

WSLH Celebrates a Century of Service

By Katie Dix
 WSLH Public Affairs

Since 1903, the Wisconsin State Laboratory of Hygiene has touched the lives of millions of people. From testing every child born in the state as part of a newborn screening program, to assisting in monitoring beach bacteria levels, to testing specimens for bioterrorism agents, the work done at the WSLH effects the health and well-being of every person in Wisconsin everyday. Throughout 2003, the WSLH will celebrate 100 years of service as Wisconsin's public and environmental health laboratory.

On October 1, 1903, the Wisconsin Hygienic Laboratory began offering its assistance to every physician and public health official in the state. By 1930, three-fourths of the state's physicians were utilizing the WSLH's services to assist in disease diagnosis and monitoring. Today, the State Lab has evolved into 17 programs ranging from Cancer Control to Ecosystem Quality.

Throughout its history, the WSLH has provided Wisconsin physicians and public health officials with the latest in clinical and environmental testing technology. During its early years, the State Lab operated out of a one-room basement laboratory on the University of Wisconsin-Madison campus, testing just over 100 samples in its first year. A small staff analyzed water and ice along with human samples for typhoid fever, diphtheria, anthrax and rabies.

Several years later, under the direction of the WSLH's longest serving director, Dr. W.D. Stovall, the number of specimens examined annually increased from 7,000 in 1914 to over 500,000 in 1954. By 1953, Stovall also obtained the funds to build the WSLH's own facility on the UW-Madison campus. Today, the WSLH's clinical laboratory is still located on Henry Mall, which is now dedicated to Stovall's honor.

A century after its inception, the WSLH continues to assist physicians and public health officials in battling public health problems. In 1903, public health successfully confronted diphtheria and typhoid. One hundred years later, the WSLH and public health partners around the nation are joining together to face new challenges such as AIDS and bioterrorism, along with looking forward to the next 100 years.

Please join us throughout 2003 in celebrating a century of WSLH service dedicated to improving public and environmental health. During the year, *Results*, the nation's oldest public and environmental health newsletter, will highlight several important pieces of the WSLH's history (see page 6 in this issue).



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All in the (Public Health) Family

In the late 1800s, Pasteur demonstrated the vital link between viral infection, communicable disease and immunization. About the same time Koch established the bacterial cause of certain communicable diseases and demonstrated the means of their control.

At the University of Wisconsin-Madison, courses in communicable disease were first taught in 1885. Two of the first students were C.A. Harper and H.L. Russell. By 1893 Russell held the first definitive professorship in bacteriology, which was established to serve "agriculture" in Wisconsin. During the early 1900s, Russell and Harper, both on the State Board of Health, began lobbying the legislature to recognize the unique Wisconsin



Ronald H. Laessig, Ph.D., became WSLH director in 1980 after 10 years as assistant director. He earned his bachelor's degree in chemistry from UW-Stevens Point and his doctorate from UW-Madison. He completed post-doctoral work at Princeton University and the CDC. A UW Medical School professor of population health sciences, he is an active researcher and speaker on laboratory aspects of public and environmental health.

link between public health, private medical care and the scientific advances beginning to be made in the great universities of the world.

They were successful, and on October 1, 1903 Dr. Russell, as its first director, opened the doors of Wisconsin's "Hygienic" Laboratory in the basement of Agriculture Hall on the UW campus. The mission, as the nation's first "University based" state public health laboratory, was to serve citizens on a statewide basis. The concept, perhaps born in his experience in the "Hygienische Institute" of Germany, combined with the "Wisconsin Idea" and continuously nourished over 100 years by the association between a great university and world-class state health department, defined us then and defines us today.

Our mission then, and today, is focused on "safe water and control of communicable diseases." In some ways we have chosen, perhaps "had thrust upon us" a unique way to commemorate our 100 years of service to the citizens of Wisconsin. Yes, there will be a centennial celebration and ceremony on Henry Mall at UW-Madison, a special commemorative edition of the Wisconsin Medical Journal, articles in professional magazines and a commemorative resolution.

