

annual report fiscal year 2014



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**Newborn
Screening
Program**



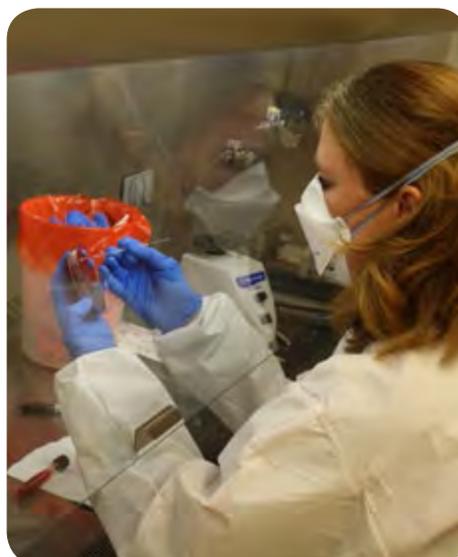
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message from the director



Dear Reader,

This report highlights some of the laboratory's activities from state Fiscal Year 2014 (July 1, 2013-June 30, 2014). As always, we had an exciting year, with thousands of specimens tested and with the addition of new technologies that will help us do an even better job at identifying and addressing threats to the health of Minnesotans. But there was also a bit of unexpected excitement in the form of a laboratory flood caused by water pipes that froze during the polar vortex and then burst.

While this was an unfortunate occurrence, to say the least, I had the opportunity to observe first-hand the heroic efforts of Public Health Laboratory (PHL) staff as they scrambled to protect expensive equipment and reroute testing to ensure that there was minimal interruption in services. The response to this incident involved staff from multiple divisions within the Minnesota Department of Health (MDH) and from other state agencies, all of whom worked together to get the lab back in action as quickly as possible. I extend my sincere gratitude to all who helped us through this difficult and disruptive time. More detail about this incident and the lab's recovery may be found on pages 18-21 of this report.

Every year, the testing performed at PHL plays a key role in supporting the mission of MDH: to protect, maintain, and improve the health of all Minnesotans. Here at PHL, we screen newborn babies for treatable heritable disorders. We monitor for the emergence of new infectious disease organisms. We investigate infectious disease outbreaks, and test for the presence of harmful chemicals in the environment, in humans, and occasionally even in food and consumer products if contamination is suspected. We are even capable of detecting potential biological and chemical terrorism threats, such as anthrax and nerve agents.

All of this testing contributes to the critical work performed by our partners: divisions within MDH as well as other state agencies and federal partners. It is these robust partnerships that ultimately contribute to the well-being of the Minnesota community.

I encourage you to read more to learn more about the exceptional work of our laboratory and to see how PHL and our staff contribute to keeping Minnesotans healthy.

A handwritten signature in blue ink that reads "Joanne M. Bartkus".

Joanne Bartkus, Ph.D.
Public Health Laboratory Director

at a glance...



164,516

ANALYSES PERFORMED
TO TEST FOR CHEMICALS
IN WATER, SOIL, AIR, AND
HUMAN SAMPLES

131,045

TESTS PERFORMED TO
IDENTIFY INFECTIOUS
DISEASE TRENDS AND
OUTBREAKS

GLOSSARY: Here are a few acronyms you may find more than once in this report.

Abbr.	Meaning
APHL	Association of Public Health Laboratories
CCHD	Critical Congenital Heart Disease
CDC	Centers for Disease Control and Prevention
EPA	Environmental Protection Agency
MDH	Minnesota Department of Health
MNELAP	Minnesota Environmental Laboratory Accreditation Program
PHL	Public Health Laboratory
PMO	Project Management Office



