



DELAWARE LABORATOR

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IMPLEMENTING CYSTIC FIBROSIS TESTING IN DELAWARE

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In the summer of 2006, the Delaware Public Health Laboratory (DPHL) will begin validating a test method for cystic fibrosis (CF) screening to be used to screen all babies born in Delaware. The incidence of CF is common, about 1 in 5,000 births (1 in 2,500 among northern Europeans). CF screening as part of the newborn screening panel has been recommended by the American College of Medical Genetics (ACMG), the American Academy of Pediatrics (AAP) and the March of Dimes, as well as the Delaware Newborn Screening Advisory Committee. Currently about 20 states screen for CF and many others are planning to add CF to their screening panel soon.

There have been many studies on the issue of CF as part of newborn screening. Some studies have shown that babies screened at birth and found to have CF have better growth and reduced risk of malnutrition when early treatments are established. Other reports indicate greater height-for-age and to a lesser degree, weight-for-age among children detected through screening. Still other studies suggest improved pulmonary outcome in children with CF who are identified in the first few months of life and treated promptly. In November 2003, the Centers for Disease Control and Prevention (CDC) and the Cystic Fibrosis Foundation cosponsored a workshop to review the benefits and risks associated with newborn screening for CF. The resulting report, *Newborn Screening for Cystic Fibrosis Evaluation of Benefits and Risks and Recommendations for State Newborn Screening Programs*, published in the October 15, 2004 issue of the Morbidity and Mortality Weekly Report, recommended the following¹:

“The magnitude of the health benefits from screening for CF is sufficient that states should consider including routine newborn screening for CF in conjunction with systems to ensure access to high-quality care.”

This statement recommends two things: 1) that states include CF in routine newborn screening testing panels; and 2) that testing is in conjunction with follow-up systems that ensure access to high-quality care. To implement a successful screening program for cystic fibrosis, DPHL, the screening laboratory, and the Newborn Screening Program staff will have to work closely together.

In Delaware, initial CF screening will be accomplished by measuring for Immunoreactive Trypsinogen (IRT) in the dried blood spot. The test will use the same blood specimens already collected. Infants who screen positive will be referred for definitive diagnosis.

Delaware currently requires two specimens on all babies, and utilizes extensive tracking mechanisms to assure both specimens are collected. This second specimen, which is collected at about two weeks of age, will also be tested for IRT. Delaware has chosen to do this IRT/IRT two specimen sequence as opposed to an IRT/DNA marker sequence on one specimen for several reasons: 1) unaffected carriers are less likely to be detected and therefore not require follow-up; 2) additional costs will be minimal; 3) no additional laboratory staff will be required; 4) additional laboratory space for new technology will not be necessary; 5) it will be easier to bring on one new technology at

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Special Points of Interest

- National Medical Laboratory Professionals Week



THE DELAWARE PUBLIC HEALTH LABORATORY CELEBRATES FIFTEEN YEARS IN SMYRNA

DPHL HISTORICAL TIMELINE



The Delaware Public Health Laboratory was established in April 1899 in Newark. The trustees of Delaware College, now the University of Delaware, provided space and renovations in the main building's east wing. The laboratory tested water and food, and for infectious diseases including diphtheria and tuberculosis. As technology evolved, the laboratory's testing capabilities expanded to include various bacterial and viral agents. To keep health care providers and agencies informed of significant developments, the laboratory began publishing a quarterly bulletin which today is called the Delaware LabOrator.

The lab moved five more times in a perennial search for additional space. First, the laboratory moved above Hinkley's Feed Store in Dover, its municipal home for many years. Then it moved to the Margaret O'Neill Building on Federal Street. In 1960, the lab moved to the basement of the Jesse Cooper Building across the street and, by 1985, the laboratory had outgrown its space. The discovery of Asbestos precipitated relocation to three modular buildings at the Department of Natural Resources and Environmental Control on Kings Highway in Dover.

By May 1989 plans were underway to build a new facility in Smyrna on the grounds of the Delaware Hospital for the Chronically Ill. The new lab opened in 1990.



Since then, the facility expanded its services by leaps and bounds. The lab's newborn screening section tests for metabolic diseases in every Delaware newborn to prevent mental retardation, serious illness, and even death. The laboratory tests drinking water for bacteria and chemicals, and identifies rabies. It also tests for sexually transmitted infections and monitors the emergence of drug-resistant microorganisms to prevent the spread of infection and save lives.

In 2001, the facility added a Bio-Safety Level III lab to the clinical microbiology section. Its new DNA-amplified testing for gonorrhea and chlamydia produces fast results for health care providers. The environmental and molecular microbiology section introduced new technology, including pulse field gel electrophoresis for food borne illness, molecular testing for *Norovirus*, *B. pertussis*, West Nile virus and rapid detection methods for potential bioterrorism agents.

DPHL embarks on a new journey in testing performance. The new Chemical Terrorism Laboratory detects metals at trace levels, and cyanide and nerve agents in clinical samples. The Bio-Level Safety III lab is redesigned to include a 100 square foot addition for testing samples of potential terrorist origin.

Jeff "The Inquisitor" Roberts joined Environmental & Molecular Microbiology as contract employee from Franklin Tech on February 13th. Jeff has a diverse background including pharmaceutical research and clinical drug testing. He graduated from Millersville University with a concentration in Biology. Jeff has proven himself to be a quick learner, thinker, and an asset to the lab. We are glad to have him aboard.

William Spinden received his laboratory technician training in the U.S. Navy in the 1980's. He was assigned to the Philadelphia Naval hospital where he worked in the Chemistry and Microbiology sections. After he left the Navy he worked for Astra Zeneca for 16 years in the microbiology lab. He currently resides in Bear, Delaware.

The DPHL is please to have both of our new staff members on board!

WELCOME



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"To Protect and Enhance the Health of the People of Delaware"

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NATIONAL MEDICAL LABORATORY PROFESSIONALS WEEK APRIL 23-29, 2006

The 2006 Lab Week will be held April 23-29, 2006. After 30 years of being called "National Medical Laboratory Week," the name has been changed to reflect the fact that a laboratory is more "people" than a "place." Starting in 2006, the observance will be called "National Medical Laboratory *Professionals* Week." The 2006 theme will also emphasize the women and men who provide answers and guide cures in healthcare.



LABORATORY PROFESSIONALS

Providing Answers. Guiding Cures.

National Medical Laboratory Professionals Week | 2006

For more information on National Medical Laboratory Professionals Week, visit the website for the American Society of Clinical Pathology at www.ascp.org/labweek.