

# Oregon State Public Health Laboratory

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Hillsboro, OR



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Laboratory Director

# General Microbiology

- The General Microbiology (GM) Section's primary role is to test for significant public health pathogens and assist our clients and public health partners in diagnosis, surveillance testing, and outbreak investigations.
- GM receives over 10,000 specimens per year and provides testing for foodborne pathogens, high profile antimicrobial resistant pathogens, agents of bioterrorism, and other significant organisms such as *M. tuberculosis*, *N. meningitidis*, *B. pertussis* and rabies.
- Recently the OSPHL received CDC certification to perform whole genome sequencing of *Salmonella*, Shiga-toxin producing *E. coli*, *Campylobacter*, *Listeria* and *Shigella*.



*Salmonella*



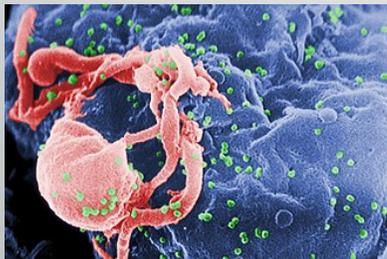
Illumina MiSeq



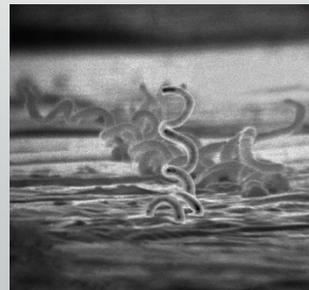
*E. coli* O157:H7

# Virology/Immunology

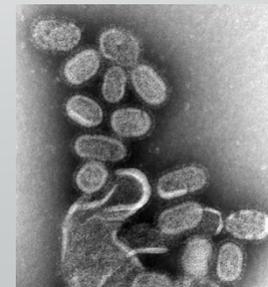
- Our clients are primarily the local health departments and not for profits like Planned Parenthood, Virginia Garcia, Community Colleges or other community organizations.
  - Very few of our tests currently come from the private sector except for influenza surveillance testing.
- The section participates in studies financed through federal grants (e.g. EIP, ELC, and PHEP) as well as in collaborative studies (e.g. Medically Acute Assisted Gastroenteritis Event or MAAGE study for GI viruses) with partners such as Kaiser and the CDC.
- In 2017, ten section employees performed approximately 160,000 tests on 94,000 specimens.
- The expertise in the section covers a wide range of diagnostic methodologies from the very old (syphilis RPR) through modern established (molecular, such as NAAT for CT/GC and quantitative PCR for respiratory and gastrointestinal pathogens) to the very new (automated Sanger sequencing for gastrointestinal viruses and next generation sequencing).



HIV



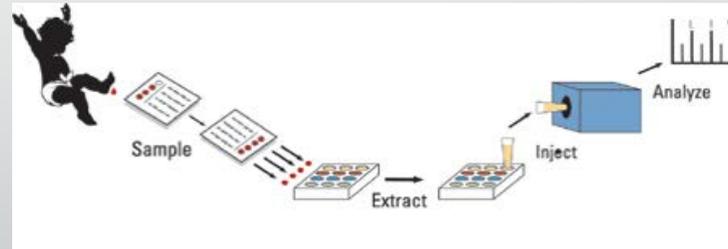
*Treponema pallidum*



Influenza Virus

# Newborn Screening Program

- Regional, fee-based program that provides screening and short-term follow-up for 5 states, assorted military bases worldwide, Guam, Saipan, and the Navajo Nation
- 128,000 infants tested per year for over 50 disorders
- Over 10,000,000 tests performed each year
- In 2016 there were 4904 presumptive positive infants, resulting in 211 confirmed cases



# Laboratory Response Network (LRN) & Select Biological Agents (SA)

- OSPHL is the only LRN Reference Lab in Oregon and provides testing and training for highly pathogenic Select Agents, such as anthrax, plague, ricin, etc.
- LRN testing must only be conducted in high containment biosafety level 3 laboratories.
- LRN training focuses on requirements for packaging and shipping, reporting to the CDC and emergency preparedness.
- Key partners are the CDC, FBI, first responders/Hazmat, other LRN labs, Public Health Emergency Preparedness staff and all clinical sentinel laboratories and hospitals within the state.
- Select Agent activity is heavily regulated and OSPHL is inspected and certified by CDC.