pg. 4-7

471

MINNESOTA NEWBORNS IDENTIFIED WITH A DISORDER THROUGH NEWBORN SCREENING



pg. 16-17

83

ENVIRONMENTAL LABORATORIES ACCREDITED TO THE NATIONAL STANDARD

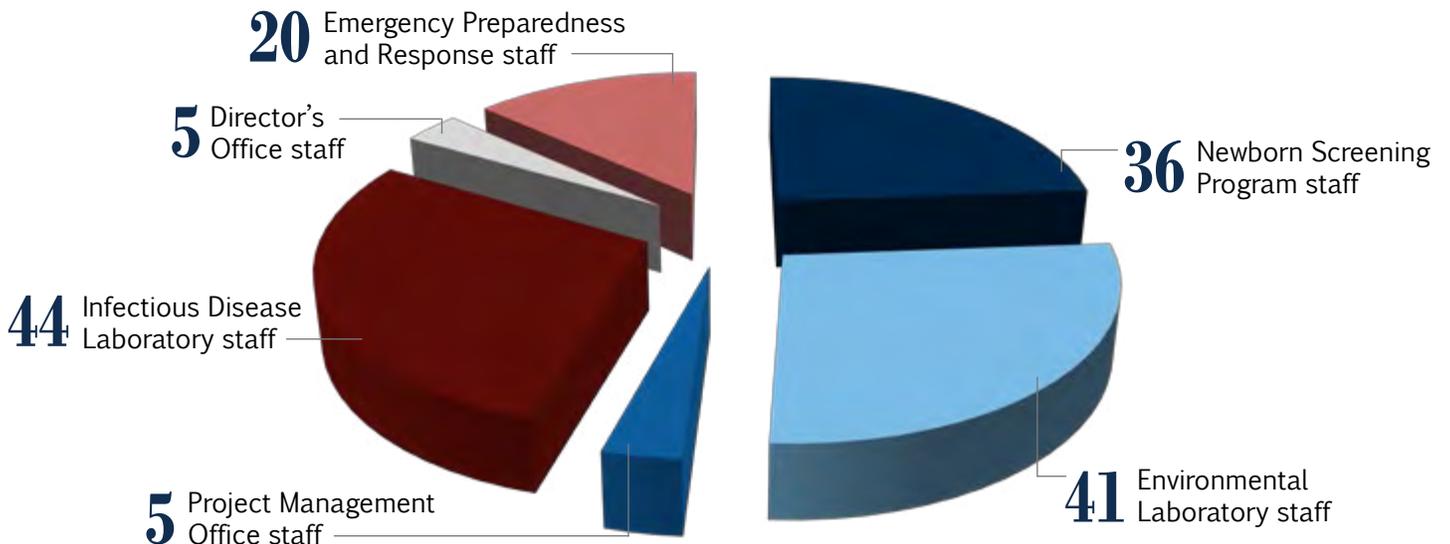


pg. 18-21

\$1.02

MILLION SPENT TO REBUILD AND RECOVER AFTER THE JANUARY WATER LEAK INCIDENT

PHL staff by program



Numbers reflect staff totals as of June 30, 2014 and do not include contractors.

Newborn Screening Program

The Newborn Screening Program screens infants at birth for over 50 serious disorders, including hearing loss and critical congenital heart disease (CCHD). Newborn screening aims to identify disorders before symptoms appear so that affected infants can receive prompt diagnosis and treatment to prevent serious health problems, developmental delay, or death.

Almost every day, our program identifies an infant with one of these health conditions. For a complete list of the disorders screened for in Minnesota, visit www.health.state.mn.us/newbornscreening/materials/factsheets/disorderpanel.pdf.



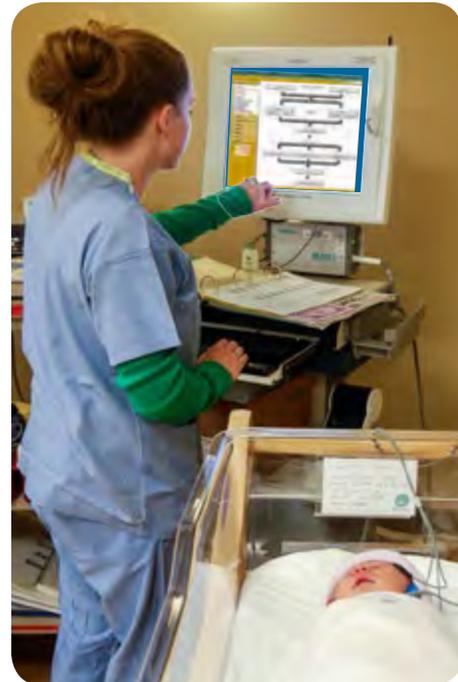


MNScreen allows for direct results reporting

We are thrilled and eager to begin the roll out of Minnesota's first fully-integrated, interoperable information system for the secure, direct reporting of hearing and pulse oximetry screening results. After months of careful planning and deliberation, the Newborn Screening Program awarded a contract to OZ Systems in the spring of 2014 to create MNScreen, a secure web-based newborn screening information system for point-of-care screening.

With direct reporting of results, we expect the new system to significantly improve the efficiency of follow-up care coordination for children who do not pass the newborn hearing and pulse oximetry screening. Screeners will be able to report screening results, document care, and refer newborns for any additional testing. Outpatient providers will be able to report diagnostic test results and refer newborns for other early interventions as needed, helping to improve access and reduce disparities in care.

MNScreen will also allow both the Newborn Screening Program and birth facilities to monitor their own screening programs on an ongoing, real-time basis, which will help improve services for all Minnesota newborns. Program staff members have begun working with hospitals throughout the state to implement the new system, and implementation is expected to continue through fiscal year 2015.





142

Newborns had a disorder detected by blood spot screening*



ALL

Minnesota hospitals began universal pulse oximetry screening for CCHD**



329

Newborns had hearing loss detected by hearing screening*

THIS YEAR'S NUMBERS

68,900

BIRTHS REGISTERED

68,826

INFANTS SCREENED*

*Data calculated by date sample/result was received

**Reporting and follow-up of results is set to begin in FY-2015

Grant awarded to improve testing for CAH

The Newborn Screening Program was a proud co-recipient this year of a grant from the March of Dimes to improve testing for congenital adrenal hyperplasia (CAH). The initiative, coordinated by the University of Minnesota and in partnership with the Centers for Disease Control and Prevention (CDC), will support the development of a new molecular test for CAH tailored specifically to Minnesota's population.

Because the new test will look directly for specific genetic mutations rather than relying on biochemical markers, we expect it to dramatically decrease both false positive and false negative results for Minnesota newborns—especially among those who are born sick or premature. To assess its accuracy, we will screen with both the current and new method for one year to compare results. If the new method proves better, it will become a part of routine screening for all Minnesota newborns.

CAH is a disorder that affects the way the body makes hormones. A newborn with CAH may have problems with growth and development, in addition to a host of more life-threatening symptoms, if not identified early and treated. Approximately one in 15,000 newborns is affected by the disorder.

Screening for immune disorder saves lives

Since the implementation of screening for severe combined immune deficiency (SCID) and related disorders in January 2013, two Minnesota newborns' lives have been saved after screening identified their disorder shortly after birth. Infants with SCID generally do not live past their first birthday unless they are diagnosed and treated within the first months of life.



The screening method used to detect SCID also identified eight newborns with other immune system deficiencies, who were then able to receive diagnosis and treatment. Early detection of these disorders not only saves lives, but also significantly reduces medical costs. SCID screening is now part of routine testing for all Minnesota babies.

