

Emergency Response: Accomplishments & To Do's

By Carol Kirk,
WLRN Coordinator

It has been a busy year since our last newsletter. Much has been accomplished and more has been planned in emergency preparedness and response for laboratories.

An effective, integrated laboratory response to disease threats, whether terrorism-related or naturally occurring, is critical to the overall response. We have had the opportunity to improve our response planning by learning from actual responses to disease outbreaks or threats during the past year.

The list of emerging or re-emerging infectious diseases that Wisconsin has prepared for or responded to in the last year includes:

- the monkeypox outbreak
- a milder season of West Nile Virus activity
- a re-emergence of Severe Acute Respiratory Syndrome (SARS) in Asia
- multiple pertussis outbreaks
- a drifted strain of influenza A(H3N2) not included in the annual vaccine
- a number of foodborne outbreaks caused by norovirus and various bacteria
- another re-emergence of SARS in Asia, and
- almost innumerable outbreaks of avian influenza among poultry in Asia, raising concerns about the possibility of an influenza pandemic.

Based on the planned or actual responses to these diseases and

The WSLH distributed this poster to more than 120 "sentinel" clinical laboratories in Wisconsin. To order extra copies, please email WSLH staff at: WILABTRAIN@mail.slh.wisc.edu

interaction with clinical laboratories, the Wisconsin State Laboratory of Hygiene (WSLH) has developed a "just in case / just in time" approach to laboratory preparedness and communications.

The "just in time" component recognizes that plans will likely need to be modified somewhat for each new situation; the WSLH has made a commitment to provide rapid or "just in time" event-specific information for the laboratory response to disease threats.

The "just in case" component represents the preparedness activities that have been accomplished or

planned and which provide the foundation for laboratory response.

The accomplishments in emergency response preparedness during the past year include:

- Developing and updating a list of more than 120 clinical laboratories in Wisconsin, who make up the "sentinel" laboratories in the Wisconsin Laboratory Response Network (WLRN), a subset of the national Laboratory Response Network (LRN).

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Results becoming web-based

This Summer 2004 issue of Results marks the end of an era.

Starting this fall, the Wisconsin State Laboratory of Hygiene's newsletter will be a completely web-based publication rather than printed. This exciting change means we'll be able to provide you more news in a more timely fashion using the WSLH's website at <http://www.slh.wisc.edu>

We know that one of the advantages of a printed publication is that it arrives right to your office and can be passed around. In order to ensure that you don't miss out on our web-based news, we'd like to start an email notification system to let you know when updated WSLH news has been posted to the website.

If you and/or your co-workers would like to be part of this email

notification system, please fill in the information below and FAX it back to Jan Klawitter, Results editor, at 608-262-3257.

Thank you for your support of the Wisconsin State Laboratory of Hygiene and Results over the years. If you have any comments about the change, please email us at: webmaster@mail.slh.wisc.edu

YES! Please email me when the WSLH adds news updates to its website

If you'd like to be notified by email when the WSLH publishes updated news to its website, please fill out this form and FAX it to Jan Klawitter, Results editor, at 608-262-3257. If your co-workers also read Results, please have them include their informatoin on this form or photocopy the form and have them FAX in their information separately. Thanks!