# Laboratory Operations

- Facilities management, project management
- Laboratory information management system administration
- Safety program management
- Statewide courier monitoring and coordination
- Specimen receipt and processing
- Communicable disease (CD) and Newborn Screening (NBS) data entry
- CD and NBS kit preparation and shipment
- Category A & B infectious shipping
- Reception services
- Purchasing, receiving, mail processing



BSL-3 HVAC



VIROLOGY/IMMUNOLOGY REQUEST		Oregon State Public Health Laboratory P.O. Box 173, Portland, OR 97201-0275 Information: 503-683-4100	
PATIENT INFORMATION		Submitting facility	
Patient last name, first, middle initial Doc, Jane		Example Clinic 123 Test St Portland, OR 97201	
Date of birth (mm/dd/yyyy) 01/01/1991	Gender <input checked="" type="checkbox"/> Female <input type="checkbox"/> Male	Patient ID/chart number 12345	Physician Smith, John MD
Race <input type="checkbox"/> American Indian or Alaska Native <input type="checkbox"/> Asian <input type="checkbox"/> Black or African American <input type="checkbox"/> Native Hawaiian or Other Pacific Islander <input checked="" type="checkbox"/> White <input type="checkbox"/> Multirace <input type="checkbox"/> Other <input type="checkbox"/> Unknown <input type="checkbox"/> Declined		Physician or Laboratory <input checked="" type="checkbox"/> Physician or Laboratory <input type="checkbox"/> Unknown <input type="checkbox"/> Declined	
Patient street address 123 N Example Ln		PATIENT INSURANCE INFORMATION	
City Portland	State OR	City 97201	Insurance plan name Sample Insurance
County of residence Multnomah	Country of residence		Policy or Member ID ABC123
Date of collection 01/01/2015	Subtest number	Study	Group ID 0123
SPECIMEN INFORMATION		Diagnosis ICD-9 code for test 00.0	
Specimen source <input type="checkbox"/> Blood <input type="checkbox"/> Urine <input type="checkbox"/> Sputum <input checked="" type="checkbox"/> Swab <input type="checkbox"/> Saliva <input type="checkbox"/> Serum <input type="checkbox"/> Other		Specimen identifier (YYYY)	

# Client Services

## Communicable Disease Testing

- Primary contact among the lab, approx. 5 other public health programs, and almost 300 clients for timeliness, continuity, accessibility, and quality of lab services.
- Specimen Quality
  - With lab colleagues, establish systems to ensure clarity of lab requirements
  - Activities: communications, web updates, data analysis, training, technical assistance
- Project and Contract Management
  - Electronic data exchange of lab orders and results
  - Memorandum of Understanding with Oregon tribes (in process)
  - Statewide courier services (Senvoy)
  - Billing vendor (Public Consulting Group, Inc.)



# Quality Management Officer

- Oversees the OSPHL Quality Management System.
- Ensure that the Laboratory Policies are current with changing regulatory / accreditation requirements.
- Verify that laboratory testing evaluation and performance conforms to defined standards / requirements.
- Oversees proficiency testing, continuing education, quality monitoring and internal assessment activities.
- Leads the Quality Assurance Committee.
- Serves as the OSPHL Records Custodian.
- Assists with updating Safety Policies and facilitating the Safety Committee.



# Laboratory Compliance

- Clinical Laboratory Regulations
  - Includes the Clinical Laboratory Improvement Amendments (CLIA) program, the Health Screen Testing (HST) permit and Substance of Abuse (SOA) registry license for the State of Oregon (excluding the OSPHL)
- Oregon Environmental Laboratory Accreditation Program (ORELAP)
  - Accreditation of environmental laboratories by ORELAP is based on the 2009 TNI Standard (and any amendments) and as described in OAR 333-064-0005 through OAR 333-064-0110 which mandates the accreditation of drinking water laboratories and cannabis testing laboratories.



# OSPHL Process Improvement and Special Projects

- Time capture of OSPHL tests and activities
  - A year-long project analyzing the time and cost of all OSPHL tests and activities to determine the true cost of the services provided by OSPHL.
- Obtaining an electronic ordering and inventory system
  - OSPHL is currently in the process of obtaining an electronic system to improve the efficiency of its ordering processes and inventory management, which will aide OSPHL meeting its federal regulatory requirements and save time and money.
  - Help with tracking when maintenance activities and service contracts are due.
- OSPHL employee survey
  - An employee survey was conducted in 2017 to gain staff input on how OSPHL can improve the work environment and the services it provides.