Anthrax has been thrust upon us--again. In the 1890s Dr. Russell went to Koch's laboratory in Europe to study the etiology of Anthrax--then a major health threat in Wisconsin. In 1927, our longest serving director, W.D. Stovall (1914 to 1958), authored a WMJ article on a case of human Anthrax in Wisconsin (transmitted by--would you believe a Badger Hair shaving brush -- don't tell Bucky). In 2001,

just short of our centennial, the State Laboratory became "Anthrax testing-central" as we responded to a terrorist created, nation-wide outbreak.

In our second hundred years, our mission remains to serve the citizens of Wisconsin by ensuring "safe water and control of communicable diseases." However, in a curious twist on the old adage "the more things change the more they stay the same," responding to the threats of terrorism has been added to our mission. We have had one experience with a deliberate attempt to use a communicable disease agent to harm our population. Early in our centennial year, small-pox control and response measures are being put in place across the private and public health sectors of our state and nation, including laboratories. We are also gearing up for the threat of chemical terrorism which can include both direct assaults on citizens as well as our air, water and food supplies.

In 1903, the State Laboratory of Hygiene had a mission based on a partnership between a great university and a progressive department (board) of health to serve all of Wisconsin's citizens. The key was service through an innovative, forward looking, scientifically based laboratory capability and capacity. Today nothing has changed--we are a laboratory serving in a partnership with a great university, a Department of Health, a Department of Natural Resources, a Department of Agriculture and a Department of Emergency Government as well as over 100 local health departments--a partnership to serve all of Wisconsin's citizens. The Wisconsin idea (for public and environmental health) is alive and well at the WSLH in 2003.

WSLH Newborn Screening Laboratory Receives Statewide Recognition

By Katie Dix
WSLH Public Affairs

The Wisconsin State Laboratory of Hygiene Newborn Screening laboratory closed out 2002 by accepting a proclamation from Governor Scott McCallum. The governor's declaration recognizes the efforts of Wisconsin's Newborn Screening Program staff in improving the quality of life for children born with certain congenital disorders.

But for WSLH Newborn Screening Director Gary Hoffman, accepting the proclamation and rubbing shoulders with the governor on December 17 was not the most memorable moment of his day.

"I got to meet for the first time, three families whose children were diagnosed with phenylketonuria (PKU) by the Newborn Screening laboratory at the WSLH," Hoffman explains. "In addition to hearing about the achievements of the affected children such as becoming honor students, developing musical talents and attending college, all of which would have been impossible without newborn screening, the moms actually gave me a hug. I was on cloud nine the whole day."

Although nearly everyone born in Wisconsin under the age of 24 has been screened by the WSLH, the newborn screening program is one of the least known public health services provided by the State Lab. However, those attending the proclamation ceremony--including representatives from the Wisconsin Division of Public Health, the Metabolic Clinic and PKU children along with their families--understand firsthand the importance of newborn screening in Wisconsin.



Members of the WSLH Newborn Screening Staff with the proclamation issued by Governor Scott McCallum in December 2002.

"Rightly so, a lot of public attention is given to other testing at the WSLH," Hoffman says. "This proclamation is one of the few public recognitions the WSLH newborn screening staff members have received regarding their daily efforts to improve the lives of many of Wisconsin's citizens."

Wisconsin's newborn screening program is a state-wide partnership with the WSLH, Division of Public Health, hospitals, physicians and parents. Each year the program detects about 100 health related problems in infants--giving parents earlier treatment options and, in many cases, their child's life back.

Since 1978, the WSLH Newborn Screening laboratory has tested over 1.7 million babies for a variety of congenital disorders. In its early years, the laboratory screened for only four conditions. Today, it screens for 26 disorders including

biotinidase deficiency, congenital adrenal hyperplasia, congenital hypothyroidism, cystic fibrosis, galactosemia, phenylketonuria, sickle cell disease, seven fatty acid oxidation disorders and seven organic acidemias.

The five most recent additions to the newborn screening panel came in February 2003, when the WSLH added maple syrup urine disease, arginosuccinic acidemia, citrullinemia, homocystinuria and tyrosinemia.

Hoffman is excited about testing children for more disorders and is proud that Wisconsin continues to be a national leader in newborn screening testing services.

"Screening for these five additional disorders will help to provide more children each year the opportunity to live a better quality of life," he says.

