CRITICAL LINK

John M. Colmers
Secretary

A Publication of the Maryland Department of Health and Mental Hygiene

The Laboratories Administration—Maryland's State Public Health Laboratory

PHASE Program Laboratory Internships

Projects and Students in the Division of Virology and Immunology

The Public Health Applications for Student Experience (PHASE) Program is a non-paid, for-credit internship program sponsored in partnership with the Maryland Department of Health and Mental Hygiene (DHMH), the Johns Hopkins Bloomberg School of Public Health (JHSPH), and the Mid-Atlantic Public Health Training Center (MAPHTC). This Program provides an opportunity for public health graduate students to obtain insight into how a degree in public health can be applied to practice-based careers outside academia.

Program Background

The main goal of the program is to give students "real-world" exposures and opportunities for hands-on experiences that are otherwise missing from the academic curriculum. The PHASE Program allows students to integrate knowledge acquired in course work and other learning experiences, and apply theory and principles in situations that expose them to possible careers in local and state health departments.

PHASE is currently limited to graduate students at the Johns Hopkins Bloomberg School of Public Health (see http://cha.maryland.gov/phase/index.cfm). For JHSPH students interested in the PHASE program at the Maryland DHMH Laboratories Administration, they should contact Dr. Maria Paz Carlos, PHASE preceptor, directly at carlosm@dhmh.state.md.us. Students may also visit the website at http://dhmh.maryland.gov/labs/html/lab-internship.html for additional information.

For non-JHSPH graduate students interested in an internship or fellowship at the Laboratories Administration, contact Dr. Maria Paz Carlos at carlosm@dhmh.state.md.lab

The PHASE program at the Maryland DHMH Laboratories Administration is entitled Public Health Internship with the Maryland Department of Health and Mental Hygiene's Division of Virology and Immunology. PHASE interns working in this Division gain laboratory experiences in clinical virology and immunology through public health laboratory testing, laboratory data analysis and collection, as well as laboratory information management. Interns have opportunities

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Questions concerning
technical content of this newsletter
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Dr. Jack DeBoy at 410-767-6100

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by the staff of the
Laboratories Administration
Department of Health & Mental Hygiene
201 W. Preston Street
Baltimore, Maryland 21201
(Phone 410-767-6909)

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to interact with laboratorians, epidemiologists, and may participate in outbreak investigations. During the internship, the students are expected to work on a long term project related to clinical diagnostics and associated data management and analysis. Possible projects include laboratory surveillance for influenza A and B viruses circulating in Maryland, development and strain typing of antiviral resistance testing for influenza viruses, epidemiological analysis of the CDC National Respiratory and Enterovirus Surveillance Program (NREVVS), analysis of Lyme Disease test results, identification of respiratory viral pathogens using cell-based methods, and laboratory rotations (e.g., arbovirus, virus isolation, chlamydia, syphilis, and/or microbial serology programs).

PHASE intern Wenze Zhang, an MPH/MBA student, was born and raised in Guangzhou, China.

Current Interns

The primary responsibility of the intern is to gain laboratory experience performing diagnostic tests and/or assay development projects, as well as in laboratory data analysis and public health implications. The first two JHU PHASE interns selected to work with Dr. Carlos in the Laboratories Administration are Wenze Zhang and William Murtaugh. Their biosketches and projects follow below.

"Vincent" Wenze Zhang, an MPH/MBA student, was born and raised in Guangzhou, China. Before coming to the USA he joined Pfizer's China practice in 2006 as a customer relationship management (CRM) specialist. In 2007-80 he served as a project manager with Naptunus Interlong. There he helped the company launch China's largest GMP vaccine facility. Vincent graduated from Sun Yat-sen University with a degree in molecular biology and received training at the Chinese Academy of Sciences. His academic interests include applying quantitative methods to facilitate health sector decision-making processes. After completing the MPH/MBA Program at JHU, he plans to pursue an advanced degree in decision science or operations management with a healthcare-related context. His ultimate goal is to apply what he learns to resolving disparities in the allocation and delivery of healthcare resources in developing settings, especially in China.

William Murtaugh, a resident of Arlington, VA, is originally from the small town of Frankfort, NY. He obtained his B.S. degree in Biology from Syracuse University in 2007. Will began his introduction to the field of infectious diseases with an internship at the Witebsky Center for Microbial

Pathogenesis and Immunology at the State University of New York at Buffalo. There he studied the developmental regulation of ribosomal proteins in *Trypanosoma brucei* and developed an interest in the public health implications of laboratory research. He then joined the Department of Molecular Virology at the Military HIV Research Program (MHRP) in Rockville, MD. Through MHRP, Will is currently involved in HIV-candidate vaccine development and vaccine trial research. Will is currently pursuing an MPH at Johns Hopkins. He is looking forward to complementing his current research and academic studies with an opportunity to participate in an internship providing experience on the control and prevention of infectious diseases. Will's internship will include testing for respiratory viral pathogens, epidemiological analysis of the CDC National Respiratory and Enterovirus Surveillance Program, and influenza surveillance along with antiviral resistance testing.

PHASE intern, William Murtaugh an MPH student, a resident of Arlington, VA, is originally from the small town of Frankfort, NY.

Current PHASE Projects

Project 1.
Lyme Disease in Maryland: *Trend Analysis Concept and Public Health Laboratory Implications*

Purpose. Mr. Zhang will undertake an analysis of suspected Lyme disease specimens submitted to the DHMH Laboratories Administration from 2000 to 2010 to gain a better understanding of the patient demographic and geographic trends of Lyme disease within different regions and specific counties in Maryland. Mr. Zhang is expected to have the results of this project in the late spring of 2011.

