country to country. Thus, some countries were capable and ready to start a PulseNet program and actively participate in a Middle East network, while others would need some help before reaching the level necessary for active PulseNet participation.

PulseNet MiddleEast Meeting Attendees

The second day of the consultation consisted of general and small group-based discussions about a potential PulseNet Middle East network. Topics included necessary requirements to implement a PulseNet system, both at the country and regional levels; ways to incorporate PulseNet into current national and regional surveillance systems; ways to address current gaps in foodborne disease surveillance in order to make a PulseNet system useful; the advantages and challenges of building a PulseNet Middle East network. Following an elaborate and energy-filled discussion session involving all participants to address these issues, there was a general consensus that a PulseNet Middle East network is needed in the region and that it would be beneficial for the improvement of foodborne disease surveillance within and among countries of the Middle East.

The country representatives nominated Dr. Suleiman Al-Busaidy, director of the department of laboratories at the Ministry of Health in Oman, to become the interim coordinator of PulseNet Middle East. Dr. Al-Busaidy will be responsible for ensuring that all tasks required for the establishment of the network are met in a timely manner. These tasks were all summarized in the form of an action plan. An invitation to join PulseNet Middle East will be sent to all those countries in the region that were unable to attend the consultation.

Overall, the consultation was a great success; the participants pledged their support as the first members of this newly created network. A second consultation aimed at evaluating the progress of the network and expanding it to include other countries in the Middle East Region is planned to be held at the end of 2007. CDC

The Fourth Annual Meeting of PulseNet Asia Pacific

Ahmed ElSedawy, Centers for Disease Control and Prevention, Atlanta, GA

The goal of the fourth meeting of PulseNet Asia Pacific was to bring all network participants together and evaluate the progress made in 2006 and make an action plan for 2007. The meeting was hosted by the Jiangsu Province Centers for Disease Control (CDC), located in the city of Nanjing, China and was held from December 19 to 21, 2006. Staff from the Jiangsu CDC staff, China CDC, the National Institute of Infectious Diseases (NIID) in Japan and public health representatives from 11 other Southeast Asian and Asia Pacific countries participated in the meeting. Dr. Bala Swaminathan, Dr. Peter Gerner-Smidt and Ahmed ElSedawy represented the CDC in Atlanta and Shari Rolando represented Association of Public Health Laboratories (APHL). The 13 countries that were represented from the region included Australia, Thailand, New Zealand, Korea, Bangladesh, Japan, India, Taiwan, Hong Kong, Malaysia, Philippines, Vietnam and the host country, The People's Republic of China.

The first two days of the meeting consisted of country/area presentations about the latest scientific findings and future research projects in the areas of PFGE analysis, antimicrobial susceptibility, and additional molecular subtyping methods (e.g. MLVA) of major foodborne disease-causing pathogens in the region. Presentations also included updates on enteric disease infections and surveillance, along with PulseNet progress within individual countries. The Global *Salmonella* Typhi Database, a PulseNet International project, was also introduced by Ahmed ElSedawy, the international PulseNet coord- inator from CDC, USA. Dr. Lai-King Ng from PulseNet Canada gave an update on the work of their network during 2006. And last, Dr. Kai Man Kam and Cindy Luey from the PulseNet Asia Pacific coordinating laboratory in Hong Kong presented the progress made by their network from a regional perspective, including training and certification.

The third and last day of the meeting was dedicated to general discussion on PulseNet Asia Pacific internal business and PulseNet International. First, Cindy Luey and Dr. Kai Man Kam, Hong Kong, gave an update on the current status of the platform for inter-laboratory comparison workgroup (PIC) for PFGE and BioNumerics analysis, the process of certification within the network. Brent Gilpin, New Zealand gave an update on communication among PulseNet Asia Pacific participants, including the current status of the discussion forum (i.e. PulseNet Asia Pacific WebBoard) and email. The presentation also addressed some future information technology tools that can be used to virtually globalize the network and allow more interactive, effective and high-speed communication among network participants, as well as with members of other PulseNet International networks. Another presentation was given by Dr. Swaminathan, longtime pioneer of PulseNet, on a project that he will be working on following his retirement from the CDC and in partnership with the WHO. The presentation gave the opportunity for participants to voice their opinion and express their interest in taking part of this proposed WHO-sponsored project officially known as GLadNet, or the Global Laboratory Directory and Network for Pathogens with Epidemic Potential. Following these brief presentations, various network-related issues were brought up for discussion among participants. Some of the main topics that were discussed included, but were not limited to: present and future collaborative projects, Memorandum of Understanding (MOU) for collaboration between Asia Pacific country networks and also between PulseNet Asia Pacific and other international networks, and the funding and training plans for the upcoming year. The meeting ended with closing remarks from the hosts of the meeting, who expressed their satisfaction with the outcome of the meeting, as well as their expectations for continued progress and success in the future.