WSLH Assists Global AIDS Project in Africa

By John Pfister
WSLH Microbiologist and
Epidemiologist

In November 2002, I traveled to Botswana, Africa as a member of a team sponsored by the Centers for Disease Control and Prevention (CDC) and the Association of Public Health Laboratories (APHL). As part of the Global AIDS Laboratory Project (GALP), the team is working to strengthen HIV/AIDS laboratory systems in countries hardest hit by the pandemic.

Botswana is a landlocked country in southern Africa, about the size of Texas. Of its population of 1.7 million, over 300,000 are infected with HIV. Among adults, the HIV prevalence is nearly 36%, one of the highest rates in the world. AIDS in Botswana has flourished in the midst of relative peace and prosperity: the government is a stable democracy and the per capita income is much higher than in other countries in the region.

Botswana has become the first country in Africa to offer free anti-retroviral (ARV) drugs to patients with AIDS-defining illness, through a partnership between the Ministry of Health and two main benefactors: the Bill & Melinda Gates Foundation and the Merck pharmaceutical company. This effort is part of a comprehensive prevention and treatment campaign that could become a model for fighting the epidemic in other developing countries. But the stakes are substantial: if the campaign fails in this well-governed, relatively wealthy country, there may be little hope for its less fortunate neighbors.

The effective management of HIV-infected individuals, particularly those receiving ARV therapy,

requires monitoring of both the CD4 lymphocyte count and the HIV RNA level (viral load). These tests are technically demanding and require special laboratory facilities, considerable technician training and expensive equipment and reagents.

While in Botswana, our CDC/APHL team provided training to laboratory staff in quality assurance requirements and practices related to CD4 and viral load testing. We also assessed the readiness of a new HIV reference laboratory in Francistown to perform this specialized testing.

My team also visited the Nyangabwe Hospital Laboratory and a Voluntary Counseling and Testing site in Francistown, along with the Princess Marina Hospital Laboratory, National Transfusion Services Laboratory, National Tuberculosis Reference Laboratory, National Health Laboratory, Botswana-Harvard HIV Reference Laboratory and an AIDS treatment clinic in Gaborone. The purpose of

these site visits was to assess additional laboratory capabilities and training required to support all facets of the HIV/AIDS prevention and treatment campaign. In addition, our CDC/APHL team conducted a two-day workshop on quality management principles and procedures for the Botswana National Laboratory Quality Assurance Committee.

By participating in the Global AIDS Laboratory Project, the WSLH is participating in an excellent opportunity to improve public health through optimal laboratory practice, not only in Wisconsin and the United States, but worldwide.

The magnitude of the HIV/AIDS pandemic is staggering, particularly in sub-Saharan African countries such as Botswana. I believe it is unconscionable for those of us in the United States who have gained experience and expertise in HIV laboratory management to not share it with other countries in need.



John Pfister (top right) along with several members of Botswana's National Laboratory Quality Assurance Committee working on a statistical quality control training exercise conducted by Pfister's CDC/APHL team in Botswana.

The Future of Training and Outreach

By Cheryl Matzinger
Laboratory Training Coordinator

As the Laboratory Training Coordinator for the Communicable Disease Division, I am delighted to assist the WSLH's commitment to training and outreach. This newly created position serves a unique opportunity to support our health care partners throughout the state. Our goal as a public health laboratory is to develop and strengthen community partnerships, identify and provide relevant training opportunities and provide leadership in establishing guidelines for best laboratory practice.

I have spent a great deal of time in the clinical lab setting. I worked twenty years in the microbiology lab at St. Marys Hospital Medical Center in Madison. I gained a wonderful broad exposure to various specialty areas of microbiology - bacteriology, parasitology, mycology, mycobacteriology and virology. I have a Bachelor of Science degree in Medical Technology, Microbiology & Public Health, certification in Secondary Education and recent training in molecular biology. I am fortunate to have the opportunity to combine and apply my clinical and education background as I look forward to my role as laboratory training coordinator.

So what is in the future for training and outreach at WSLH? An exciting endeavor has been development of a distance learning center. Construction begins in the spring for a distance learning classroom at our Henry Mall location on the UW-Madison campus. With this new facility will be improved capability for audioconferences and satellite broadcasts along with sound quality improvement.

