Wisconsin State
Laboratory of Hygiene
UNIVERSITY OF WISCONSIN–MADISON

Wisconsin State Laboratory of Hygiene

Your Laboratory Partner in Public Health

WI Division of Public Health's
New Public Health Professionals Orientation

October 16, 2015

Objectives

- The role of the State Lab of Hygiene's partnership with WI DPH
- Functions of the State Lab of Hygiene
- Introduction to the divisions of State Lab of Hygiene

Beginnings…

1903 Laws of Wisconsin Chapter 344:

$1,500 appropriated annually to UW for establishment and maintenance of a hygienic laboratory in connection with existing bacteriological laboratories.

The WSLH's first lab was in the basement of Agriculture Hall on the UW (now UW-Madison) campus. *Photo courtesy of UW Archives*

WSLH in the Statutes: 36.25 (11)(a)

The laboratory of hygiene shall be attached to the University of Wisconsin-Madison … and shall provide complete laboratory services in the areas of…

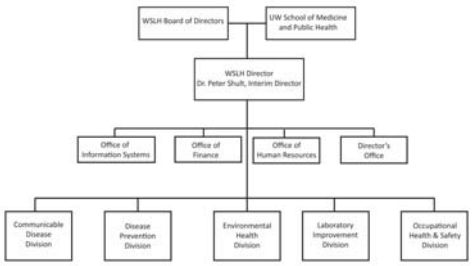
- water quality, air quality
- public health and contagious diseases for appropriate state agencies…

WSLH in the Statutes:

Laboratory shall be operated to furnish a complete laboratory service to the **Department of Health Services** and the **Department of Natural Resources …**

… and make available to the (UW) System, the DHS and the DNR such facilities for **teaching in the fields of public health and environmental protection** as may be derived from such a laboratory.

Organization



WSLH Staffing

The WSLH has more than 300 employees, including:

- Faculty and academic staff
- Laboratory scientists
- Occupational health specialists
- IT, business and administrative staff
- Research assistants and postdoctoral fellows

What do we do?

Public Service:

- Reference testing
- Teaching
- Research
- Outreach
- Program Services

State Lab Facilities

465 Henry Mall -- UW campus

- Communicable Disease Division
- Disease Prevention Division
- Administration

2601 Agriculture Drive – Madison's east side

- Environmental Health Division
- Occupational Health Division (WOHL, WisCon)
- Laboratory Improvement Division (WSLH Proficiency Testing)

2810 Walton Commons – Madison's east side

- IT
- Occupational Health Division (Bureau of Lab Statistics/OSHA)

Communicable Disease Division

WSLH Clinical Customer Service:

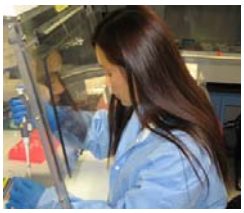
800-862-1013

608-262-6386

Communicable Disease Division

Provide a broad range of reference testing including:

Tuberculosis, rabies, pertussis, HIV, hepatitis, influenza, salmonella, measles, polio, sexually transmitted infections, legionella, Lyme disease, tularemia, diphtheria, anthrax, encephalitis...



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Communicable Disease Division

- CDC LRN – Bioterrorism/Biological Emergency laboratory response and coordination
- Outbreak Response
- Development of selective screening criteria - how to screen populations for diseases cost-effectively
- CDC pulse-net "fingerprinting" of deadly pathogens – food and waterborne outbreaks
- Lab Surveillance

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Communicable Disease Division

Research, Education and Training

- UW and MATC courses
- APHL fellowships, UW-LAX rotations
- WI Clinical Laboratory Network (WCLN)

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WCLN (WI Clinical Lab Network)

- 130+ clinical laboratories across WI – coordinated by WSLH
- WCLN is subset of national Laboratory Response Network for bioterrorism/ emerging infectious diseases/other PH threats or emergencies.
- **WCLN** members **KEY** to WSLH and DPH lab-based surveillance activities and outbreak response
- Regional Meetings (PH encouraged to attend)
- Training (teleconferences, workshops, exercises, etc.)
- Listserv and Lab Messages
- More info. on WCLN Web site -- http://www.slh.wisc.edu/wcln-surveillance/

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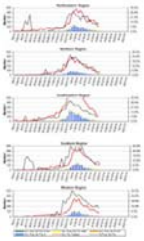
Lab-Based Disease Surveillance



- Reports on WSLH web site (http://www.slh.wisc.edu/wcln-surveillance/)
- Bacteriology
- Virology (influenza, RSV, other respiratory, rotavirus)
- Mycobacteriology (TB)

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Electronic/Web-based Lab Reporting

Laboratory reporting is a critical component of disease surveillance and outbreak response.

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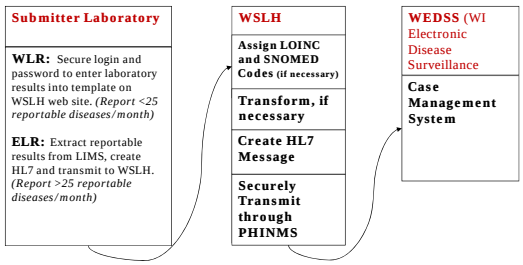
Electronic/Web-based Lab Reporting



Electronic/Web-based Lab Reporting

WLR/ELR messages go into WEDSS "staging area" where:

- A disease is assigned
- A health department of jurisdiction is assigned based on the patient's address
- "Alerts" are sent to the health department of jurisdiction if that LHD chooses
- LHDs import into WEDSS and follow up on the message

Electronic/Web-based Lab Reporting

- ELR/WLR will replace paper-based reporting from the laboratory.
- ***Immediate telephone notifications are still required for those diseases or conditions specified in the statutes and healthcare providers are still required to provide reports of reportable disease conditions.***
- WLR/ELR does ***not*** replace these statutory requirements.