Swami in China

The Jiangsu CDC was an exemplary host for this meeting. Aside from the daily meals and social activities that introduced all participants to the unique lifestyle and rich culture of the People's Republic of China, a city tour of Nanjing was organized on the third and last day of the meeting to introduce the participants to some of China's amazing history and breathtaking civilization. Overall, the meeting was a great success mainly because of the excellent job that the Jiangsu CDC did in organizing and hosting it. This success will hopefully repeat itself for the fifth meeting of PulseNet Asia Pacific, which will be held at the end of 2007. CDC

Continuing a National Dialogue on STEC Detection and Submission

Sharon Rolando, Association of Public Health Laboratories

The high-profile outbreaks of *E. coli* O157:H7 in late 2006 kept this important public health pathogen at the forefront of concerns for the clinical microbiology community. A September 2006 MMWR article (http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5538a3.htm) set new CDC recommendations on STEC diagnosis and surveillance and highlighted the importance of both accurate patient care and timely public health reporting of all cases of disease.

The intricacies of carrying out these CDC recommendations were discussed at a January 2007 meeting between CDC, APHL, the commercial diagnostic laboratories, ASM, and other clinical partners. The participants reviewed the MMWR requirements, both in terms of why they were written and how they can be implemented. One challenge to meeting the recommendations noted by both clinical and public health representatives was the workforce shortage now facing the laboratory community. Additional concerns voiced by the commercial laboratories included the high cost of diagnostic testing, the lack of expertise for traditional microbiologic testing on low volume requests, the lack of a regulatory requirement for performing STEC culture in addition to EIA testing, the difficulties in meeting a variety of state submission requirements, and the low level of federal reimbursement money that laboratories receive for the tests they perform.

Three main action items were set forth during the January meeting. The **first** involves developing educational materials for physicians and laboratorians on STEC diagnosis/testing. This will encourage physicians to order the tests on the appropriate patients, teach them the meaning of the various results, and help laboratorians perform testing that meets both patient care needs and public health surveillance requirements. **Second**, the meeting participants will create practice guidelines to supplement the MMWR, including technical details for clinical and public health laboratories who are trying to implement the recommendations. The Infectious Disease Society of America may be one venue for creating and distributing such practice guidelines, which will encompass laboratory

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STEC Meeting

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testing and clinical practice. **Third**, meeting participants and their associations will work with regulatory agencies on two fronts: to develop adequate proficiency testing programs for EIA users, and to achieve appropriate reimbursement levels from federal payers, possibly involving broader use of existing CPT codes or the creation of new CPT codes.

Despite the many challenges to STEC diagnosis and surveillance, all of the representatives in this meeting want to do what is necessary to provide good patient care and achieve proper public health surveillance. CDC

ANATOMY OF A FOOD-BORNE OUTBREAK

Sue Shore, Epidemiologist, Division of Public Health, Dover, DE

One phone call to the Epidemiology Section of the Delaware Division of Public Health (DHP) on December 4, 2006 set into motion a two week process of investigating an *E. coli* O157:H7 foodborne outbreak. A previously interviewed *E. coli* case called the office to report that her daughter had eaten at the same Taco Bell restaurant in New Jersey that had been implicated in a possible *E. coli* O157:H7 foodborne outbreak. The mother had not remembered eating there on the original interview, but after seeing the news report on December 3rd, she recalled the visit.

E. coli O157:H7 is one of many mandatory reportable conditions in Delaware. (http://www.dhss.delaware.gov/dhss/dph/dpc/rptdisease.html) Every day the epidemiology section reviews these reports, identifies new cases and investigates each one. Through this surveillance process, we can detect possible trends or clusters and investigate the possibility of an outbreak. At the same time, the DPH Heath Systems Protection (HSP) Section receives calls from patrons who believe they may have become ill after eating at a restaurant or social function. These calls are screened by HSP and sent to the foodborne epidemiologist for possible follow-up. This partnership helps to identify potential outbreaks quickly and facilitates a rapid response.