Overview. Lyme disease is a multisystem disease caused by a spirochete, *Borrelia burgdorferi*. The disease, documented in Europe since the early 20th century, was documented in the United States during an epidemic in 1975 among children in Old Lyme, Connecticut.[1, 2] The infection is transmitted through an arthropod vector from an animal reservoir. *B. burgdorferi* was first isolated from *Ixodes dammini* ticks, which was shown to be the etiologic agent. *Ixodes scapularis* ticks are principally responsible for the transmission in the northeastern and mid-Atlantic regions, as well as in Minnesota and Wisconsin.[2, 4] The ticks are commonly found on vegetation in endemic areas, especially in wooded areas common to the infected animals: deer, wild mice, birds, raccoons, horses, dogs and cats. The incidence of human infection coincides with the tick season from May to September in most part of the United States.[2] The wide range of symptoms in early-onset of Lyme disease include arthritic symptoms, low grade flu-like fever, headaches, dizziness, and muscular pains. A red lesion on or near the site of a tick bite, called erythema migrans (EM), develops in 60 to 70% of the cases within a few days to weeks after a tick bite. If left untreated, later symptoms may resemble severe neurological, cardiac and musculoskeletal system damages.[3]

The characteristic Lyme disease rash called erythema migrans often manifests itself in a "bull's-eye" appearance. Photo credit: CDC Public Health Image Library.

Borrelia burgdorferi are helical shaped bacteria, and are about 10-25µm long and caused more than 23,000 cases of Lyme disease in the United States during 2002. Photo credit: CDC Public Health Image Library.

Black-legged ticks, *Ixodes scapularis*, are known to transmit *Borrelia burgdorferi*, during feeding, when they insert their mouth parts into the skin of a host. Photo credit: CDC Public Health Image Library.

An increasing risk of Lyme disease is facing populations in the Mid-Atlantic region due to frequent rural visits, recreation, and the change in land use, which contribute to the population increase of both deer and deer ticks.[2] Tick bites and Lyme disease incidence peaks in June and remains high through the summer and into early fall. Incidence rates in Maryland's population for 1993-1996 were estimated to be 7/100,000 with great variability among jurisdictions, ranging from 0.7 to 88.3/100,000.[4] Lyme disease can be hard to diagnose because its symptoms may be nonspecific and confused with those of juvenile rheumatoid arthritis, lupus erythematosis, rheumatic fever, and viral meningitis.[3] Studies show patients with a diagnosis of Lyme disease, one that met the case definition developed by the

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CDC, had the same profile of symptoms as controls without Lyme disease.[5] Early immunofluorescent enzyme-linked immunosorbent assay (ELISA) for antibody to *B. burgdorferi* frequently yields false-positive results because of cross-reactive antibodies associated with other pathogens. Therefore enzyme immunoassay must be confirmed by a positive Western Blot result.[6] Polymerase chain reaction (PCR) testing may be used to identify a current (active) infection of Lyme disease that has not gotten better after antibiotic treatment. PCR testing is not done as often as antibody testing because it requires technical skill and expensive equipment. Also, standards have not yet been developed for PCR testing and there is a risk of false-positive test results.[2] In 2005, the FDA approved C6 peptide ELISA, a test using a synthetic hybrid antibody derived from the surface of the Lyme spirochete. C6 detects *B. burgdorferi* genotypes and a positive result correlates well with acute cases of Lyme disease.[2] Antibody tests are the most commonly used tests to identify Lyme disease. Antibodies usually stay in the circulatory system for many years, even after the patient has been cured. It may take up to two months after becoming infected before antibodies can be detected in a blood test.[2]

Maryland's Laboratories Administration performs tests on specimens collected primarily by county and city government healthcare facilities, as well as those submitted with prior approval by individual physicians within the state. The Laboratories Administration uses the standard two-step ELISA and Western blot methods. The ELISA is widely accepted as the first step in confirming a clinical diagnosis of Lyme disease. The ELISA screens for elevated blood levels of antibodies produced in response to *B. burgdorferi*. The test is highly sensitive, but 5% to 7% of those unexposed to the disease will also test positive.

The services and facilities of the Maryland Department of Health and Mental Hygiene (DHMH) are operated on a non-discriminatory basis. This policy prohibits discrimination on the basis of age; ancestry; color; creed; marital status; mental or physical disability; national origin; race; religious affiliation, belief, or opinion; sex; or sexual orientation and plies to the provisions of employment and granting of advantages, privileges and accommodations.

The Department, in compliance with the Americans with Disabilities Act, ensures that qualified individuals with disabilities are given an opportunity to participate in and benefit from DHMH services, programs, benefits, and employment opportunities.

All positive ELISA results must be confirmed by the more accurate Western blot, which detects Lyme-associated antibodies present in the bloodstream. Two types of Western blot, namely for immunoglobulin G (IgG) and immunoglobulin M (IgM), are both performed at the Laboratories Administration. Serum IgG can be detected as early as two weeks after onset of the symptoms, and the level remains detectable after a year. A positive IgG result is considered sufficient to confirm a Lyme infection. IgM tests are most sensitive within the first month after onset, but a positive IgM result is not a recommended indicator after the first two months, because it can be associated with a high false negative rate. A positive ELISA followed by a negative Western blot indicates that Lyme disease is not an appropriate diagnosis.