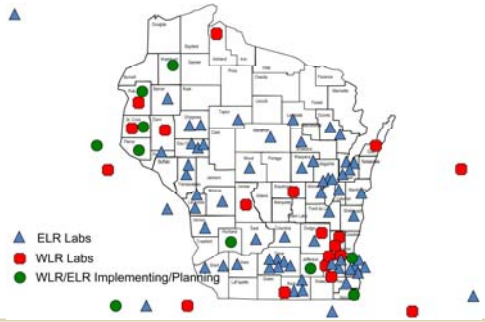
Electronic/Web-based Lab Reporting

Provider Reporting

- Continue on paper
- Report through web directly into WEDSS
- Providers are able to see WLR/ELR messages from their laboratory

Current Status of ELR/WLR Implementation

Completed: 73 WI Labs, 5 National Labs & 4 Out-of-State Labs



Disease Prevention Division

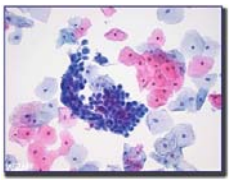
WSLH Clinical Customer Service:

800-862-1013

608-262-6386

Disease Prevention Division

Cytology



- ThinPrep® Pap Test™ and HPV testing
- Cytotechnology Certificate Program (affiliated with UW-Madison Genetics Department)

Disease Prevention Division

Newborn Screening

- Testing ~65,000 Wisconsin newborns per year
- Detection of 44 metabolic conditions that can lead to permanent disabilities and/or death + hearing and heart screening performed at hospital and reported on NBS submission cards
- WI Newborn Screening Program administered by WI DPH and WSLH

Disease Prevention Division

Genetics

Cytogenetics and Molecular Genetics

Chromosomal analysis for genetic defects

- Oncology, Prenatal, Postnatal
- Teaching - medical genetics
- Research - cause - cure for genetic abnormalities

Biochemical Genetics

Diagnosis and monitoring of inborn errors of metabolism. Works closely with WI Newborn Screening Program.

Environmental Health Division

Environmental Sciences and Toxicology
Customer Service

800-442-4618

608-224-6202

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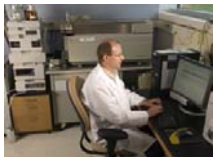
Environmental Health Division

Chemical Emergency Response



- One of 10 CDC-designated Level 1 chemical emergency response labs in U.S.
- Serve as a surge capacity lab for CDC

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Environmental Health Division

Drinking Water Quality

- Water microbiology for state and federal agencies
- Public water supplies - Safe Drinking Water Act (SDWA) requirements
- Private well owners – microbiology, fluoride, nitrate, lead, arsenic, radon
- Microbial Source Tracking to determine source of contamination

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Environmental Health Division

Pollution & Ecosystem Quality

- Solid and hazardous waste - compliance and enforcement samples
- Environmental Toxicology - testing water for toxic effluents using living organisms
- Trace Elements Clean Lab – quantifying to the parts per billion and parts per trillion levels
- Fish advisories -- Mercury

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Environmental Health Division

Outdoor Air Quality

- Research on measurement and characterization of emissions from air pollution sources
- Ambient air monitoring for DNR attainment standards and health advisories

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Environmental Health Division

Clinical Metals Toxicology

- Childhood lead testing
- National blood lead proficiency testing program
- Reference testing for other metals in human samples

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Environmental Health Division

Forensic Toxicology

- Alcohol and drug analysis for law enforcement agencies in support of Wisconsin impaired driving laws
- Court testimony on laboratory findings
- Coroners - motor vehicle and other death investigations

Occupational Health Division

WI Occupational Health Lab (WOHL)
800-446-0404

WisCon – Onsite Safety and Health Consultation Program
800-947-0553

Bureau of Labor Statistics
608-221-6289

Occupational Health Division

Wisconsin Occupational Health Laboratory (WOHL) scientists offer comprehensive industrial hygiene analytical services to 45 state OSHA consultation programs, as well as businesses and industrial hygiene consultants nationwide.

WisCon On-Site Safety and Health Consultation Program industrial hygiene and safety consultants, engineers, and nurses provide free safety and health consultation and training services to small businesses throughout Wisconsin to help these employers provide safe and healthy workplaces for their employees and meet federal OSHA obligations and responsibilities.

Bureau of Labor Statistics/OSHA Statistics Unit analysts collect, analyze and publish workplace injury, illness and fatality data from Wisconsin employers to identify workplace hazards and problem areas, educate workers and employers about workplace safety issues, and evaluate the effectiveness of interventions.

Laboratory Improvement Division

WSLH Proficiency Testing

- **Clinical** labs – more than 3,000 in U.S. and internationally
- **Environmental** labs – Wisconsin only
- 800-462-5261

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24 Hour Emergency Hotline

You can contact the

Wisconsin State Laboratory of Hygiene

for emergencies 24/7 at

608-263-3280

(our emergency answering service).

WISCONSIN STATE LABORATORY OF HYGIENE - UNIVERSITY OF WISCONSIN

State Lab of Hygiene Key Contacts

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