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- Development and continued use of the Wisconsin Laboratory Messaging System, which provides laboratory-related information to the primary and secondary contacts at each of the sentinel laboratories. The messaging system has been used to provide announcements of laboratory training events and relay information from CDC and the Wisconsin Division of Public Health (DPH).
 - Distribution of the Integrated Laboratory Response Plan to clinical and local public health laboratories in Wisconsin, providing basic information on the LRN, the WLRN, laboratory protocols, etc. for emergency laboratory response.
 - Convening twelve regional meetings of the WLRN to provide information on response to bioterrorism, chemical terrorism, laboratory safety and security, and packing and shipping of samples. The meetings also provided an opportunity for direct interaction between staff of the WSLH and representatives of clinical laboratories, local public health departments, and public health consortia.
 - On-going site visits to 64 of the clinical laboratories of the WLRN to assess laboratory readiness and provide opportunities for additional interaction between WSLH staff and clinical laboratory staff.
 - On-going monthly audio conferences on laboratory-related topics, such as surveillance and testing for SARS and influenza, tracking foodborne outbreaks using PulseNet, Shiga toxin-producing E. coli, viral gastroenteritis, test method validation, and the annual bioterrorism response update.
 - Distribution of a poster to sentinel laboratories "Agents of Bioterrorism - Guide for Level A (Sentinel) Laboratories".
 - Collaboration with neighboring states and the National Laboratory Training Network to provide a Chemical Terrorism Workshop/Satellite Conference, providing basic and Wisconsin-specific information on chemical terrorism response.
 - Enhancement of testing capabilities for emerging infectious diseases and agents of bioterrorism at the WSLH, including the capability to test for smallpox and SARS.
 - Increased testing capacity by completion of a second BSL-3 laboratory at the WSLH, on-going improvements to the BSL-3 laboratory at the Milwaukee Health Department Laboratory, and admission of the Marshfield Clinical Research Foundation Laboratory to the LRN.
 - Strengthened relationships with local public health department laboratories, the Department of Agriculture, Trade and Consumer Protection Bureau of Laboratory Services, and the Wisconsin Veterinary Diagnostic Laboratory. The WSLH is working with these laboratories to develop collaborative plans for emergency response.
 - Strengthened relationships with the eight regional HazMat teams, providing testing support, consultation, and an "all-hazards" specimen collection kit.
 - Development of the Health Emergency Laboratory Personnel (HELP) Corps plan for increased testing or "surge" capacity.
- Additional activities that are either in progress or planned for this year include:
- The distribution of specimen transport supplies to statewide repository sites for use in emergency response. The first sites to be supplied will be local health departments that have volunteered to serve as repository sites. Other sites will be identified and supplied later.
 - Identifying courier and transport systems to provide redundancy to the current system in case of emergency.
 - An inventory of laboratory testing and electronic capabilities and resources to be compiled into a database for quick reference.
 - A statewide pilot exercise for volunteer laboratories to test knowledge, access and response of the emergency laboratory response system.
- Most of these activities lead directly or indirectly to building a statewide laboratory network by strengthening laboratory collaborations and enabling an integrated laboratory response. The statewide laboratory network is a component of our vision for Wisconsin's Public Health and Environmental Protection Laboratory System, in which the State Laboratory of Hygiene fulfills its core functions and works in partnership with private laboratories to improve and protect the health of Wisconsin's citizens.

Another Arbovirus in WI?

By Erik Reisdorf,
WSLH Communicable Disease Division

In the fall of 2003, the Wisconsin State Laboratory of Hygiene (WSLH) isolated the arbovirus Cache Valley virus (CVV) from a patient with symptoms of central nervous system disease. There are only a few reports of the isolation of CVV from a human referenced in the scientific literature.

Because of the time of year – late fall, which is typically enterovirus season, with its colder weather and fewer mosquitoes – the viral isolate was initially thought to be an enterovirus. Routine enterovirus diagnostic tests were negative, though. The WSLH had also run routine diagnostic arbovirus tests, which proved inconclusive. Using electron microscopy, WSLH scientists were able to determine that the size and morphology indicated a potential arbovirus. The specimen was sent to the Centers for Disease Control and Prevention (CDC) Arbovirus Branch for a definitive diagnosis, which came back as Cache Valley virus. The patient had since recovered from the illness.

It is extremely rare to isolate an arbovirus from the cerebral spinal fluid of a patient, as the period of viremia is very brief. Typically, by the time a patient becomes symptomatic there is very little virus circulating in the body, therefore limiting the usefulness of virus culture.