In 2006, the Laboratories Administration began using the VIDAS system by bioMérieux Corporation to perform its ELISA screening test. VIDAS is a multi-parameter automated immunoanalyser able to perform 60 tests per hour. It comprises of an analytical module, a computer, and a printer. The VIDAS system uses the enzyme linked fluorescent assay (ELFA) principle, combining the ELISA test method with a final fluorescent reading without the worries of inter-reagent or inter-sample contamination.[7]

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Project 2.
Laboratory Surveillance of Respiratory and Enteric Viruses

Purpose. Mr. Murtaugh will undertake a project to summarize all the National Respiratory and Enteric Virus Surveillance System (NREVSS) data submitted by the Maryland Department of Health and Mental Hygiene (DHMH) Laboratories Administration beginning in 2002. This will include developing data for the current 2010-2011 influenza season to help support prevention and control of respiratory and enteric viral infections. Results of this laboratory surveillance are expected to be available in the late spring of 2011.

Overview. The Centers for Disease Control and Prevention (CDC) established NREVSS to describe, in real-time, possible temporal and geographic trends of respiratory and enteric viral infections, as well as deviations from predictable trends. Academic, commercial, and public health department laboratories from every state voluntarily contribute to the collection and reporting of data. The ease by which data can be submitted to the online NREVSS database creates a powerful tool for professionals and the general public to assess up-to-date state-wide and national trends.[1] Responsibilities of each participating laboratory include virus isolation and antigen detection, as well as reporting the number of tests performed and the number of positive results to the NREVSS website (*http://wwwn.cdc.gov/nrevss/*) maintained by the CDC.

The Maryland Laboratories Administration is one of fourteen laboratories in the state of Maryland that participate in the CDC NREVSS program. Others include Anne Arundel Medical Center, Calvert Memorial Hospital, Franklin Square Hospital, Frederick Memorial Hospital, Greater Baltimore Medical Center, Hagerstown Medical Laboratory, Mercy Medical Center, Montgomery General Hospital, Sinai Hospital of Baltimore, Southern Maryland Hospital, Union Hospital of Cecil County, University of Maryland, and Western Maryland Health System.[2]

The following respiratory viruses are included for laboratory surveillance by the Laboratories Administration:

Respiratory syncytial virus (RSV). RSV is in the family *Paramyxoviridae* and is an enveloped virus with a single-stranded negative-sense RNA genome. It's one of the most contagious human pathogens, with transmission occurring via aerosolized particles or direct contact with the eye or nasal membranes. During an incubation period lasting 4-5 days, the virus spreads to the lower respiratory tract.[3]

Parainfluenza virus (PIV). Similar to RSV, PIV is also in the family *Paramyxoviridae* and has an enveloped negative sense RNA genome. Transmission also occurs through contact with respiratory secretions.[5]

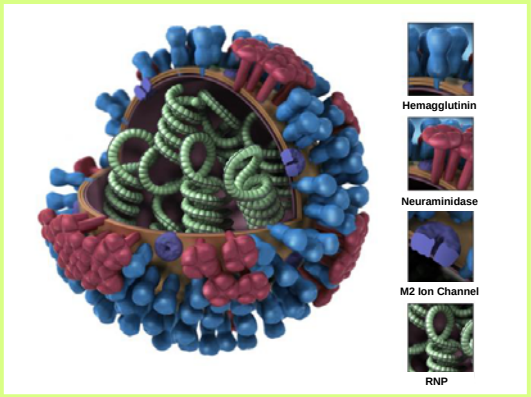
Respiratory adenovirus (AdV): In the family *Adenoviridae*, AdV is a non-enveloped, double-stranded DNA virus. Transmission occurs primarily through contact with the respiratory secretions of an infected individual, although it has frequently been isolated from fecal specimens.[7]

Influenza. Influenza is in the family *Orthomyxoviridae* and contains an enveloped segmented, negative-sense RNA genome in the form of a nucleoprotein helix. This virus is categorized into Influenza A, Influenza B and influenza C. Influenza A is further classified by serotype of two surface proteins, hemagglutinin (H) and neurominidase (N).
Influenza viruses type A (subdivided into 2009 H1N1, Seasonal H1N1, and H3N2) and type B are reported as part of NREVSS data. The NREVSS influenza reporting overlaps with CDC's Influenza Surveillance program. Seventy participating laboratories nationwide, including the Maryland Laboratories Administration, participate in the influenza viral surveillance to determine when and where influenza infection is occurring, as well as to create a data set that can be retrospectively evaluated for use in future prevention policy and practice, including vaccine development.[8, 9]

The enteric viruses included for surveillance by the NREVSS program at Maryland DHMH include the following:

Rotavirus: In the family *Reoviridae*, this virus contains non-enveloped, segmented, double-stranded RNA. The virus is transmitted via the fecal-oral route and has an incubation period of about two days.[11]

This transmission electron micrograph (TEM) revealed some of the ultrastructural morphology of a number of intact rotavirus double-shelled particles. Photo credit: CDC Public Health Image Library.



This illustration provides a 3D graphical representation of a generic influenza virion's ultrastructure. Note the key to the right identifying the virion's surface protein constituents. Influenza A viruses are divided into subtypes based on two proteins on the surface of the virus: the hemagglutinin (H), and the neuraminidase (N).
Graphic credit: CDC Public Health Image Library.

Enterovirus: These viruses are in the family *Picornaviridae* and contain single-stranded positive sense RNA genome. Infection occurs through exposure to respiratory secretions or stool.[12]

Materials and Methods: For respiratory viruses, nasopharyngeal specimens are collected from patients with influenza-like illness (ILI) and screened for Influenza A and B by real-time reverse-transcriptase-polymerase chain reaction (rRT-PCR) assays.[13] Respiratory specimens testing negative by PCR for influenza viruses are inoculated in R-mix

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PHASE intern William Murtaugh and laboratory scientist Mandy Tran evaluating cell culture tubes inoculated with respiratory specimens submitted for viral identification testing.