Lawsuit and legal changes affect program operations

Over the past year, legislative activity and the settlement of a lawsuit have significantly affected how—and how long—leftover blood spots and test results may be used for program operations.

In December 2013, MDH settled a lawsuit filed against the Department in 2009 over the storage and use of newborn screening residual dried blood spots and test results. As required by a Minnesota Supreme Court ruling, the program destroyed approximately 1.1 million archived blood spots and 9.7 million test results following the settlement.

Then in May 2014, the legislature revised Minnesota's newborn screening law to allow MDH to retain blood spots and test results indefinitely—unless a parent or guardian chooses otherwise—and to use them for program operations without written informed consent from parents. This change significantly enhances our program's capacity to use blood spots and test results to control and improve laboratory quality by ensuring screening accuracy and improving test methods for Minnesota newborns.

MDH will continue to obtain written consent to use blood spots and test results for research or public health studies not necessarily related to newborn screening.

This year, our staff worked with PerkinElmer Genetics to set up a laboratory for **tandem mass spectrometry (MSMS)** testing at PHL.



Now, initial screening **for all 52** blood spot screening disorders on our panel takes place at PHL.

Environmental Laboratory

The Environmental Laboratory supports the environmental protection functions of state government by performing chemical, bacteriological, and radiological analyses of environmental samples including drinking water, surface water, waste water, air, soil, and hazardous waste. These testing services, which work to keep Minnesotans healthy and safe, are provided to programs at the county, state, and national level. The laboratory also develops new analytical methods for detecting contaminants of emerging concern and measuring human exposure to environmental hazards throughout the state.





Continued search for contaminants of emerging concern

Thanks to advances in technology and increased funding, our ability to identify contaminants in the environment continues to improve. This year we focused on measuring chemicals in Minnesota’s waters to understand their magnitude, distribution, and potential threat to both humans and the environment.

After developing a method to test for acrylamide last year, our laboratory staff analyzed samples from various water sources across the state. Acrylamide is a key ingredient in polyacrylamides, which are used to treat waste water, drinking water, and water used in the processing of sand and ore. In humans, acrylamide is neurotoxic and may potentially cause cancer.

Testing will continue on an ongoing basis, but so far our staff members have found all acrylamide levels to be below the Environmental Protection Agency’s (EPA) regulatory limit for drinking water, which indicates that the levels found in samples are not expected to affect human health. A peer-reviewed paper detailing our method and some of our sample analysis was published in the *Journal of Chromatography A* in March 2014.

Our laboratory staff also developed and validated a method to measure eight illegal drugs in Minnesota’s surface water. Some drugs, such as cocaine, have already been detected at low concentrations in local waters and have the potential to cause harm to aquatic wildlife.

Staff members are currently developing a method for measuring benzotriazols and benzothiazols—chemicals used to prevent corrosion in metals—which are toxic to aquatic organisms and bacteria. We expect to use both of these new methods to monitor surface waters throughout Minnesota in the coming year.

Choosing safer fish to eat reduces harmful exposures to contaminants such as mercury.



Expanded capacity to identify harmful exposures

Our biomonitoring capacity grew this year with the addition of two new methods for measuring human exposure to environmental hazards. Biomonitoring—or identifying and measuring potentially toxic chemicals in the body—plays a critical role in identifying populations who are at risk for exposure to unsafe hazards so that MDH can work to reduce or eliminate exposures of concern.

The two new methods allow us to identify fatty acids in blood plasma and a chemical called hydroxypyrene in human urine—an important biomarker that can indicate a person’s exposure to harmful chemicals. The lab now has a total of 16 methods to analyze 64 chemicals of concern in human samples.

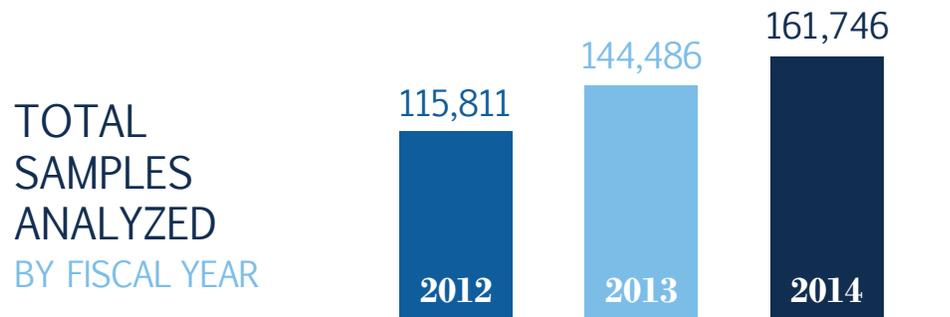
We are also involved in several ongoing studies in partnership with the MDH Chronic Disease and Environmental Epidemiology (CDEE) and Environmental Surveillance and Assessment (ESA) sections to assess the following potentially harmful exposures for Minnesota residents:

- Exposure to perfluorochemicals (PFCs) from water sources serving East Metro populations
- Exposure to mercury for pregnant women in the Lake Superior Basin and in urban Minneapolis populations, and for women of childbearing age in northern Minnesota
- Exposure to mercury, lead, and cadmium for newborns and pregnant women in three counties in southwestern Minnesota
- American Indians’ exposure to several contaminants in the Great Lakes region

Minnesota’s biomonitoring program continues to expand and evolve to meet the most pressing needs of Minnesota’s changing population and environment.

64

potentially harmful chemicals found in humans are tested at our lab.



Record-breaking totals of samples analyzed

As two special projects with laboratory clients moved into their final year of sampling this summer, our lab saw a sharp and unanticipated increase in the total number of samples received. By the time we felt the effects of the increase, it was too late to stop or slow the influx. Altogether, the sample volume was greater than any other busy season in our history.