Cache Valley virus is a mosquito transmitted arbovirus of the genus bunyavirus (the same genus as the more commonly known La Crosse virus) and the bunyamwera serogroup. CVV was first isolated in Utah in 1956. Since CVV is transmitted via mosquito bites, the seasonality overlaps with more commonly known arboviruses such

as West Nile virus (WNV) and La Crosse virus (LAC). CVV is thought to produce symptoms similar to other arboviruses, though this is based on only a few documented case reports. Serological prevalence studies and mosquito pool testing have shown that CVV is widely distributed throughout the United States and Canada. Reservoirs include rodents and larger animals such as deer and cattle.

Prevention methods are the same as those for other mosquito-borne diseases, including wearing insect repellent containing DEET, limiting outdoor activities from dusk to dawn, and eliminating objects that may contain standing water that can serve as mosquito breeding grounds. For more detailed information contact your local health department or visit the Wisconsin Department of Health and Family Services homepage at [http:// dhfs.wisconsin.gov](http://dhfs.wisconsin.gov) and click the West Nile virus link.

The WSLH currently offers serological testing for St. Louis Encephalitis virus (SLE), Eastern Equine Encephalitis virus (EEE), LAC, and WNV. They are available as either single tests or as a panel (test # 2435). Enterovirus PCR testing (test # 1507pcr) on cerebrospinal fluid (CSF) should also be considered due to similar CNS disease presentation and overlapping seasonality. Unfortunately, there is no widely available routine diagnostic test specifically for CVV. Reference testing is being done by the CDC.

For additional information regarding arbovirus testing or surveillance please contact either Tom Haupt at the Wisconsin Division of Public Health at (608) 266-5326 or WSLH customer service at (608) 262-6386.

WI TB Lab Network Receives National Recognition

Excerpted with permission from the 6/21/04 issue of Wisconsin Epi Express

During the recent 2004 National Tuberculosis Controllers Workshop in Atlanta, the Association of Public Health Laboratories Task Force on the Future of TB Laboratory Services presented their recommendations. Wisconsin's Mycobacteriology Laboratory Network (WMLN) was presented as one of the successful models for network collaboration.

The WMLN is sponsored by the Wisconsin State Laboratory of Hygiene (WSLH) and the Wisconsin Division of Public Health Tuberculosis Program. It is an effective conduit between clinical laboratories and the public health system, providing regular reports on case counts, outbreaks, and resistance trends.

The process of developing the network began with a survey to evaluate the role in TB prevention and control of all laboratories in Wisconsin. In 1998, a white paper was developed to describe current practices and provide recommendations to achieve consistent, high quality testing in all laboratories that perform TB testing.

Beginning in 1999, network members promoted compliance with these recommendations through a series of site visits by WSLH staff and annual meetings with laboratory reps from across the state.

The Task Force recommendations may be obtained at <https://www.aphl.org/docs/TBTaskForceFINAL.pdf>

For information on the WMLN, contact WSLH TB Program Coordinator Phil Wand at 608-263-5364.

Upcoming WSLH Training Opportunities

The WSLH will be offering the following clinical laboratory training opportunities in the coming months. To register, please visit the WSLH Training and Outreach web page at <http://www.slh.wisc.edu/outreach/index.php>

Wisconsin's Laboratory Response Network (WLRN): 2004 in Review
– Audioconference

August 25, 2004 -- 12:00 – 1:00 PM

Presenters: Pete Shult, Ph.D., Carol Kirk, Cheryl Matzinger, Dave Degenhardt and Al Spallato – all from Wisconsin State Laboratory of Hygiene

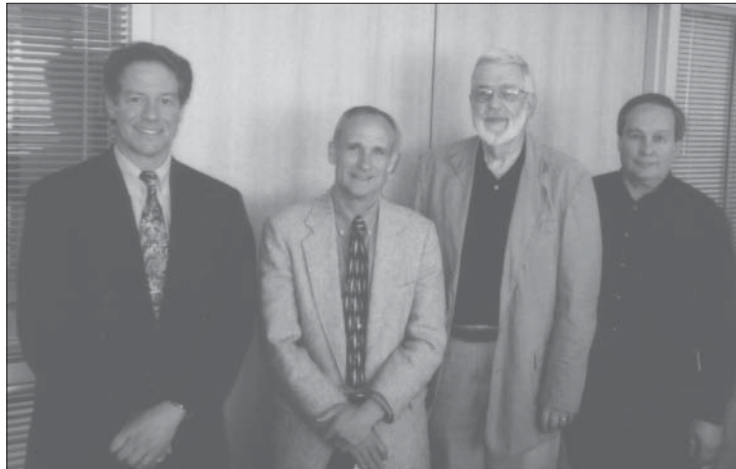
Description: The speakers will present reports on the assessments and development activities of the WLRN, as well as lessons learned and ideas gleaned from the regional meetings.