Also, our Web site plan will include development to provide access to training and education materials. Currently, plans are underway for the addition of a Web site library archive of audioconferences, education materials and resource links. As our partners gain more Internet access, the Web site will become an integral part of distance learning as we consider webcast and on-line course offerings.

Overall, the WSLH's goal is to respond quickly to breaking public health issues for all our lab partners. An area of focus, in particular, will be continued training for emergency preparedness and response to biological and chemical terrorism. We hope these future additions will enhance our program and assist us to reach our goal of training and outreach education.

National Laboratory Training Network

The National Laboratory Training Network (NLTN) is dedicated to improving laboratory practice by serving as a nation-wide training resource. NLTN offers continuing education through both site and distance-based learning and features state-of-the-art lab technology training by teaming with state and federal agencies, state public health laboratories, universities and pro-

fessional organizations. The NLTN, sponsored by the Association of Public Health Laboratories (APHL) and the Center for Disease Control and Prevention (CDC), is made up of six regional offices. The Midwest regional office is located in Chicago, Illinois. For more information about NLTN call (800) 536-6586 or log on to their Web site at www.nltn.org.

Mark Your Calendars!

WSLH Audioconferences

Packaging & Shipping of Infectious and Hazardous Materials

Watch for upcoming announcements of dates and times

Professional Laboratory & Public Health Organizations 2003 Conference Schedule

American Society of Microbiology (ASM)
Washington, D.C.
May 18-22
www.asm.org

Association of Public Health Laboratories (APHL)
Richmond, VA
June 8-10
www.aphl.org

American Society of Clinical Pathologists (ASCP)
Salt Lake City, UT (CLMA/ASCP)
June 21-24
www.ascp.org

Interscience Conference on Antimicrobial Agents & Chemotherapy (ICAAC)
Chicago, IL
September 14-17
www.icaac.org

If you have any questions about WSLH audioconferences or other training and outreach opportunities, contact WSLH Laboratory Training Coordinator Cheryl Matzinger by e-mail at matzincr@mail.slh.wisc.edu or by phone at (608) 262-7730.



Pictures

Celebrating 100 years of public health and

In 1903, the Wisconsin State Laboratory of Hygiene opened its doors to the public. Over the years, the WSLH has played a major role in helping public health professionals care for the world's most vulnerable populations. WSLH Results magazine is a piece of the public health history that we pay a photograph to tell the story behind the Laboratory.



Photo courtesy of UW-Archives

On October 1, 1903, the Wisconsin Hygienic Laboratory opened in Agriculture Hall on the University of Wisconsin-Madison campus, making it the first public health laboratory in the nation to partner with its state university.



In 1907, the laboratory moved to the fourth floor of South Hall on the UW-Madison campus. Four years later, it changed its name to the Wisconsin State Laboratory of Hygiene.



The bacteriological laboratory, circa 1915. In 1916, the WSLH opened its first of nine branch labs throughout Wisconsin. (The branch labs closed in 1953.)



The WSLH's longest serving employee, Stovall, circa 1925. Stovall obtained the funding for the current facility. In 1975, the laboratory was named in his honor.



In 1999, the Environmental Health Division of the WSLH moved to a new building located on the east side of Madison. The 50,000 square foot state-of-the-art facility houses some of the most modern environmental laboratories in the nation.



The Newborn Screening laboratory in 1978 when it included four tests. Today the NBS panel consists of 26 tests.



What's next?

Public health has always faced environmental challenges. Next issue, discover how the WSLH has evolved into a world class environmental health testing facility.

From the Past

Environmental laboratory service in Wisconsin

Wisconsin State Hygiene opened its first laboratory in 1900. In every physical official in the 100 years, the significant role of private health care that some of us have known only and infectious disease in 2003, the era will chronicle. This issue we will contribute to the Wisconsin State Hygiene.



The tuberculosis laboratory during the 1940s where the WSLH provided TB testing to physicians, sanatoria and hospitals throughout the state of Wisconsin.



The Cytology lab in 1952. In 1946, a WSLH medical technologist brought the Pap test back from New York. In 1957, the WSLH opened a School of Cytotechnology to train students in cytotechnology testing techniques.