Based on our experiences this year, program staff members have taken initiatives to make sure that all work can be completed on time and within quality parameters if another unexpected surge in samples were to occur. Internally, we are working to increase capacity through additional testing instruments in the areas that felt the largest impact. We are also seeking to cross-train more staff on higher priority tests.

The challenges in addressing the increased workload also revealed limitations in Minnesota's diverse laboratory network. We are currently working with both private sector and current laboratory partners to strengthen ties and support other labs in the accreditation process for certain tests. With a more robust network, laboratories will be better able to support each other in times of need.

Enhanced capacity for radiological response

We were honored this year to be selected as one of four laboratories nationwide to receive customized, on-site radiological emergency training. The Environmental Laboratory staff is now better prepared to play a significant response role in the case of a radiological event such as a nuclear power plant accident, dirty bomb, or other radiological material release in Minnesota or elsewhere in the United States.

Contractors funded by the EPA and the Federal Emergency Management Agency (FEMA) were on-site at PHL in June 2014 to provide training for all radiochemistry laboratory staff members. Training helped our team make significant improvements in the lab's emergency response, including sample receiving and electronic data sharing.

With the implementation of new, high-throughput sample screening methods, we will soon be able to begin testing a greater variety of samples more quickly when they arrive at our doors. The training also helped us identify new ways to use our analysis software to identify specific types of radioactive material with even greater confidence.



Infectious Disease Laboratory

The Infectious Disease Laboratory is composed of three laboratory units: microbiology, molecular epidemiology, and virology/serology. Throughout the year, we detect and identify a variety of bacteria, viruses, parasites, and fungi that impact the health of Minnesotans. Clinical laboratories throughout the state are required to submit specific organisms for our lab to provide diagnostic, characterization, and surveillance services that are not otherwise available in Minnesota.

PHOTO CREDITS

Salmonella photo: CDC/Melissa Brower
Vaccination photo: CDC/Debra Cartagena
Mosquito photo: CDC/James Gathany



Using whole genome sequencing to identify foodborne outbreaks faster

This year we took foodborne illness detection to a new level with the use of whole genome sequencing to help characterize and trace pathogens. The new technology allows us to analyze germs commonly found in foods and compare them to samples from sick patients. If the two match, we can better trace the source of an outbreak and keep others from getting sick.

Our laboratory was one of seven state health labs nationwide to receive a whole genome sequencer as part of the U.S. Food and Drug Administration's GenomeTrakr pilot network project this past year. The project aims to build a national database of sequences for diarrhea-causing germs from food, animals or the environment. Our staff members are also currently working to characterize *Salmonella enteritidis*—one of the most common types of *Salmonella* bacteria reported worldwide. Starting in April, we began sequencing all *S. enteritidis* strains collected from Minnesota patients as part of routine surveillance to see whether they came from a common source such as a contaminated food product.

Within the next few years, we hope to characterize several other foodborne pathogens—such as *Listeria*—that are prevalent in Minnesota so that state epidemiologists can better identify and halt outbreaks before they spread.



Testing for vaccine-preventable diseases

Measles, mumps, and rubella are generally considered diseases of the past. But recently, Minnesota and other states have seen a resurgence of many of these once-common infectious childhood diseases. As the only Minnesota laboratory that can test for many vaccine-preventable diseases (VPDs) like these, we play a critical role in identifying cases before they spread.

In fiscal year 2014, our staff members tested 73 specimens from Minnesota residents for measles and found four that were positive for the disease. As a part of the VPD Reference Center, our lab also tested 98 specimens from other states and identified 17 positives. This year was our first as a reference center—one of four in the country that provide support for other states in testing VPDs. Our laboratory will continue to provide support for 16 public health laboratories in combating the spread of these diseases.

With increasing international travel and growing pockets of unvaccinated people in the U.S., outbreaks of VPDs have cropped up across the country, including mumps at a Wisconsin college and measles in an Ohio Amish community. Rapid testing at our lab helps identify these highly contagious diseases before they lead to an outbreak.

Minnesota's first case of Lassa fever

Minnesota experienced its first ever case of Lassa fever this year, an acute viral illness that is related to—but less severe than—Ebola. Although our lab does not test for Lassa fever, our relationship with partners at CDC and our experience responding to rare and unexpected events helped ensure the disease was identified as soon as possible.

After the patient was hospitalized last April, our lab packaged and shipped specimens to CDC in Atlanta, Georgia for testing within one day of collection, and a result confirmed the illness the following evening. Because the hospital was not equipped to handle such a rare disease, our laboratory handled all transport, paperwork, and communication to enable swift testing and results.

The patient, who contracted the fever after traveling to Liberia, made a remarkable recovery—considering the severity of his condition—after the quick results enabled treatment. Lassa fever is endemic in many parts of West Africa, but the United States had not seen a case in ten years.



1 Is this...?

- A. An award-winning photo of *Acinetobacter lwoffii*, a common cause of severe infections in healthcare settings
- B. An old bowl of jello found in the back of the refrigerator
- C. Lab-grown ruby crystals

PHOTO
QUIZ

How well do YOU
know your infectious
disease lab?!



2 Is this...?

- A. Rosie from the Jetsons
- B. R2D2
- C. A robot that sterilizes laboratory spaces



3 Is this...?

- A. The lab's wine tasting experiment
- B. Virus testing during influenza season
- C. Sample perfumes

Answers: 1) A 2) C 3) B



New tests for new diseases

As germs such as viruses evolve and spread, our laboratory continually develops and improves methods to identify and detect them. This year, staff members continued to prepare for an imported case of MERS-CoV—a potentially deadly viral respiratory illness circulating in the Middle East—and tested 54 specimens from ill travelers returning from the Arabian Peninsula. All Minnesota specimens tested negative for MERS-CoV, but many were positive for other viral infections such as flu.