Upcoming Audioconferences

Community Acquired Pneumonia
Sept. 15, 2004 -- 12:00 - 1:00 PM

Respiratory Season Update
- Surveillance and Laboratory Testing of Influenza and Other Respiratory Viruses
Oct. 20, 2004 -- 12:00 - 1:00 PM

Update on Bioterrorism & Chemical Emergency Response & Preparedness for the Clinical Laboratory
Nov. 17, 2004 -- 12:00 - 1:00 PM



New WSLH Board Members

There were some new faces at the May 25th WSLH Board meeting. The Board has five new members, all appointed by Governor Jim Doyle. Pictured here are (from left): Mike Russell with Earthtech, Inc. representing occupational health laboratories; Dave Taylor, Director of Special Projects for the Madison Metropolitan Sewerage District, public member of Board; George Million, retired Marathon County Health Officer, public member of Board; Dave Berwanger, Laboratory Director for CT Laboratories in Baraboo, representing private environmental laboratories. Missing from the photo is Dane County Coroner John Stanley who represents coroners and medical examiners.

Continuing Board members include: Dr. Deb Turski, St. Marys Hospital, Madison, Laboratory Director, representing private clinical laboratories; Bob Bagley, City of Racine Health Department Laboratory Director, representing local health departments; Mary Jo Kopecky, representing WI Department of Natural Resources Secretary Scott Hassett; Sue Buroker, representing WI Department of Agriculture, Trade and Consumer Protection Secretary Rod Nilsestuen; Tom Alt, representing WI Department of Health and Family Services Secretary Helene Nelson; and Darrell Bazzell, representing UW System President Katherine Lyall.

Giant African Snails take up temporary residence

By Jan Klawitter,
WSLH Public Affairs

A recently unoccupied office at the WSLH became a mollusk motel in May as WSLH microbiologists tested more than 25 Giant African Snails for salmonella.

The slimy guests were among more than 1,000 snails and their eggs captured in Wisconsin since November by federal USDA and state Department of Agriculture, Trade and Consumer Protection officials. The snails are illegal in the United States because of the threat they pose to agriculture if released into the wild. They have extremely hearty appetites and eat more than 500 plant species, many of which grow in Wisconsin. (They ate cucumbers while at the WSLH.) Their mucous can also cause meningitis in humans.

The snails are hermaphrodites, so one snail can create many more snails. For example in the 1960s, three Giant African Snails were released into a garden in Florida and the Sunshine State spent more than \$1 million over 10 years eradicating the snails and their thousands and thousands and thousands of offspring.

The Badger State snails were confiscated from homes, schools, pet stores and swap meets. So far federal and state officials believe all the snails in Wisconsin had been held in captivity, so there has not been a threat to the state's agriculture. There also were no reports of human illness. However, since the snails had been in contact with humans, the Wisconsin Division of Public Health requested that a sampling of snails be tested for salmonella. All the tests were negative.

After all testing was completed the snails were euthanized.



A WSLH microbiologist holds one of the Giant African Snails.



The snails stayed in aquariums with airholes. Some remained on the bottom of their aquarium, while others attached themselves to the walls and top.



One of the snails is swabbed to collect a specimen for salmonella testing. Collecting the specimen was a two-person job -- one to hold the snail and the other to swab.

Please Forward Selected Enteric Isolates

In order to facilitate food- and water-borne outbreak investigation and surveillance, the WSLH and the Wisconsin Division of Public Health are asking Wisconsin clinical laboratories to routinely forward specimens of the following organisms to the WSLH for further testing.