After the first case called to report eating at the Taco Bell in New Jersey, an epidemiologist interviewed the case again, asking more specific questions about the exact location of the Taco Bell, what was eaten, when she was there and when she became ill. This information was shared with the New Jersey Department of Health since she ate at a restaurant in that state. Delaware began to participate in daily conference calls with all states involved in the outbreak including Delaware, New Jersey, New York, and Pennsylvania, and officially became a part of the multi-state *E. coli* O157:H7/Taco Bell outbreak investigation.

All *E. coli* O157:H7 isolates from Delaware residents are required to be sent to the Public Health Laboratory for confirmatory serotyping and Pulsed Field Gel Electrophoresis (PFGE). The first isolate had already been culture confirmed as *E. coli* O157:H7 and the PFGE testing was in progress when the epidemiologist received the call on December 4th. When the Environmental and Molecular Microbiology (EMM) laboratory of DPHL finished the PFGE testing, the pattern was sent to CDC, making Delaware the first state to send PFGE results from this outbreak. As more results came in, CDC was able to determine that this specific PFGE pattern of *E. coli* O157 was associated with the Taco Bell outbreak. With this knowledge, the EMM lab quickly alerted the Epidemiology Section that another isolate the lab had received in the lab also matched the pattern. It was the epidemiologist's job to determine if Delaware had another confirmed case.

The epidemiology section reviewed the information of the earlier interview from the patient with this newly identified PFGE match and checked for any reference to Taco Bell. There was none, so the person was called again to confirm this information. When questioned, the patient recalled eating at a Taco Bell restaurant in Delaware, giving us the second confirmed case in Delaware.

With all the news reports, public inquiries began to come into both Epidemiology and HSP. As new cases were interviewed, epidemiologist would determine which ones could be classified as a suspect case, per case definitions for the outbreak. If so, a complete interview was performed and HSP was notified of the implicated Taco Bell restaurant for follow up. The Environmental Health Specialists had already inspected all 15 Taco Bell restaurants in the state on December 5, 2006 as a precaution.

In addition, CDC sent the following recommended interventions for Taco Bell restaurants:

1) The restaurant will need to be cleaned and sanitized
2) Current foods in restaurants will need to be discarded and re-supplied
3) All food workers must have stool samples cultured for *E. coli* O157 and any symptomatic workers or culture-positive workers must not work until documented as culture-negative
4) Food workers will need to have enhanced training in proper food handling and hygiene

On December 7, 2006, Delaware HSP required any restaurant with an associated case to implement all four interventions; if the restaurant had no case associated with it, only interventions 1 and 2 were required.

All Taco Bell locations in Delaware voluntarily closed on December 7th to implement these recommendations. Restaurants were re-inspected beginning December 8th to confirm that they had implemented these interventions and, if so, they were allowed to reopen. Since Delaware had two restaurants with outbreak-associated suspect cases, that required all four of the recommendations to be followed, the Public Health Laboratory received 45 employee stool samples. The DPHL Microbiology lab performed Shigatoxin EIA testing and cultures to rule out *E. coli* O157. Results were available 24-48 hours from receipt in the lab. The rapid turnaround time helped to get these employees back to work and restaurants reopened quickly. The lab also performed Shiga toxin testing and culture on samples submitted on suspect cases. With the results of this testing, epidemiologists were able to update/change case status and submit the information to CDC in a timely manner. Nineteen food samples from one of the restaurants were also submitted to the laboratory and tested using Food Emergency Response Network (FERN) real-time PCR protocols. The EMM lab tested lettuce, tomato, white onions, cilantro, cheese and salsa; all were negative for *E. coli* O157:H7.

Delaware was very closely involved in this multi-state outbreak, and was one of only four states with a restaurant associated with a confirmed case. What was evident from the beginning was the great cooperation and teamwork between DHP's Epidemiology, HSP and Laboratory sections. Furthermore, the Office of Health and Risk Communications (OHRC) was an important part of the team. Due to high media interest, OHRC held a press conference on December 7, 2006. OHRC also conferred with epidemiologist and HSP often and sent press releases once or twice a day, updating the media continually. This cooperation between all the sections involved is vital to any successful foodborne outbreak investigation and Delaware has shown in this outbreak that we have a hardworking, dedicated team. CDC

LAB PROFILE: HAWAII

Pamela O'Brien, Rebecca Sciulli, Precy Calimlim, Hawaii State Department of Health, Pearl City, HI

Within 100 years of the discovery of the Hawaiian Islands by Captain James Cook, the introduction of infectious diseases in the islands resulted in a dramatic decrease in the native Hawaiian population. The emergence of Smallpox in the mid 1800s acted as a catalyst for the development of the Board of Health in 1851, and served as the foundation of the public health system in Hawaii. For over 150 years, protecting the health and well being of the people of Hawaii and its environment has been the main thrust of the State's public health system.

