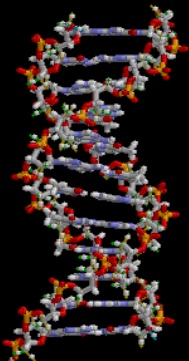


Alameda County Public Health Laboratory

Mark W. Pandori PhD HCLD (ABB),
Director

July 10, 2017

Alameda County Board of Supervisors' Health Committee



Who we are...

- A human diagnostic and environmental testing laboratory
- 11 Staff; 7 licensed Public Health Microbiologists
 - 2 summer interns from Oakland Tech High School
- Part of a statewide network of 33 public health laboratories across CA
- Part of a national network of public health laboratories



Our facility and location...



- New location in December 2014; Peralta Oaks, next to the Oakland Zoo
- 13000 square feet
- Building includes Coroner and Criminalistics laboratory
- Includes Biosafety Level 3 infrastructure
(highest is 4)

We are a certified lab...

- Certified by the Federal Government as a human diagnostic laboratory
- Certified by the State of California as a **Public Health Laboratory**
- Certified by the Environmental Laboratory Accreditation Program, State of California



We provide services to...

- Hospitals: primary TB and fungi diagnostic testing for:
 - Highland, Fairmont and Alameda
(same day turnaround)
- Community Organizations: STD, HIV, TB testing, examples:
 - La Clinica
 - Tiger Clinic
 - Local High Schools



We provide services to...

- Environmental Health Dept:
 - Drinking water
 - Recreational waters
- PHD Acute Communicable Diseases and Public Health nursing:
 - TB, Influenza, Bacteriology, Noro virus outbreaks



How much we do...

- 13566 tests in 2016
- On pace for approximately 15000 in 2017
- Top volume tests:
 - Latent / active tuberculosis
 - Water testing
 - HIV
 - Bacteriology



How are we different from the clinical labs in our County?

- We function as a medical diagnostic laboratory for ill or possibly ill *individuals*
- We function at the *population* level by generating surveillance data, and by supporting our Health Department in gathering intelligence and helping to resolve outbreaks

We are the Reference Laboratory for the clinical labs in our County:

- consultation on infectious disease testing matters*
- we resolve difficult organism identifications*
- conduit to State CDPH and CDC*



How are we different from the clinical labs in our County?

- Influenza surveillance: data goes to CDC for year to year vaccine decisions
- Salmonella, E. coli, Shigella surveillance
- Bioterrorism Preparedness



How are we different from the clinical labs in our County?



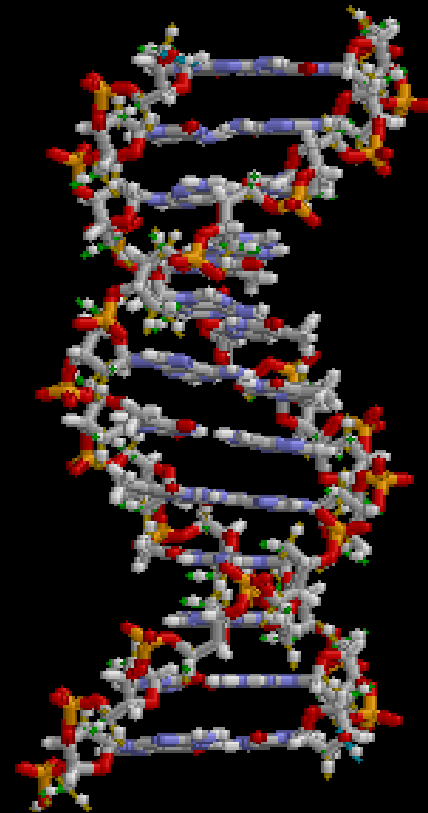
- We test animals for rabies; this is both mandated and essential, as clinical labs cannot perform such testing



- We can test environmental specimens

How are we different from the clinical labs in our County?