Director, Dr. W.D. Stovall was instrumental in WSLH's Henry Mall which was dedicated and



The water chemistry lab during the early 1930s. In 1928, the State Lab moved to Service Memorial Institute on the UW-Madison Campus.



The WSLH Henry Mall facility on the UW-Madison campus after completion in 1953. In 1975, Stovall Hall received an addition to fill in its "L" shape. Today, the clinical laboratory is still located in this building.



The industrial hygiene lab during the 1950s. The WSLH began offering occupational health testing in the mid 1930s.

State Lab Joins National Water Monitoring Day Celebration

By Katie Dix
WSLH Public Affairs

Wisconsin's lakes may be frozen over now, but in a few months the beaches will be filled with swimmers and sunbathers. And even though the swimming season may seem short, for many of Wisconsin's environmental monitoring agencies, keeping the water safe and clean for recreationalists is a year-long job.

On October 18, the Wisconsin State Laboratory of Hygiene joined many of these organizations from across the country in celebrating National Water Monitoring Day—the 39-year anniversary of the passage of the Clean Water Act. As part of the celebration, the WSLH, the City of Madison Department of Health, the Water Resource Division of the U.S. Geological Survey and the Friends of Lake Wingra sponsored a hands-on water monitoring demonstration for area schools and the general public at a Madison beach.

As part of the event, various orga-



WSLH environmental microbiologist Jon Standridge (left) determines the turbidity of a water sample collected by Dave Shiffert of the Friends of Lake Wingra organization at a local Madison beach on National Water Monitoring Day.

nizations' environmental scientists demonstrated beach monitoring activities such as taking measurements of the beach water's temperature, pH, dissolved oxygen, turbidity and microorganism count.

WSLH environmental microbiologist Jon Standridge participated in the day's activities and says it was a good way to showcase how environmental organizations are working together to protect the public's

environmental health in Wisconsin.

"We want the public to understand how beaches get contaminated, how we detect this contamination and how we can use the gathered information to decrease the risk of getting a swimming acquired waterborne disease," Standridge explains. "It takes a lot of work at many organizations to ensure that everyone can enjoy these beaches."

WSLH Associate Professor Receives Education Award

At the November 2002 American Society of Cytopathology's Annual Scientific Meeting, WSLH School of Cytotechnology Program Director John Shalkham received the ASC 2002 Excellence in Education Award. Shalkham was recognized for his outstanding educational contributions in the field of cytology. He is cur-

rently a University of Wisconsin-Madison clinical assistant professor, who has trained over 160 cytotechnology students since 1977.

The ASC's education award is presented annually to one cytotechnologist or pathologist in recognition of exceptional cytology service and contributions, along with involve-

ment in primary education.

"Being recognized by my peers for my efforts in education is very rewarding," Shalkham says. "We all hope that through our work we can make a difference in the world. This award proves that I might have spent my time well."

Flu Season Off to a Slow Start

By Carol Kirk
WSLH Virology Program Coordinator

In our last newsletter, we stated that "influenza and RSV season is just around the corner." I have to admit that it's been a bigger corner than I expected, and I was beginning to wonder about the article's title "Flu Season Sure to Stop in Wisconsin." Although we learned years ago that we cannot predict influenza season (other than it will occur annually), we nonetheless are disappointed when it doesn't conform to estimates based on data from previous years.

Based on recent years, we expected to detect the first influenza isolates in Wisconsin during mid to late November. This season, the first influenza isolates were detected in early December.

Again based on recent years, we expect that activity will reach peak levels between late December and late February. This season, we have passed late December and are still at sporadic detections in late January, so it would seem that peak activity would likely not occur until February, at the earliest, but may still fall within that expected two-month window.

Based on 20 years of data, the first influenza type and subtype detected will nearly always be the predominant type/subtype during the season. This season, the first two Wisconsin influenza isolates were an influenza A(H1) subtype and an influenza A(H3) subtype, with the first influenza B isolates detected in early January. From what has occurred so far, we will have to wait to see which type or subtype will be the predominant one this season.

The Season to Date

The first influenza isolates were reported during the week of December 7, 2002. An influenza A(H3) was recovered at the WSLH from a specimen submitted by United Hospital System, Kenosha for culture confirmation of a positive rapid test result. During that same week, an influenza A(H1) was reported by the Milwaukee Health Department Laboratory.