Our laboratory also put in place testing for the locally-transmitted Jamestown Canyon virus, an infection spread by mosquitoes that can cause swelling in the brain similar to West Nile virus. In 2013, after CDC identified Minnesota's first case in recent years, we began the process to implement testing for the virus here at PHL. Testing began just in time for the mosquitoes to emerge in the early summer months of 2014, and we have since confirmed four new cases this year.

Project Management Office

The Project Management Office (PMO) was established in October 2013 to provide documentation, training, and analytic support for division projects. The goals of the office are to align our division work with strategic goals, support collaboration among division sections and programs, and streamline division processes and procedures. In addition to managing and housing the Minnesota Environmental Laboratory Accreditation Program (MNELAP), PMO staff members are also responsible for general administration and reporting, records management, audits, training, the website, and project management for the division.

83

environmental laboratories are currently accredited by MNELAP

PMO staff coordinated the destruction of more than

12 tons

of data according to MDH record retention schedules



Third party assessors in action

Thanks to legislative changes in 2013, MNELAP now employs third-party assessors and assessor organizations to perform on-site evaluations of accredited environmental laboratories. To prepare for this change, our staff coordinated a selection committee comprised of seven members from the laboratory community to determine the qualifications for independent assessors and review applications from interested parties.

The committee has thus far approved 17 assessors and seven assessment organizations. All approved third party assessors are required to participate in MNELAP training prior to performing assessments with accredited laboratories.

To assist accredited laboratories in complying with the revised law, our program staff hosted three regional meetings throughout Minnesota to facilitate connections between laboratories and assessors. We also made webinars available for laboratories not able to attend in person. Since the implementation of the new law, third party assessors have performed 48 on-site assessments this fiscal year.

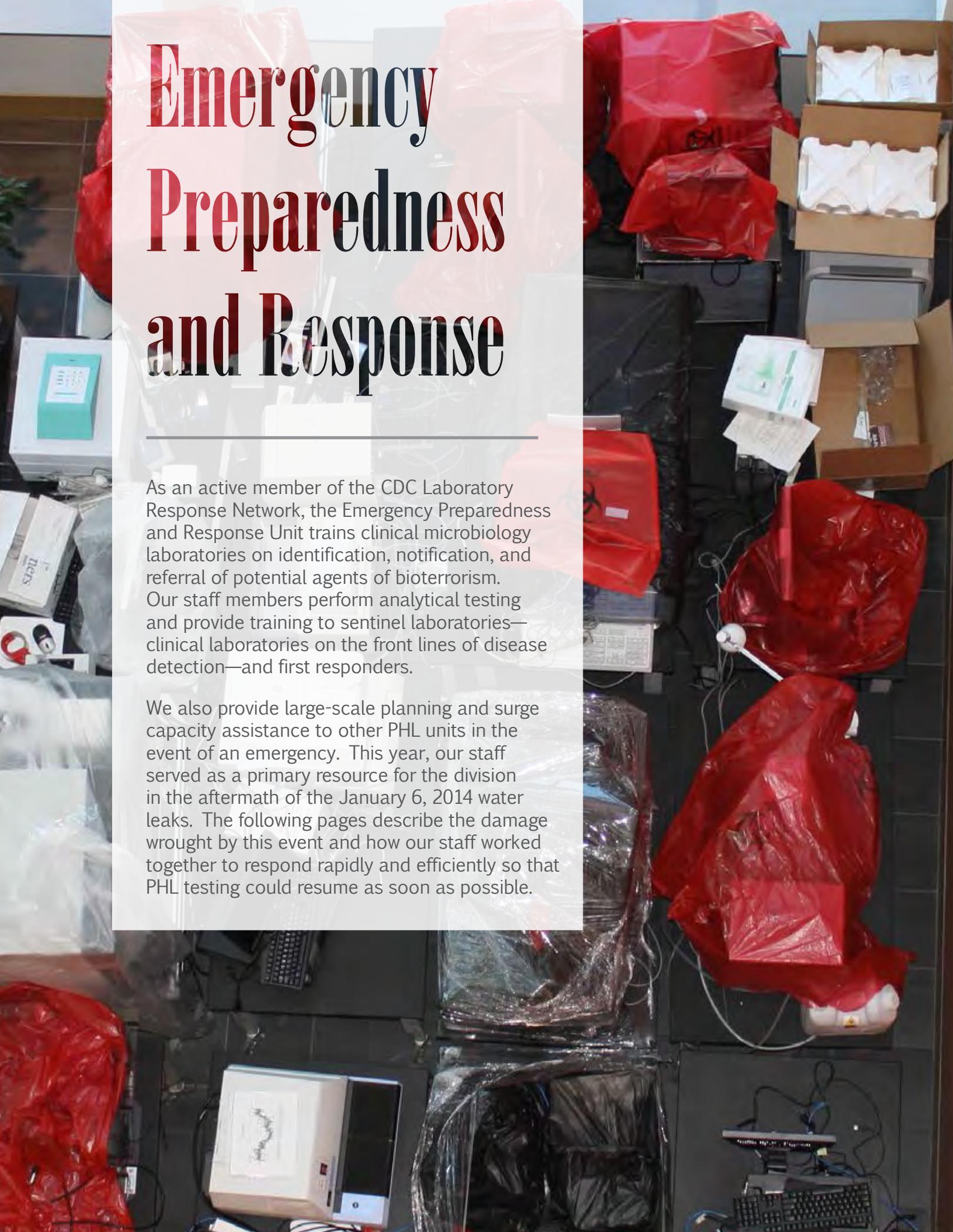
MNELAP receives certificate of recognition

Our MNELAP completed its triennial evaluation this year and received a certificate of recognition from the National Environmental Laboratory Accreditation Program (NELAP). Our program is one of 14 nationally-recognized accreditation bodies that assess and accredit laboratories to the requirements of the national standard.