- We perform a limited amount of research:
 - Assess novel technologies to be able to assist local labs
 - Perform surveillance for epidemiologic purposes



Logistics



- We provide courier services for all of our clients
- We bill Medi-Cal and Private Insurance
- Customer service/consultation

Budget and Finance for FY 16-17:

- Total appropriations:
\$2,450,384



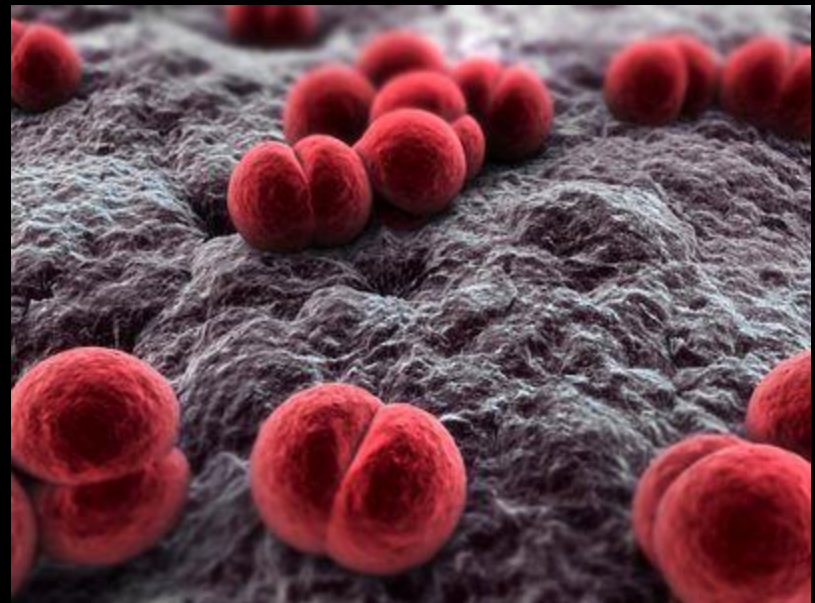
Income from billing for lab
services: \$449,003

Income from projects:
\$285,184

Lab net county cost:
\$1,291,462

Highlights

- Have added 8 new laboratory tests over the last two years such as:
 - Chlamydia/gonorrhea, measles, HIV viral load
- Performed an FDA clinical trial which led to approval of a novel syphilis testing technology

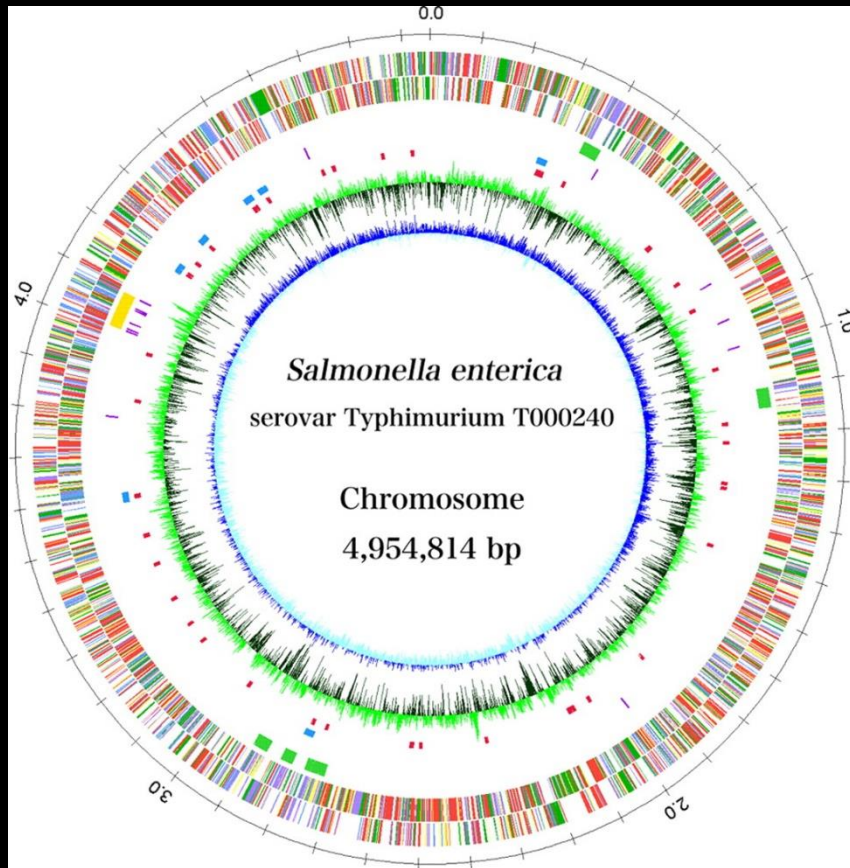


Highlights

- Taking part in a nationwide study to broaden the utility of DNA/RNA based Chlamydia and gonorrhea detection in furtherance of the Antimicrobial Resistance Leadership Group (NIH)
- We know that there are cases of these diseases that go undetected in Alameda County due to lack of testing options that will be fixed through this study