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shell vials, Hep-2, RHMK, and RHMK SV5/40 cell cultures. For rapid detection of respiratory virus (1-3 days), the inoculated R-mix shell vial culture is treated with direct fluorescent monoclonal antibodies (MAbs) directed against all respiratory viruses of concern. Cover slips within the shell vial containing the treated cell monolayer are observed for fluorescence patterns specific to different virus types under a fluorescence microscope. The RHMK and Hep-2 cells are monitored for cytopathic effects (CPE) every three to four days, for a total of two weeks. Results are recorded on a numeric scale from zero (negative) to 4 corresponding to an increase in the percentage of cell monolayer exhibiting CPE. If no CPE is observed, the hemadsorption assay is performed to detect the presence of myxo- and paramyxoviruses. Hemadsorption involves the addition of guinea pig red blood cells (RBCs) to the respiratory culture to detect hemagglutinating antigens acquired by a virus. Positive results are observed as a distinct clumping of RBCs. Similarly, potential enteric viral specimens are inoculated in primary Rhesus Monkey Kidney (PRMK) cells, WI-38 cells, and an E-mix culture. PRMK cells are also monitored for CPE for two weeks. If CPE is observed, the presence of enteric virus is confirmed and the virus is typed using a direct immunofluorescence assay containing MAbs specific for a range of enteric virus antigens. This is known as a panenterovirus stain. Specimens negative for CPE are passaged once and observed for CPE for an additional two week period.[6] Data is reported for each number-coded sample by type of virus tested and by a listing of positive or negative for each respective virus. Virus isolation data and antigen detection data are summarized on separate NREVSS worksheets on a weekly basis and entered into the NREVSS online database at http://wwwn.cdc.gov/nrevss/. STARLIMS software is used to locally report, manage, and store data.

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This article was written by Wenze Zhang, William Murtaugh, and Dr. Maria Paz Carlos.

Laboratory Statistics

Reported by the
Laboratories Administration
covering results from the month of
October 2010

ENTERIC BACTERIOLOGY

GENUS SEROVAR	SEX	AGE	#	JURISDICTION
CAMPYLOBACTER				
	M	49	1	BALTIMORE CITY
CAMPYLOBACTER JEJUNI				
	F	42	1	ANNE ARUNDEL
	M	26	1	BALTIMORE CITY
	F	37	1	OUT OF STATE
	M	64	1	OUT OF STATE
	M	46	1	OUT OF STATE
	M	35	1	OUT OF STATE
	M	23	1	OUT OF STATE
	M	14	1	OUT OF STATE
	F	38	1	PRINCE GEORGE'S

ESCHERICHIA COLI, SEROTYPE 0157:H7

M	2	1	WASHINGTON

SALMONELLA

F	8	1	ANNE ARUNDEL
M	18	1	BALTIMORE
M	10	1	BALTIMORE
U	20	1	OUT OF STATE
F	54	1	OUT OF STATE
F	40	1	OUT OF STATE
F	12	1	OUT OF STATE
M	77	1	OUT OF STATE
M	61	1	OUT OF STATE
M	47	1	OUT OF STATE

SALMONELLA SER. 4,12:I:-

F	0	1	MONTGOMERY
F	49	1	OUT OF STATE

SALMONELLA SER. 4,5,12:I:-

F	48	1	BALTIMORE CITY
M	1	4	OUT OF STATE

SALMONELLA SER. BAREILLY

M	26	1	MONTGOMERY

SALMONELLA SER. BERTA

F	51	1	OUT OF STATE
M	6	1	OUT OF STATE

SALMONELLA SER. BRAENDERUP

F	0	1	BALTIMORE

SALMONELLA SER. ENTERITIDIS

F	82	1	ANNE ARUNDEL
F	1	1	ANNE ARUNDEL
U	11	1	BALTIMORE
F	0	1	BALTIMORE
M	19	1	BALTIMORE
M	19	1	BALTIMORE
U	0	1	BALTIMORE CITY
U	3	1	BALTIMORE CITY
U	0	1	BALTIMORE CITY
F	0	1	BALTIMORE CITY
F	38	1	BALTIMORE CITY
F	36	1	BALTIMORE CITY
F	26	1	BALTIMORE CITY
F	19	1	BALTIMORE CITY
F	17	1	BALTIMORE CITY
F	12	1	BALTIMORE CITY
F	9	1	BALTIMORE CITY
M	0	2	BALTIMORE CITY
M	61	1	BALTIMORE CITY
M	49	1	BALTIMORE CITY
M	37	1	BALTIMORE CITY
M	33	1	BALTIMORE CITY
M	20	1	BALTIMORE CITY
M	1	1	BALTIMORE CITY
M	0	1	BALTIMORE CITY
F	47	1	CHARLES
F	1	1	MONTGOMERY
M	1	1	MONTGOMERY
F	18	1	OUT OF STATE
F	8	1	OUT OF STATE
M	5	1	OUT OF STATE
M	1	1	OUT OF STATE
M	0	1	OUT OF STATE
M	0	1	OUT OF STATE
M	1	1	UNKNOWN