Since then, both influenza A(H1) isolates and influenza A(H3) isolates have been recovered by virology laboratories around the state at the rate of one to two per week. During the weeks of January 10 and 17, 2003, three influenza B isolates were recovered at the WSLH from specimens submitted by St. Elizabeth Hospital, Appleton, and Franciscan Skemp Health Care, LaCrosse. All of these specimens were submitted for culture confirmation of positive rapid test results at the original institutions.

Influenza isolates have been recovered from fewer than 2% of respiratory specimens tested in any week so far this season. In previous seasons, influenza has been recovered from 20% to 40% of respiratory specimens during weeks of peak activity.

Influenza season has also demonstrated a sluggish beginning nationally. According to CDC reports, influenza A(H1) and influenza A(H3) and influenza B viruses have all been reported. The CDC has reported that 72% of influenza isolates have been influenza B viruses, with the remaining 28% influenza A viruses. Of the influenza A isolates that have been subtyped, 75% were influenza A(H1) viruses (including an H1N2 virus) and 25% were influenza A(H3) viruses.

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Check Us Out Online!

Check out the latest additions to the Wisconsin State Laboratory of Hygiene Web site at <http://www.slh.wisc.edu>.

If you look under the "Training & Outreach" heading and click on "Wisconsin Laboratory Updates," you will see that we now have a "Wisconsin Laboratory Network Data at a Glance" section. In this section, you can see a description of laboratory-based viral surveillance, the current virus surveillance

report, graphs of influenza, RSV, and rotavirus detections in Wisconsin (both current and previous season) and links to the CDC Web site for national data and other information.

We also welcome any feedback. Send the WSLH an e-mail at webmaster@slh.wisc.edu and let us know what you think about the new section and/or other information you would like to see on the WSLH Web site.

New Shipping Regulations Take Effect

By Bob Garrison, DVM
WSLH Communicable Disease
Division

An urgent situation has arisen which you, our customers, need to know about. Recently, changes were made to federal shipping regulations that will have a major impact very soon on how specimens must be shipped to the Wisconsin State Laboratory of Hygiene.

A detailed explanation is not possible here, but the major change involves the need to ship all types of specimens in much sturdier (and more expensive) packaging, as well as properly documenting the shipment and training your employees.

Most importantly, the responsibility for meeting the new regulations lies with you, the shipper, with the possibility of substantial fines for violations.

The WSLH is actively researching all aspects of this situation and will pass it along to you as soon as possible. Rest assured we will do everything possible to assist you. Look for more information very soon.

If you have any questions about shipping specimens to the WSLH, please e-mail Bob Garrison at garrisrd@mail.slh.wisc.edu or call (608) 262-4298. Questions can also be directed to Barb Hill by e-mail at bmh@mail.slh.wisc.edu or by phone at 1-800-462-5261 ext. 101.

Change in Subtype Reporting

The WSLH is now reporting influenza A subtypes as influenza A(H1) and influenza A(H3), without indicating the neuraminidase (N) component of the subtype. This change in reporting is due in part to our experience last year, when we learned that our influenza A(H1) isolates were in fact influenza A(H1N2) isolates, not influenza A(H1N1).

The tests which are routinely used to subtype influenza A isolates actually classify only the

hemagglutinin (H) component of the virus, but the accepted practice among virologists has been to assign the N component according to the H component, so H1 viruses were previously reported as H1N1 and H3 viruses were reported as H3N2.

If you have any questions regarding this change, please contact the WSLH Virology Laboratory at (608)262-3185.

Influenza... from page 9

All of the influenza viruses that have been characterized by the CDC thus far have been similar to the strains included in this year's vaccine.

RSV

RSV has been detected sporadically throughout November and December, and now appears to be increasing, as expected. Throughout most of December, RSV was detected in approximately 5% of all respiratory specimens tested by Wisconsin virology laboratories. Based on previous years, we should expect the peak in RSV detections to occur in mid to late February.