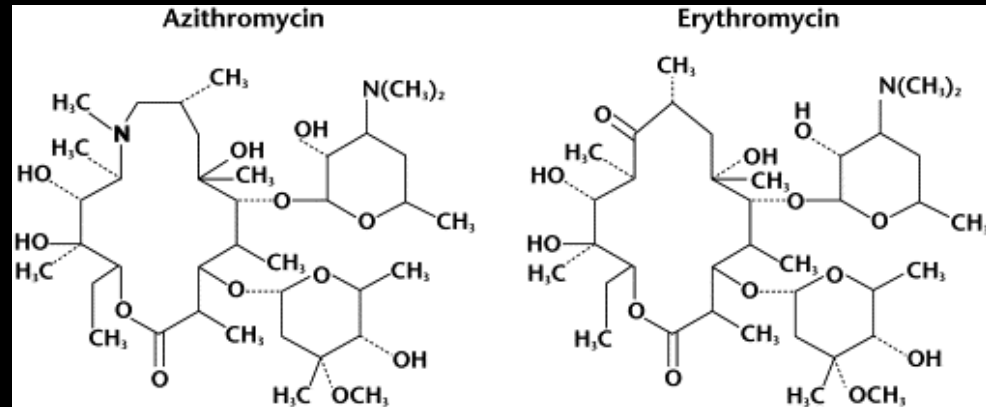
Highlights



- In 2016, we became the first public health lab in the U.S. to begin identifying all bacteria through DNA/genomic methods
- This allows gathering of massive amounts of information about the bacteria causing disease in Alameda County

Highlights

- These DNA-based methods allow:
 - Rapid drug resistance assessments
 - Rapid epidemiologic assistance: how are cases related? How are they spreading?
 - Focus resources for investigation



Highlights

Realizing a Technological Vision in Alameda County, California

by Nancy Maddox, MPH, writer

Alameda County, CA, like many communities in The Golden State, has been inhabited by an evolving mix of peoples through the centuries. First came the Ohlone Native Americans, who hunted on the lands surrounding modern-day San Francisco Bay. They were followed, in turn, by Spanish colonists, Mexican ranchers and a motley mix of American and Asian settlers. In 1853, Alameda County was officially established, carved from portions of adjacent Contra Costa and Santa Clara Counties.

From the beginning, the county has had a symbiotic relationship with its neighbor on the other side of San Francisco Bay. In the late 18th and early 19th centuries, Alameda County was a ferry and trolley car suburb of "Fog City." Since 1933, after the San Francisco-Oakland Bay Bridge linked the two jurisdictions, commuters can travel back and forth entirely by car or bus (or by underwater tube since 1967). Today, said Mark Pandori, PhD, HCLD(ABE), director of the Alameda County Public Health Laboratory, the county has its own, multi-faceted identity, although it remains linked to San Francisco. Sky high housing prices, for example, are driving many San Franciscans into East Bay, as the urban area immediately east of San Francisco Bay is known. Rents in Oakland—Alameda County's county seat and the largest East Bay city—are rising faster than anywhere else in the country. Yet even with the rising cost of living, Alameda County's population is "perhaps more diverse than any other Bay Area county," said Pandori, with large African-American, Asian, Latino and LGBTQ communities. The presence of the University of California (UC) at Berkeley, the prestigious flagship campus of the UC system, adds to the mix.

What's interesting is beyond the heavily urbanized zone, we have a huge rural zone east of the Oakland Hills.

Pandori said this diverse and peripatetic population of about 1.5 million makes TB, HIV and sexually transmitted disease (STD) testing priorities for the public health laboratory. "But what's interesting," he said, "is that beyond the heavily urbanized zone, we have a huge rural zone east of the Oakland Hills. There's quite a lot of rabies out there—recently, all in bats—and some Lyme-containing ticks in the southern end of the county." The laboratory tests for the rabies and speciates the ticks. The rural zone—easily over half of Alameda County's 821-square-mile area—is also home to a budding wine industry and, importantly, a number of aquifers, wells, lakes and streams. Testing these local waters, plus swimming pool water, supplies a major portion of the laboratory's business.

When Pandori assumed the directorship of the county's public health laboratory, he came with a "technological vision" that skewed toward advanced molecular testing. Almost three years later, much of that vision has been realized, with a heavy laboratory emphasis on PCR testing and whole genome sequencing (WGS).