SALMONELLA SER. HEIDELBERG

U	1	1	BALTIMORE
F	96	1	MONTGOMERY
F	1	1	OUT OF STATE
U	0	1	UNKNOWN

SALMONELLA SER. INFANTIS

F	60	1	BALTIMORE
F	72	1	MONTGOMERY
F	49	1	MONTGOMERY

SALMONELLA SER. JAVIANA

U	3	1	ANNE ARUNDEL
F	0	1	ANNE ARUNDEL
F	27	1	ANNE ARUNDEL
U	49	1	BALTIMORE
U	1	1	BALTIMORE
F	85	2	BALTIMORE
F	4	2	BALTIMORE
M	0	2	BALTIMORE
M	58	1	BALTIMORE
M	38	1	BALTIMORE
M	2	3	BALTIMORE
M	3	1	BALTIMORE CITY
M	2	1	BALTIMORE CITY
F	73	1	MONTGOMERY
F	65	1	OUT OF STATE
F	65	1	OUT OF STATE
M	45	1	OUT OF STATE
M	3	1	OUT OF STATE
M	1	1	OUT OF STATE
M	1	1	OUT OF STATE
M	0	1	OUT OF STATE
M	15	1	TALBOT
F	64	1	WICOMICO
F	4	1	WICOMICO
M	3	1	WICOMICO
M	2	1	WICOMICO
M	1	1	WICOMICO
F	3	4	WORCESTER
M	3	10	WORCESTER
M	2	3	WORCESTER
M	1	6	WORCESTER

SALMONELLA SER. LONDON

F	0	1	WICOMICO

SALMONELLA SER. MINNESOTA

F	3	2	OUT OF STATE

SALMONELLA SER. MONSCHAUI

F	49	1	FREDERICK
F	5	3	OUT OF STATE
U	1	1	OUT OF STATE

SALMONELLA SER. NEWPORT

F	10	1	BALTIMORE
M	6	1	BALTIMORE
M	18	1	BALTIMORE CITY
F	28	1	CALVERT
F	0	1	CALVERT
F	52	1	KENT
F	78	1	OUT OF STATE
F	62	1	OUT OF STATE
F	53	1	OUT OF STATE
F	0	1	OUT OF STATE
M	51	1	OUT OF STATE
M	27	1	OUT OF STATE
F	27	8	SOMERSET
M	0	10	SOMERSET
F	10	1	TALBOT
M	62	1	TALBOT
F	85	1	WICOMICO
F	40	1	WICOMICO
F	27	1	WICOMICO
F	0	1	WICOMICO
M	86	1	WICOMICO
M	17	1	WICOMICO

SALMONELLA SER. NIMA

M	46	1	OUT OF STATE
M	3	1	OUT OF STATE
M	38	1	OUT OF STATE

SALMONELLA SER. PARATYPHI B

M	28	1	ALLEGANY

SALMONELLA SER. PARATYPHI B VAR L(+) TARTRATE +

F	20	1	BALTIMORE
F	50	1	WASHINGTON

SALMONELLA SER. POONA

U	2	1	CARROLL
M	6	1	OUT OF STATE

SALMONELLA SER. TYPHIMURIUM

F	31	1	ALLEGANY
U	1	1	BALTIMORE
F	59	1	BALTIMORE
F	2	2	BALTIMORE
F	0	1	BALTIMORE
M	13	1	BALTIMORE CITY
M	1	1	BALTIMORE CITY
F	0	1	CALVERT
F	8	1	FREDERICK
U	56	1	HARFORD
M	10	1	HARFORD
M	88	1	MONTGOMERY
M	15	1	MONTGOMERY
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F	20	1	PRINCE GEORGE'S
M	31	1	WASHINGTON
M	6	1	WASHINGTON
F	54	1	WICOMICO

SHIGELLA

M	18	1	MONTGOMERY

SHIGELLA BOYDII TYPE 14

F	48	1	OUT OF STATE

SHIGELLA FLEXNERI

M	43	1	BALTIMORE
M	8	1	BALTIMORE
M	0	1	BALTIMORE CITY
U	27	1	BALTIMORE CITY
F	0	1	UNKNOWN

SHIGELLA FLEXNERI II:3,4

F	3	1	OUT OF STATE

SHIGELLA SONNEI

U	0	1	BALTIMORE CITY
F	59	1	MONTGOMERY
F	16	1	MONTGOMERY
M	6	1	MONTGOMERY
F	62	1	OUT OF STATE
F	21	1	OUT OF STATE
M	33	1	OUT OF STATE
M	78	1	OUT OF STATE

VIBRIO PARAHAEMOLYTICUS

M	60	1	MONTGOMERY
M	47	1	OUT OF STATE
M	46	1	OUT OF STATE

VIBRIO VULNIFICUS

U	0	1	ANNE ARUNDEL
M	47	1	OUT OF STATE

YERSINIA ENTEROCOLITICA

F	66	1	ANNE ARUNDEL

TOTAL 229

ISOLATES - REFERENCE

GENUS SPECIES / SOURCE	#	JURISDICTION
AEROMONAS VERONII SUBSP SOBRIA		
SPUTUM	1	PRINCE GEORGE'S
BACILLUS CEREUS		
BLOOD	1	BALTIMORE CITY
PSEUDOMONAS SPECIES		
SPUTUM	1	BALTIMORE CITY
ROSEOMONAS CERVICALIS		
BLOOD	1	ANNE ARUNDEL
STAPHYLOCOCCUS AUREUS		
WOUND	2	WICOMICO
TOTAL	**6**	