1. All *E. coli* 0157:H7 isolates—for Pulsed Field Gel Electrophoresis (PFGE) and toxin testing.
2. A portion of all EIA STEC positive enrichment broths or the resulting STEC positive isolate—for shiga toxin-producing *E. coli* (STEC) screening and serotyping.
3. All *Salmonella* isolates—for serotyping, antimicrobial susceptibility study, and PFGE testing.
4. All *Shigella*, *Listeria*, *Campylobacter*, *Yersinia*, and *Vibrio* isolates—for antimicrobial susceptibility and PFGE testing.
5. All positive *Cryptosporidium* stool specimens using rapid kits (e.g. ColorPAC®, Immunocard STAT®)—for confirmation. Please submit raw stool, if available, along with formalin-fixed specimen.

Other organisms may be requested during outbreak investigations. This will aid in the determination of the etiology of outbreaks in a timely and efficient manner, thus helping to prevent further illness. In addition, the WSLH will provide these services and shipping of specimens, via Dunham's Express, free of charge.

For more information, please contact Dr. Dave Warshauer, WSLH Communicable Disease Division Assistant Director, at 608-265-9115 or warshadm@mail.slh.wisc.edu

Surveillance Guidelines for Arbovirus

The Wisconsin Division of Public Health (DPH) recently sent Local Health Departments and Infection Control Professionals surveillance guidelines for West Nile virus and other arboviruses. Excerpted below is information regarding WSLH testing. For more information, contact Tom Haupt (608-266-5326) or Dr. Mark Wegner (608-266-0749) at DPH.

Laboratory Testing Capability:

Available diagnostic tests at the Wisconsin State Laboratory of Hygiene (WSLH) include the MAC (capture) ELISA test that will identify IgM antibodies in serum and cerebrospinal fluid (CSF) specific to West Nile virus (WNV), La Crosse (LAC) encephalitis virus, Eastern Equine encephalitis (EEE) virus, St. Louis encephalitis (SLE) virus.

Since it is impossible to distinguish the type of arboviral infection based on clinical signs and symptoms, it is strongly recommended that clinicians request the entire arbovirus panel to be performed versus one specific test and, in addition, consider enterovirus PCR and culture testing of the CSF (WSLH test code 1507 pcr). Enterovirus testing cannot be performed fee-exempt.

Confirmatory testing: In past years the Centers for Disease Control and Prevention (CDC) was the sole source of confirmatory testing of positive arbovirus tests. CDC will no longer accept specimens for routine confirmation. The WSLH now has capabilities to confirm positive arboviral test results through plaque-reduction neutralization testing (PRNT). The WSLH will perform confirmation testing using PRNT on a small sample of positive specimens and those with unusual or equivocal results. The decision to perform confirmatory testing will require approval of DPH or the WSLH.

Fee-for service: The WSLH will again provide fee-for-service testing for arbovirus infections. Meeting clinical criteria is not required to submit serum or CSF specimens to the WSLH for fee-for-service arboviral screening.

Fee-exempt testing: Fee-exempt testing for arbovirus infection will be offered to clinicians whose patients meet one of the following criteria:

- Confirmatory testing of positive test results performed at laboratories other than the WSLH;
- The patient is over 65 years old with signs and symptoms of meningitis (fever, headache and stiff neck) or encephalitis (fever, headache, and altered mental status ranging from confusion to coma) with no other laboratory diagnosis; or
- The patient has a diagnosis of Guillain-Barré syndrome and no other laboratory diagnosis.
- The local health department may request fee-exempt testing be performed if the case-patient lacks insurance coverage or the ability to pay.

Collection and shipping of clinical specimens to the WSLH:

- At least 3-7 mls of serum or CSF or serum in sterile screw-capped vials should be submitted on cold packs and be accompanied by the WSLH CDD requisition form.
- Specimens submitted for fee-exempt testing must include the WSLH "Enhanced Wisconsin Arbovirus Surveillance Form".