Alameda County Public Health Laboratory

The building was erected in 2014 in a "pretty wooded glade" at the base of the Oakland Hills, just "a stone's throw away" from the acclaimed Oakland Zoo and even nearer to Interstate 580, a major freeway traversing northern California. The county coroner takes up the first floor; the public health laboratory, the second floor; and the county crime lab, the third floor. Because of the crime lab, said Pandori, the security is "absolutely through the roof," requiring entry through four separate cardkey-locked doors just to reach the public health laboratory. Once inside, however, visitors find the 13,000-square-foot facility has all the bells and whistles a modern public health laboratory demands, including one BSL-3 suite (currently certified as 2+). The laboratory, said Pandori, is "gorgeous."

Director

Pandori was born in Philadelphia, but raised mostly in San Jose, CA. He earned a BS in genetics from UC-Berkeley, and then decamped to Boston University, where he developed HIV assays for a year. After that stint, Pandori returned to the West Coast, earning a PhD in biomedical sciences from UC-San Diego under the tutelage of John Coates, MD, and Douglas Richman, MD, two stars of the HIV research community. A post-doctoral fellowship with Harvard Medical School took him back to the East Coast, where he conducted viral engineering for gene therapy at the Beth Israel Deaconess Medical Center, a teaching hospital for the medical school. Pandori then worked as a post-doc and instructor of medicine at Harvard Medical School for six years, before another cross-country trip to California, where, in 2005, he became chief microbiologist for the San Francisco Department of Public Health, working under the direction of Sally Liska, DrPH. In 2009, he gained a joint position as associate clinical professor of laboratory medicine at UC-San Francisco. And in 2010, after Liska's retirement, he assumed the position of laboratory director. The twin lures of a brand new laboratory and the opportunity to work with an esteemed colleague, Erica Pan, MD, drew him to his current post in the Alameda County Department of Public Health Laboratory in mid-2014.

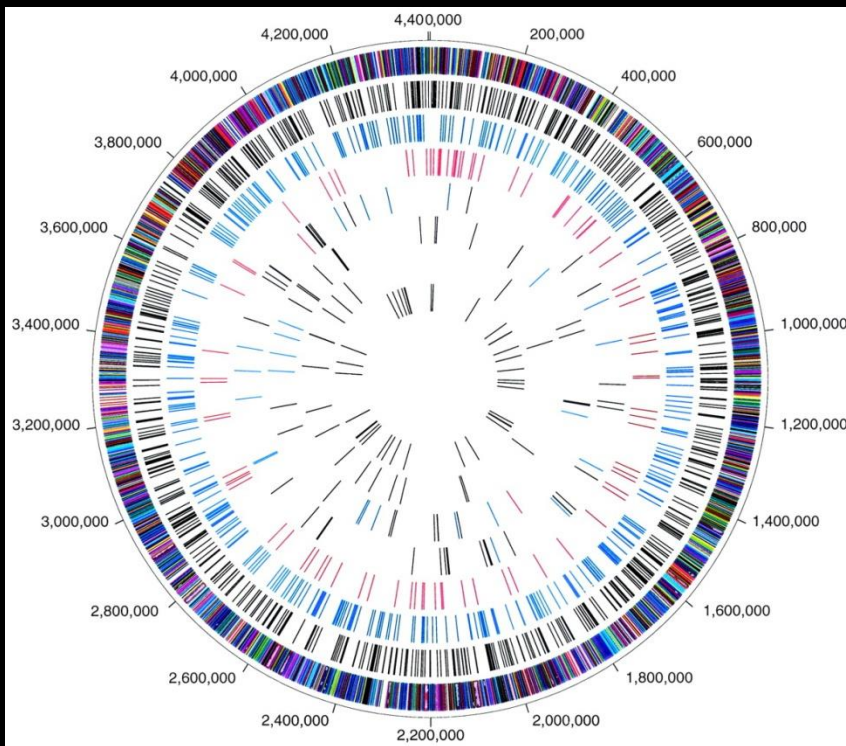
Staff

In addition to Pandori, the laboratory employs 10 people, including five full

Spotlighted in "Lab Matter", the national publication of the Association of Public Health Laboratories

Spring, 2017

Challenges



- Our position as a cutting edge Laboratory leads to many grant opportunities
- Many are relatively short term, and hiring on them is very difficult
- Need a way to be able to hire on grants more rapidly

Challenges

- Need to be able to more rapidly and flexibly establish electronic data connections with submitters
- Establish a network presence
- Extreme benefit to patients and clinicians if they could more quickly and conveniently access lab results



Challenges



- Laboratory requires certified staff microbiologists
- Only about 10-15 are created per year
- 30 public health labs in CA, and 1 State lab
- Competition for hiring

Thank you for your attention!