ISOLATES - MISCELLANEOUS

GENUS SPECIES / SOURCE	#	JURISDICTION
BACILLUS SPECIES		
CSF	1	BALTIMORE CITY
ENTEROBACTER CLOACAE		
BLOOD	2	BALTIMORE CITY
GARDNERELLA VAGINALIS		
VAGINAL	9	PRINCE GEORGE'S
VAGINAL	1	SOMERSET
PSEUDOMONAS AERUGINOSA		
SPUTUM	1	WASHINGTON
PSEUDOMONAS LUTEOLA		
CSF	1	BALTIMORE CITY
PSEUDOMONAS PUTIDA		
BLOOD	1	BALTIMORE CITY
STAPHYLOCOCCUS AUREUS		
WOUND	1	ALLEGANY
WOUND	2	BALTIMORE
SKIN	1	BALTIMORE CITY
WOUND	7	BALTIMORE CITY
LEG	1	CARROLL
NASAL	1	CARROLL
WOUND	2	CARROLL
WOUND	1	PRINCE GEORGE'S
STAPHYLOCOCCUS, COAGULASE NEGATIVE		
BLOOD	1	BALTIMORE CITY
LUNG TISSUE	1	BALTIMORE CITY
WOUND	1	BALTIMORE CITY
WOUND	1	CARROLL
SKIN	1	MONTGOMERY
STREPTOCOCCUS, BETA HEMOLYTIC GROUP B		
VAGINAL	1	ANNE ARUNDEL
VAGINAL	1	MONTGOMERY
VAGINAL	16	PRINCE GEORGE'S
VAGINAL	1	SOMERSET
STREPTOCOCCUS, BETA HEMOLYTIC GROUP A		
THROAT	1	ALLEGANY
STREPTOCOCCUS, BETA HEMOLYTIC NON-GROUP A		
THROAT	21	ALLEGANY
TOTAL	**56**	

SEXUALLY TRANSMITTED DISEASES

GENUS SPECIES / SEX	#	JURISDICTION
SYPHILIS SEROLOGY		
F	1	ANNE ARUNDEL
F	4	BALTIMORE
M	7	BALTIMORE
U	1	BALTIMORE
F	11	BALTIMORE CITY
M	25	BALTIMORE CITY
U	3	BALTIMORE CITY
M	1	CALVERT
M	1	CARROLL
M	1	DORCHESTER
U	1	HOWARD
F	5	MONTGOMERY
M	10	MONTGOMERY
U	1	MONTGOMERY
F	7	PRINCE GEORGE'S
M	31	PRINCE GEORGE'S
M	1	WASHINGTON
F	2	WICOMICO
M	3	WICOMICO
TOTAL	**116**	
CHLAMYDIA TRACHOMATIS		
F	12	ALLEGANY
M	6	ALLEGANY
U	2	ALLEGANY
F	15	ANNE ARUNDEL
M	2	ANNE ARUNDEL
F	24	BALTIMORE
M	15	BALTIMORE
U	1	BALTIMORE
F	11	BALTIMORE CITY
M	19	BALTIMORE CITY
U	1	BALTIMORE CITY
F	2	CALVERT
M	2	CALVERT
F	2	CAROLINE
M	1	CAROLINE
F	5	CARROLL
M	2	CARROLL
F	3	CECIL
M	3	CECIL
F	10	CHARLES
M	6	CHARLES
F	1	DORCHESTER
F	7	FREDERICK
M	7	FREDERICK
F	3	GARRETT
M	2	GARRETT
F	4	HARFORD
M	3	HARFORD
F	5	HOWARD
M	2	HOWARD
F	1	KENT
M	3	KENT
F	13	MONTGOMERY
M	3	MONTGOMERY
F	72	PRINCE GEORGE'S
M	84	PRINCE GEORGE'S
F	4	QUEEN ANNE'S
M	1	QUEEN ANNE'S
F	4	SAINT MARY'S
M	4	SAINT MARY'S
F	6	SOMERSET
M	2	SOMERSET
F	1	TALBOT
F	8	WASHINGTON
M	4	WASHINGTON
F	28	WICOMICO
M	19	WICOMICO
U	1	WICOMICO
F	4	WORCESTER
M	3	WORCESTER
TOTAL	**443**	
NEISSERIA GONORRHOEAE		
F	2	ALLEGANY
M	4	BALTIMORE
F	1	BALTIMORE CITY
M	1	DORCHESTER
M	4	MONTGOMERY
F	9	PRINCE GEORGE'S
M	11	PRINCE GEORGE'S
M	1	WICOMICO
TOTAL	**33**	

MYCOBACTERIOLOGY

ISOLATE / SEX	AGE	#	JURISDICTION
ACID-FAST BACILLUS			
M	81	1	BALTIMORE
MYCOBACTERIUM ABSCESSUS			
F	74	2	BALTIMORE
MYCOBACTERIUM AVIUM COMPLEX			
F	58	2	ALLEGANY
F	30	2	BALTIMORE
F	35	2	BALTIMORE
F	38	1	BALTIMORE
F	43	1	BALTIMORE
F	77	1	BALTIMORE
F	78	1	BALTIMORE
M	71	2	BALTIMORE
F	35	1	BALTIMORE CITY
F	39	1	BALTIMORE CITY
F	44	1	BALTIMORE CITY
F	57	1	BALTIMORE CITY
M	47	1	BALTIMORE CITY
M	50	1	BALTIMORE CITY
M	61	1	BALTIMORE CITY
M	89	1	BALTIMORE CITY
M	53	1	CARROLL
M	47	2	MONTGOMERY
M	67	1	MONTGOMERY
F	21	2	PRINCE GEORGE'S
M	51	1	PRINCE GEORGE'S
M	57	1	PRINCE GEORGE'S
M	57	1	WICOMICO
M	77	1	WICOMICO
MYCOBACTERIUM BOVIS			
M	37	1	OUT OF STATE
MYCOBACTERIUM CHELONAE			
F	58	1	BALTIMORE CITY
M	64	2	WICOMICO
MYCOBACTERIUM FORTUITUM			
F	67	2	ANNE ARUNDEL
F	0	1	UNKNOWN
MYCOBACTERIUM FORTUITUM COMPLEX			
F	74	1	BALTIMORE
F	39	1	BALTIMORE CITY
M	66	1	BALTIMORE CITY
M	45	1	HOWARD