New online MNELAP trainings

Our MNELAP program took training into the digital world this year with seven interactive web-based training modules for accredited laboratories and independent assessors. The webinars were designed for both newly accredited labs and long-standing partners who wanted a refresher course on how to use our online database for storing and managing accreditation information.

The online presentations included software demonstrations with accompanying audio and closed captioning for hearing impaired users. We expect the trainings to increase data accuracy and reduce staff time for both MNELAP and external laboratory staff.



Emergency Preparedness and Response

As an active member of the CDC Laboratory Response Network, the Emergency Preparedness and Response Unit trains clinical microbiology laboratories on identification, notification, and referral of potential agents of bioterrorism. Our staff members perform analytical testing and provide training to sentinel laboratories—clinical laboratories on the front lines of disease detection—and first responders.

We also provide large-scale planning and surge capacity assistance to other PHL units in the event of an emergency. This year, our staff served as a primary resource for the division in the aftermath of the January 6, 2014 water leaks. The following pages describe the damage wrought by this event and how our staff worked together to respond rapidly and efficiently so that PHL testing could resume as soon as possible.



Emergency response to ruptured water pipes in laboratory

When water began gushing from the PHL ceiling that frigid morning last January, we knew we had a crisis on our hands. Little did we know that the next twelve hours would be a real-life game of whack-a-mole, solving one leak only to have another one pop open somewhere else.

As temperatures reached -24 degrees Fahrenheit in the early hours of January 6, 2014, a faulty exhaust fan in the PHL building allowed cold air into the system and caused some of the water pipes for the heating, cooling, and sprinkler systems to freeze. Then as the building began to heat up as business hours approached, the thawing pipes burst, causing hot water to rain from the ceilings of all three floors of the eight-year-old building.

When the first pipes burst at approximately 7:15 am, laboratory staff members already on site quickly rallied to protect valuable equipment and within minutes established an incident command system to manage the crisis. Over the following days and months, all PHL staff and many other MDH units and divisions would play vital roles in making sure critical public health functions continued as needed and that the lab was back in working order as soon as possible.

The timeline on the following page outlines what happened next, and what plans and precautions have been implemented since to make sure a disaster of this sort will not happen again.

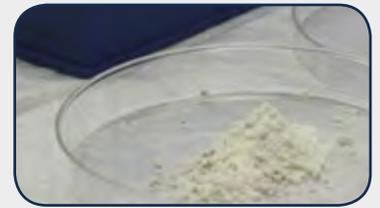
DAY 1: January 6, 2014

7:15 am — Initial water leak in newborn screening lab, followed by multiple leaks throughout the day

- On-site laboratory staff members scramble to move or cover lab equipment on all three lab floors
- Plant Management personnel assess the situation and shut off the water to damaged coils in the heating, cooling, and sprinkler system
- Most staff members are sent home by late morning, on-site testing is suspended, and lab partners are contacted and updated
- Newborn screening samples are shipped to PerkinElmer Genetics for testing
- Internal command system is established to manage the crisis
- Leaks are contained by **7 pm** and cleanup begins

MASS SPECTROMETER
WORTH **\$191,000**
IS SEVERELY DAMAGED
& NEEDS REPLACEMENT

APPROXIMATELY
40 COMPUTER
COMPONENTS
ARE DAMAGED AND
NEED REPLACEMENT



1 pm

FBI requests our assistance in testing a letter containing white powder delivered to a Capitol Complex building

- MDH Facilities Management determines our exhaust fans can be turned on for certain labs
- Staff members test the powder, which was non-hazardous



\$52,000
ESTIMATED COST
OF INITIAL CLEANUP

DAY 2: January 7, 2014

- No additional water leaks appear
- Substantial progress is made on cleanup
- Repairs to coils in the heating, cooling, and sprinkler system are underway—the source of the leakage
- Labs in Wisconsin and Iowa are contacted and agree to provide testing assistance if necessary
- Rabies testing is relocated to the University of Minnesota Veterinary Diagnostic Laboratory
- Newborn screening samples continue to be shipped to contract lab for testing
- Most environmental and infectious disease testing remains suspended



DAY 4: January 9

- All repairs to coils in the heating, cooling, and sprinkler system are complete
- Immediate cleanup is nearly complete
- Infectious disease testing resumes
- Water testing resumes, while some environmental testing is temporarily subcontracted out
- **27** staff members with damaged cubes are relocated



TODAY

- Total estimated cost of damage to the building was **\$482,000***
 - Estimated cost of damage to lab equipment and staff time devoted to recovery was **\$488,522***
- *partially covered by insurance

DAY 9: January 13, 2013

- PHL staff members meet to conduct an internal review of the incident and recap what went well and what needs improvement

DAY 3: January 8

- All laboratory staff are back at work
- On-site newborn screening testing resumes
- Staff members make preparations to resume infectious disease testing
- Cleanup of lab and office spaces continues