The Bureau of Laboratories was first established in Hawaii in 1947. Today, the State Laboratories Division (SLD) operates under the Environmental Health Administration of the Department of Health (DOH). Located in the island of Oahu, the SLD facility sits atop the rolling hills of Waimano Ridge in Pearl City with an enviable view of the ocean and the historic Pearl Harbor. This site has been the home of the SLD for over ten years.

As an essential component of the state's public health system, the SLD plays a significant role in the assessment of health-related issues by providing specialized diagnostic and reference services in support of the health department's mission to detect, prevent and control infectious diseases. The SLD was originally composed of the Medical Microbiology (MMB) and the Environmental Health and Analytical Services Branches (EHASB). The Bioterrorism Response Laboratory (BTRL) was added in 1999 as a program under the SLD Administration.

When the PFGE Laboratory was initially established in 1997 in the Environmental Microbiology Section of the EHASB, it was used to investigate Group A Streptococci (GAS). This led to the identi- fication of an epidemic strain of GAS associated in a foodborne outbreak. With the continued reliance on PFGE analysis in the investigation of foodborne outbreaks in Hawaii, additional testing capabilities, which included methicillin-resistant *Staphylococcus aureus* (MRSA) and Vancomycin-resistant *Enterococcus* (VRE) were added to its menu.

In 2002, the PFGE function was transferred to the BTRL, under the supervision of Ms. Rebecca H. Sciulli. This move resulted in significant improvements in reporting by reducing the turn around time to submit preliminary gel reports from eight days to same day and reducing the average time of final reports by two days-a 77.7% improvement in reporting of final results to the Disease Investigation Branch (DIB) of the DOH. Additionally, BioNumerics software was added for analysis and reporting.

Today the capacity of the PFGE lab has grown to include subtyping all species of *Salmonella, Shigella*, *Vibrio,* and *Listeria*, in addition to *E.coli* O157:H7 isolates that are identified by the Bacteriology Section here in re in the SLD. *Campylobacter* isolates are also done by request of Ms. Rebecca Kanenaka who is the Epidemiologist for the Foodborne Disease Surveillance group, and was responsible for establishing PFGE in Hawaii.

The PFGE lab in Hawaii has proven to be a successful participant of PulseNet. In August of 2004, Hawaii played a key role in the investigation of a *Shigella sonnei* outbreak associated with air travel. When Hawaii alerted the Minnesota lab about a possible shigellosis outbreak, Michigan, New Jersey, and Texas also found matches to the Hawaii pattern. PulseNet Asia-Pacific also had possible matches from Japan. In short, PulseNet data was instrumental in providing the microbiological evidence for a link bet- ween the shigellosis cases in Japan and the US. Epidemiological investigation pointed to the salad served on-board the associated airplanes as the most likely source of the outbreak, which further illustrated that increased in world travel increases the opportunity for dispersion of bacterial diseases. More importantly, it is indicative of the central role that public health laboratories play in the ability to identify, track, and counteract these diseases. A poster about this outbreak investigation was presented by Desmond Jennings at the 2005 PulseNet Update meeting held in Seattle, WA.

The Hawaii PFGE lab also partakes in cooperative projects with agencies outside the DOH. Collaboration with Dr. Steven Seifred of the University of Hawaii allowed the lab to provide PFGE assistance to the community as he compared his SPA typing data to the PFGE fingerprints generated for MRSA. Additionally, the PFGE lab collaborated with Tripler Army Medical Center in the investigation of an outbreak of community-associated MRSA among the crew of a US Navy ship.

The PFGE lab cannot be described and the tremendous amount of work accomplished in the lab without mentioning the staff that makes this happen. The newest addition to the PFGE Lab is Ms. Pamela O'Brien, a Microbiologist funded by the CDC-Epidemiology and Laboratory Capacity Cooperative Grant at the SLD. She is responsible for the daily PFGE activities and has been certified for *Salmonella, Shigella* and *E. coli* by PulseNet CDC. Working alongside Pam, is her mentor Ms. Precilia "Precy" Calimlim, the BT Microbiologist IV who has accomplished much in her 2 years of running the PFGE lab.