M	27	2	OUT OF STATE
M	66	1	OUT OF STATE
M	89	1	WASHINGTON
M	57	1	WICOMICO
MYCOBACTERIUM GORDONAE			
M	68	1	BALTIMORE
M	62	1	CARROLL
M	44	1	FREDERICK
F	50	1	MONTGOMERY
M	24	2	PRINCE GEORGE'S
M	26	1	PRINCE GEORGE'S
M	57	1	WICOMICO
MYCOBACTERIUM KANSASII			
M	77	2	ANNE ARUNDEL
U		1	UNKNOWN
MYCOBACTERIUM LENTIFLAVUM			
M	81	1	BALTIMORE
MYCOBACTERIUM MARINUM			
F	60	1	BALTIMORE
M	69	1	CALVERT
MYCOBACTERIUM SZULGAI			
M	46	3	CECIL
MYCOBACTERIUM TUBERCULOSIS			
F	50	1	ANNE ARUNDEL
F	20	1	BALTIMORE CITY
F	44	1	BALTIMORE CITY
M	55	1	BALTIMORE CITY
M	60	1	BALTIMORE CITY
M	22	1	HARFORD
M	28	1	KENT
F	44	1	MONTGOMERY
F	73	1	MONTGOMERY
M	27	1	MONTGOMERY
M	67	1	MONTGOMERY
M	79	1	MONTGOMERY
F	25	1	OUT OF STATE
F	27	1	OUT OF STATE
F	36	1	OUT OF STATE
F	57	1	OUT OF STATE
F	78	1	OUT OF STATE
M	27	1	OUT OF STATE
M	33	1	OUT OF STATE
M	46	1	OUT OF STATE
M	62	1	OUT OF STATE
M	56	1	PRINCE GEORGE'S
F	38	1	TALBOT
M	85	1	TALBOT
MYCOBACTERIUM TUBERCULOSIS COMPLEX			
M	47	3	BALTIMORE
F	20	7	BALTIMORE CITY
F	61	1	BALTIMORE CITY
M	31	1	BALTIMORE CITY
M	35	1	BALTIMORE CITY
M	74	1	BALTIMORE CITY
M	22	1	HARFORD
M	28	7	KENT
F	44	3	MONTGOMERY
F	73	3	MONTGOMERY
F	78	1	MONTGOMERY
M	27	2	MONTGOMERY
M	67	2	MONTGOMERY
M	79	2	MONTGOMERY
F	25	1	OUT OF STATE
F	36	1	OUT OF STATE
M	27	1	OUT OF STATE
M	33	1	OUT OF STATE
M	47	1	OUT OF STATE
M	52	1	OUT OF STATE
M	78	1	OUT OF STATE
F	37	1	PRINCE GEORGE'S
RAPIDLY GROWING MYCOBACTERIA			
F	68	1	CARROLL
TOTAL		**134**	

MYCOBACTERIUM SUSCEPTIBILITY RESULTS

15 ISOLATES IDENTIFIED
1 DRUG RESISTANT STRAINS FOUND

#	JURISDICTION	DRUG(S)
1	WASHINGTON DC	STREPTOMYCIN

[A] TWO ISOLATES FROM THE SAME PATIENT
[B] PROBABLE FOR M. BOVIS
[C] MEETS CASE DEFINITION OF MULTI-DRUG TUBERCULOSIS (MDRTB)

Mycobacterium tuberculosis complex consists of:

M. tuberculosis	*M. africanum*
M. bovis	*M. microti*
M. bovis, BCG	*M. canettii*

PARASITOLOGY

GENUS/SPECIES	#	JURISDICTION
BLASTOCYSTIS HOMINIS		
	1	MONTGOMERY
	1	MONTGOMERY
DIENTAMOEBA FRAGILIS		
	1	PRINCE GEORGE'S
ENDOLIMAX NANA		
	2	MONTGOMERY
	2	PRINCE GEORGE'S
	1	MONTGOMERY
	2	PRINCE GEORGE'S
	2	FREDERICK
	3	PRINCE GEORGE'S
	1	HOWARD
	1	PRINCE GEORGE'S
	1	MONTGOMERY
ENTAMOEBA COLI		
	4	PRINCE GEORGE'S
	2	MONTGOMERY
	1	PRINCE GEORGE'S
	1	MONTGOMERY
ENTAMOEBA HARTMANNI		
	1	PRINCE GEORGE'S
	1	KENT
ENTEROBIUS VERMICULARIS		
	1	CARROLL
	1	KENT
	1	FREDERICK
	1	MONTGOMERY
GIARDIA LAMBLIA		
	3	FREDERICK
	1	HOWARD
	2	HOWARD
HOOKWORM	6	MONTGOMERY
HYMENOLEPIS NANA		
	1	MONTGOMERY
PLASMODIUM FALCIPARUM		
	2	OUT OF STATE
	1	WICOMICO
	1	BALTIMORE CITY
	1	BALTIMORE
	3	ANNE ARUNDEL
PLASMODIUM OVALE		
	1	ANNE ARUNDEL
TOTAL	**54**	

WATER MICROBIOLOGY

	# TESTED	# NON-COMPLIANT
COMMUNITY	3	0
NON-COMMUNITY	408	92
TOTAL	**411**	**92**

FOOD PROTECTION

	TOTALS
FOOD	
NUMBER OF SAMPLES	41
NOTABLE PATHOGENS:	
CAMPYLOBACTER SP.	0
CLOSTRIDIUM DIFFICILE	0
ENTEROCOCCUS	0
E. COLI	0
E. FAECALIS	0
LISTERIA SP.	0
MRSA	0
SALMONELLA SP.	0
VRE	0
CRABMEAT	
NUMBER OF SAMPLES	6
EXCEEDING STANDARDS[1]	0
NOTABLE PATHOGENS:	
LISTERIA INNOCUA	0
SHELLFISH	
NUMBER OF SAMPLES	3
EXCEEDING STANDARDS[2]	0
TOTAL STANDARDS EXCEEDED	0
SHELLFISH GROWING WATERS	
NUMBER OF SAMPLES	358
TOTAL NUMBER OF SAMPLES	**408**