MARCH

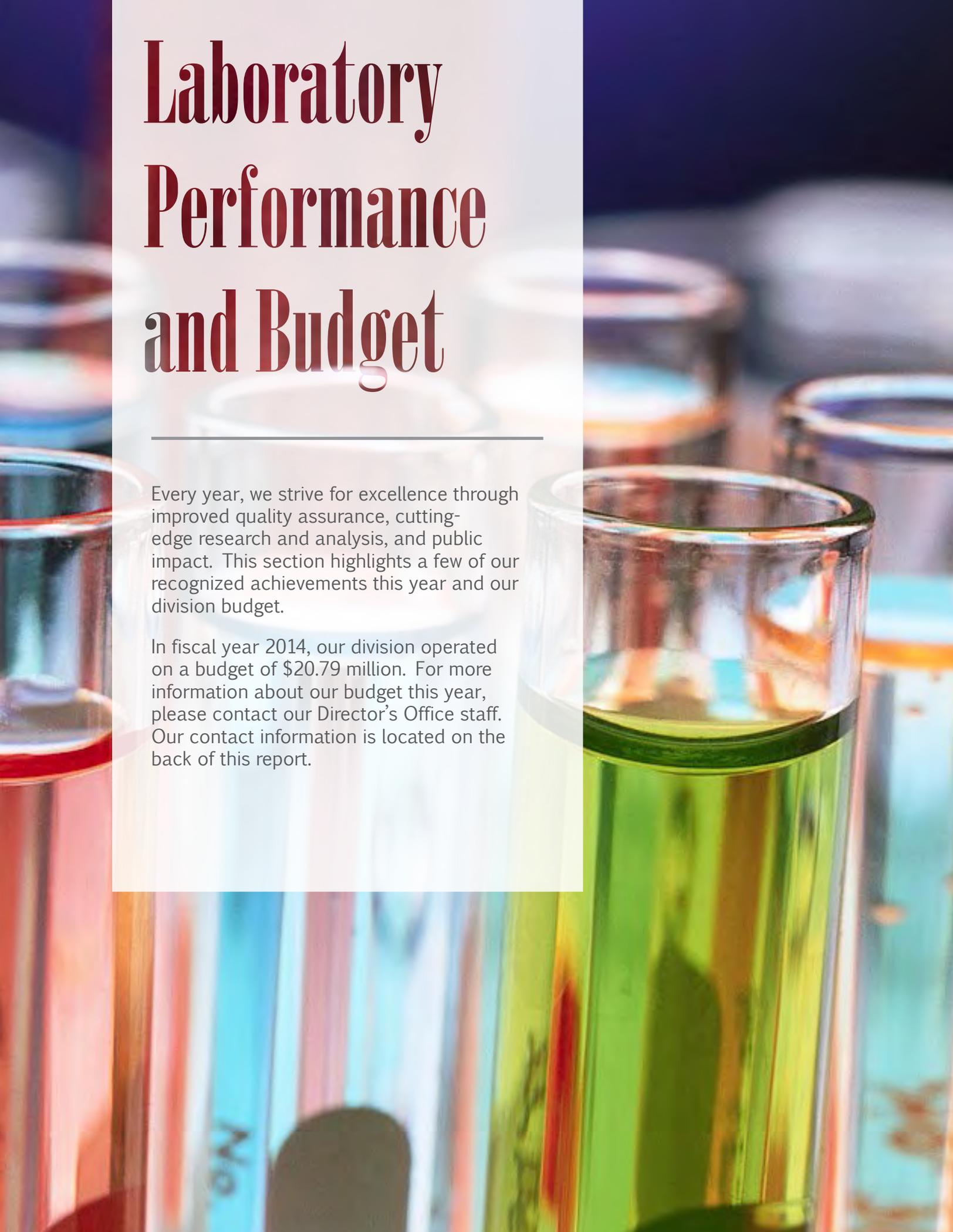
- All laboratory spaces are fully functional

APRIL

- All office space repairs are complete and staff members are in permanent locations

JUNE

- Results from a third party Root Cause Analysis and Preventive Action presented to MDH to determine what went wrong and how to prevent it from happening again

A background image of a laboratory setting. In the foreground, several test tubes are visible, some containing colored liquids (red, green, blue). In the background, there are petri dishes and other laboratory equipment, all slightly out of focus. The overall lighting is bright and clinical.

Laboratory Performance and Budget

Every year, we strive for excellence through improved quality assurance, cutting-edge research and analysis, and public impact. This section highlights a few of our recognized achievements this year and our division budget.

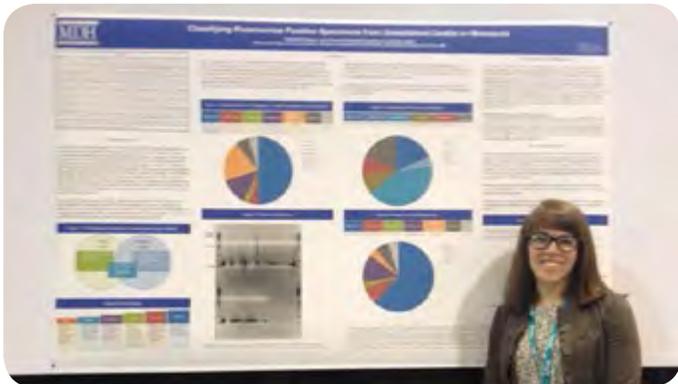
In fiscal year 2014, our division operated on a budget of \$20.79 million. For more information about our budget this year, please contact our Director's Office staff. Our contact information is located on the back of this report.

awards

Healthiest Laboratory Award — We were proud runners-up this year for the Association of Public Health Laboratory’s (APHL) Healthiest Laboratory Award, which celebrates excellence in environmental stewardship and health promotion in both practice and policy.

Paula Snippes, microbiology supervisor in the Infectious Disease Laboratory, received APHL’s Committee Service Award for her work on the Laboratory Systems and Standards Committee.

Rachelle Reneau, bacteriologist in the Infectious Disease Laboratory, received honorable mention for her poster on classifying picornavirus-positive specimens from unexplained deaths in Minnesota. Her poster was presented at the APHL annual meeting in June of 2014.