L-R: Nelson Simbajon, Rebecca Sciulli, Jessie Sanchez, Remie Gose, Precy Calimlim, Paul Fox, Mark Nagata, Sheree Lee, Pam O'Brien, Dulce Orcajo

Precy, in keeping abreast of the newest technologies available for molecular subtyping, participated in the MLVA Validation study for *E. coli* O157:H7 spearheaded by Dr. Eija Trees at CDC. Collaborations with Dr. Nelson Delgado's Lab in New Jersey allowed significant success with this assay and eventually moved forward to the second phase of the MLVA validation project. A recent collaboration with the CDC (Ft. Collins and Atlanta) and two other PulseNet Laboratories from the Alabama and New York State (Wadsworth) Departments of Health resulted in a soon-to-be-published article authored by Ms. Michele Parsons entitled "PulseNet USA Standardized PFGE Protocol for Subtyping *Vibrio parahaemolyticus*." Moreover, Precy has validated an experimental assay to utilize PFGE for subtyping of Leptospira, an organism that is of public health importance in Hawaii.

The future plan for the PFGE Lab is to bring it up to code as a "Select Agent" lab for the PFGE analyses of Y. *pestis* and F. *tularensis*. The lab will continue to pursue this objective and contribute to the fulfillment of the Department of Health's mission of protecting the health and safety of the people of Hawaii. PulseNet has played a tremendous part in the success of PFGE in Hawaii. It has truly been an honor to be affiliated with all the labs and people associated with PulseNet, and we look forward to our continued partnership with such an amazing group. CDC

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c/o PulseNet Database Administration team, (PFGE@cdc.gov)
1600 Clifton Road, NE
Mailstop CO3 Atlanta, GA 30333
Tel: 404-639-4558 • Fax: 404-639-3333

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- Kay, R., A. G. Vandevelde, P. D. Fiorella, R. Crouse, C. Blackmore, R. Sanderson, C. L. Bailey, and M. L. Sands. An outbreak of healthcare-associated multidrug-resistant *Salmonella* Senftenberg. Infection Control and Hospital Epidemiology. 2007.

- D. Boxrud, K. Pederson-Gulrud, J. Wotton, C. Medus, E. Lyszkowicz, J. Besser, and J. M. Bartkus. Comparison of Multiple-Locus Variable-Number Tandem Repeat Analysis, Pulsed-Field Gel Electrophoresis, and Phage Typing for Subtype Analysis of *Salmonella* enterica Serotype Enteritidis J. Clin. Microbiol. 2007;45 p 536-543.

- G. Zhang, L. Ma, N. Patel, B. Swaminathan, S. Wedel, and M. Doyle. Isolation of *Salmonella* Typhimurium from Outbreak-Associated Cake Mix. J. Food Protection. 2007; 70(4).

Welcomes:

- **Christina Moore** joined our Molecular Biology department at the State of Tennessee Dept of Health in October 2006. She is a graduate of Austin Peay University. She will be working in both the PFGE and the PCR areas. She is originally from Great Britain - we just love to listen to her talk! Welcome Christina!!
- **Daniel Flood** has joined the AZ State Health Lab in Feb 2007. He is performing PFGE at the lab. Welcome Daniel!
- **Donna Jo Larson** is the new member of Montana Public Health Laboratory. She is in the process of completing her PulseNet certifications. Kathy Martinka has taken a new position as Laboratory Preparedness Coordinator, and Debbie Gibson has taken a new position as National Laboratory System Program Manager.
- **Duncan MacCannell** recently joined the CDC PulseNet Methods Development Laboratory, where he will be working on Single Nucleotide Polymorphism- (SNP-) based next-generation subtyping projects. Duncan is a recent graduate of the University of Calgary, with a Ph.D. in clinical microbiology/epidemiology and a M.S. in applied biotechnology.
- **Erica Pierce** joined the New Mexico State Dept. of Health and has been working on her certification for gels and analysis. We want to welcome Erica to the group.
- **Jessica Halpin** joined the CDC PulseNet Methods Development Laboratory; she will be working on PFGE protocol development and PulseNet core responsibilities. Jessica is a graduate of the Georgia State University with a degree in Biology. Welcome to CDC and PulseNet!
- **Jessica Hart** is the new Associate Public Health Laboratory Scientist at Missouri State Public Health Laboratory. She started her PFGE career in August 2006.
- **Megan Young** will take over Christi Clark's PulseNet duties at the West Virginia Bureau for Public Health. Christi Clark, former lead worker in the PFGE unit, has been promoted to the supervisor of the Microbiology Section. PFGE is part of the Microbiology Section, so Christi will still be with the PulseNet family.

Farewells:

- **Chamundeswari Ponnambalam** (aka Chamu) left Florida Department of Agriculture PFGE lab. We wish Chamu all the best in her future endeavors.

How would you like to receive the PulseNet newsletter?

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