Parainfluenza Viruses, Rhinoviruses and Adenoviruses

While we wait for influenza and RSV activity to increase, the parain-

fluenza viruses have been demonstrating their autumn activity peak. These viruses have been detected in approximately 1 to 5% of respiratory specimens throughout October, November and December, at times accounting for more than 60% of all positives recovered from respiratory specimens by virology laboratories. Rhinoviruses and adenoviruses have contributed to the respiratory scene during this time to a lesser degree, based on laboratory data.

Rotavirus

Rotavirus is being detected at low levels in Wisconsin, and can be expected to increase in activity during January and February. Based on data from previous years, rotavirus detections can be expected to reach peak levels during March and April.

Norovirus (Norwalk-like Virus) Update

By Carol Kirk
WSLH Virology Program Coordinator

While we were patiently waiting for influenza season to take the stage, norovirus activity captured the spotlight, both in Wisconsin and throughout the United States. Nationally, reports of outbreaks of nausea, vomiting and diarrhea on cruise ships captured our attention. In Wisconsin, outbreaks were reported in multiple settings, including hospitals, long-term care facilities and schools. According to the CDC, several states have noted an increase in outbreaks of acute gastroenteritis since October 2002. These outbreaks are consistent with norovirus infection and may be due to the emergence of a newly identified strain of norovirus.

Noroviruses are the most common cause of gastroenteritis in the United States and are estimated to cause 23 million cases of acute gastroenteritis each year. Illness is characterized by a sudden onset of nausea, vomiting and watery diarrhea, usually lasting 12 to 60 hours. Though the illness is usually self-limited, it can be more severe for the elderly, children and people with severe underlying medical conditions. Supportive treatment to prevent dehydration may be needed in severe cases, and there is no

specific anti-viral treatment. Fecal-oral transmission of these viruses may occur directly from person-to-person, through contaminated food or water, or through contact with contaminated surfaces or materials. Transmission can be very difficult to control as noroviruses are very infectious and also very hardy. Recommended control measures include frequent and thorough hand-washing, and avoiding food-handling or contact with persons who are at increased risk of more severe illness while symptomatic.

Norovirus testing utilizing rt-PCR (reverse transcriptase polymerase chain reaction) is available at the Wisconsin State Laboratory of Hygiene, but is restricted to cases connected to outbreaks under investigation by the Division of Public Health or local health departments.

For more about noroviruses and the cruise ship outbreaks, check out the CDC Web site at <http://www.cdc.gov/mmwr/pre-view/mmwrhtml/mm5149a2.htm> or <http://www.cdc.gov/mmwr/pre-view/mmwrhtml/mm5203a1.htm> and the Wisconsin Division of Public Health Fact Sheet at <http://www.dhfs.state.wi.us/healthtips/BCD/Norwalk.htm>.

The "Norwalk" Name Game . . .

The classification and naming scheme for the noroviruses (a.k.a. "Norwalk-like viruses") is evolving as more is learned about them. Initially named for the geographic location of the outbreaks they caused (e.g., "Norwalk Agent"), they were grouped as "SRSV" (small, round, structured viruses)

based on their appearance by electron microscopy. Based on molecular testing, they were later classified as part of the Caliciviridae family (caliciviruses). The term "Norwalk-like viruses" was used as an interim name for the group, which has now been officially named "Norovirus."

Just the Facts

- Noroviruses are members of a larger group of viruses called caliciviruses.
- 60 to 80% of outbreaks of acute gastroenteritis occur on land.
- Symptoms include nausea, vomiting, diarrhea and cramps, with diarrhea more common among adults and vomiting more common in children.
- The virus spreads easily from person-to-person through fecal-oral contact.
- Infected people can spread the virus for up to four days after diarrhea or vomiting have stopped.
- Food outbreaks have been linked to cold, prepared foods such as salads, sandwiches and shellfish harvested in contaminated water.
- Contaminated drinking water and recreational water have also been sources of outbreaks.
- Noroviruses are found throughout the world, and humans are the only known hosts.
- Norwalk virus was first identified in Norwalk, Ohio during a 1972 outbreak.



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Regents

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Readers are encouraged to
send comments and questions
to the address below:

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Remember to Mark
Your Calendars!

National Public Health Week
April 7-13, 2003

National Medical Laboratory Week
April 20-26, 2003



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