PHL Staff Star Award Winners:

- ★ Lynn Boysen
- Jeff Brenner
- Angela Jacobsen
- Stefan Saravia
- Maureen Sullivan
- Samantha Tostensen
- Sara Vetter
- Dave Boxrud
- Gracia Johnson
- Amy Hietala ★

The MDH Star Honors Program allows staff members to formally recognize colleagues at all levels for their exceptional accomplishments and outstanding contributions which are models of public service. A limited number of Star Honors are awarded each year.



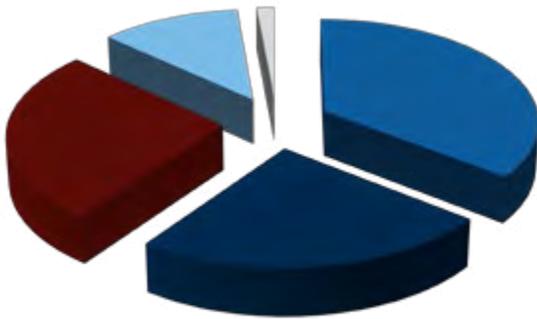
PHL BUDGETS



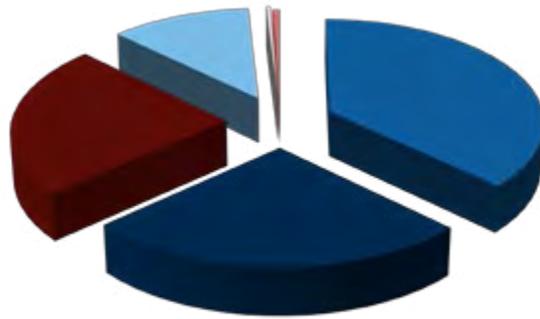
For past annual reports and budgets, visit: www.health.state.mn.us/divs/phl/pastreports.html
For a description of fund categories, visit: www.health.state.mn.us/divs/phl/funds.html

budget breakdown by fund categories

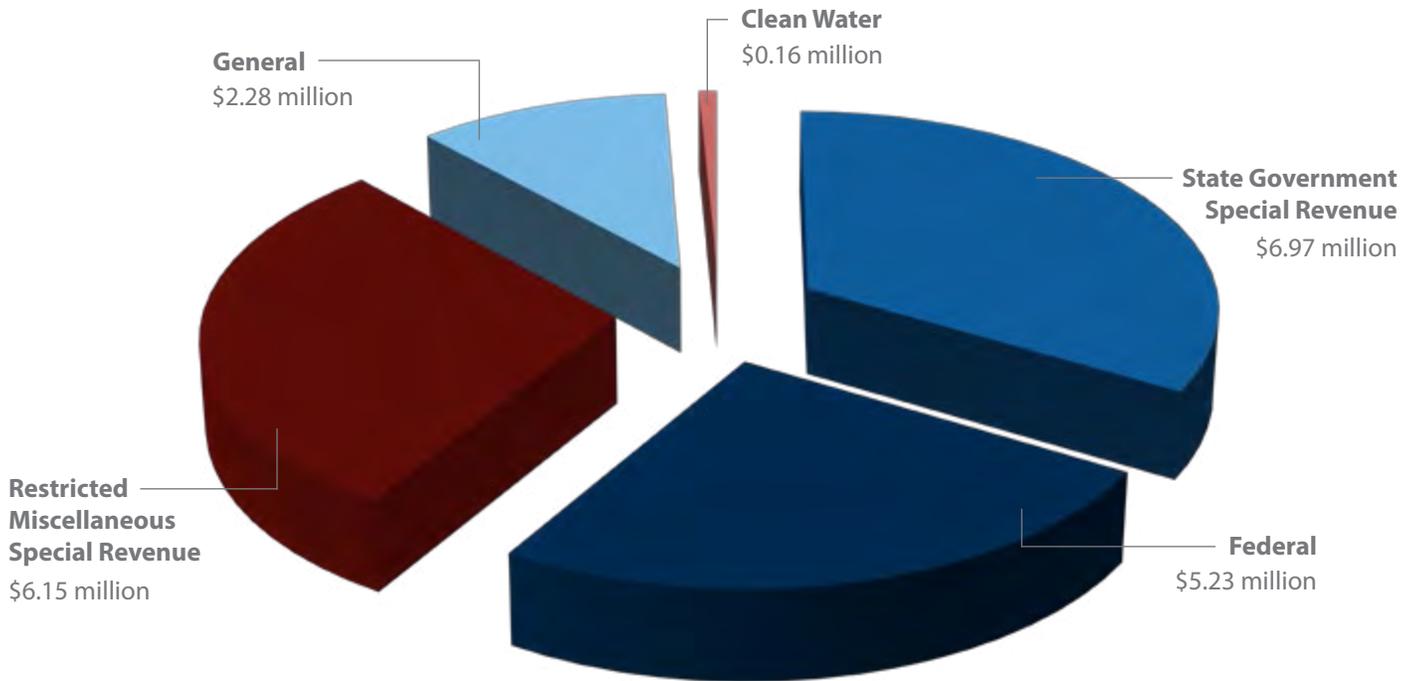
2012



2013



2014



MINNESOTA DEPARTMENT OF HEALTH
PUBLIC HEALTH LABORATORY

mail PO Box 64899
St. Paul, MN 55164-0899

visitor 601 Robert Street North
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SCIENCE · COLLABORATION · RESPECT · INTEGRITY · ACCOUNTABILITY



Photo courtesy of APHL



Protecting, maintaining, and improving the health of all Minnesotans