STANDARDS

[1]CRABMEAT FRESH
ESCHERICHIA COLI AT < 36 MPN/100 GRAMS
STANDARD PLATE COUNT AT < 100

[2]SHELLFISH
FECAL COLIFORMS AT < 230 MPN/100 GRAMS
STANDARD PLATE COUNT AT < 500,000 PER GRAM

VIRUS ISOLATION

ISOLATE SEX	AGE	#	JURISDICTION
HERPES SIMPLEX VIRUS TYPE 1			
F	20	1	ALLEGANY
F	34	1	BALTIMORE
F	21	1	PRINCE GEORGE'S
F	20	1	WICOMICO
VARICELLA ZOSTER VIRUS			
M	32	1	BALTIMORE CITY
TOTAL		**5**	

VIRAL POLYMERASE CHAIN REACTION (PCR)

ISOLATE	SEX	AGE	#	JURISDICTION
HERPES SIMPLEX VIRUS TYPE 1				
	F	20	2	ALLEGANY
	M	24	1	ALLEGANY
	F	17	1	BALTIMORE
	M	21	1	BALTIMORE
	F	19	2	BALTIMORE CITY
	F	25	1	BALTIMORE CITY
	M	22	1	CECIL
	F	23	1	FREDERICK
	M	24	1	MONTGOMERY
	F	18	1	PRINCE GEORGE'S
	F	19	1	PRINCE GEORGE'S
	F	20	2	PRINCE GEORGE'S
	F	31	1	TALBOT
	F	18	1	WORCESTER
HERPES SIMPLEX VIRUS TYPE 2				
	F	20	1	ALLEGANY
	F	24	1	ANNE ARUNDEL
	F	32	1	BALTIMORE
	M	26	1	BALTIMORE
	U	26	1	BALTIMORE CITY
	U	37	1	BALTIMORE CITY
	U	39	1	BALTIMORE CITY
	F	16	1	BALTIMORE CITY
	F	19	1	BALTIMORE CITY
	F	20	1	BALTIMORE CITY
	F	22	1	BALTIMORE CITY
	F	23	1	BALTIMORE CITY
	F	30	2	BALTIMORE CITY
	F	32	1	BALTIMORE CITY
	F	50	1	BALTIMORE CITY
	M	0	1	BALTIMORE CITY
	M	15	1	BALTIMORE CITY
	M	17	1	BALTIMORE CITY
	M	21	1	BALTIMORE CITY
	M	22	3	BALTIMORE CITY
	M	25	2	BALTIMORE CITY
	M	27	1	BALTIMORE CITY
	M	29	1	BALTIMORE CITY
	M	30	1	BALTIMORE CITY
	M	31	1	BALTIMORE CITY
	M	32	1	BALTIMORE CITY
	M	23	1	CALVERT
	F	24	1	CAROLINE
	F	25	1	CARROLL
	F	23	1	CHARLES
	F	26	1	CHARLES
	U	19	1	CHARLES
	M	26	1	DORCHESTER
	F	27	1	FREDERICK
	M	31	1	FREDERICK
	F	19	1	MONTGOMERY
	F	23	1	MONTGOMERY
	M	24	1	MONTGOMERY
	F	19	1	PRINCE GEORGE'S
	F	22	2	PRINCE GEORGE'S
	F	27	1	PRINCE GEORGE'S
	F	39	1	PRINCE GEORGE'S
	F	42	1	PRINCE GEORGE'S
	M	21	1	PRINCE GEORGE'S
	M	22	1	PRINCE GEORGE'S
	M	23	1	PRINCE GEORGE'S
	M	27	1	PRINCE GEORGE'S
	M	43	1	PRINCE GEORGE'S
	M	55	1	PRINCE GEORGE'S
	F	26	1	SAINT MARY'S
	F	28	1	TALBOT
	F	23	1	WICOMICO
	F	31	1	WICOMICO
	F	21	1	WORCESTER
INFLUENZA A(H1/N1) NOVEL A				
	F	31	1	BALTIMORE CITY
INFLUENZA A(H3)				
	F	76	1	BALTIMORE
TOTAL			**78**	

VIRAL HEPATITIS

ORGANISM	# SPECIMENS	# POSITIVES	JURISDICTION
HEPATITIS A			
	1	0	PRINCE GEORGE'S
SUBTOTAL	**1**	**0**	
HEPATITIS B			
	54	0	ALLEGANY
	151	1	ANNE ARUNDEL
	43	2	BALTIMORE
	319	4	BALTIMORE CITY
	8	0	CALVERT
	11	0	CARROLL
	85	0	CECIL
	2	0	CHARLES
	1	0	DORCHESTER
	45	0	FREDERICK
	13	0	GARRETT
	31	0	HARFORD
	21	0	HOWARD
	1	0	KENT
	325	7	MONTGOMERY
	276	8	PRINCE GEORGE'S
	1	0	QUEEN ANNE'S
	1	0	SAINT MARY'S
	1	0	SOMERSET
	12	0	TALBOT
	1	0	UNKNOWN
	43	1	WASHINGTON
	65	0	WICOMICO
	1	0	WORCESTER
SUBTOTAL	**1,511**	**23**	
HEPATITIS C			
	53	6	ALLEGANY
	162	22	ANNE ARUNDEL
	45	0	BALTIMORE
	246	55	BALTIMORE CITY
	7	0	CALVERT
	13	2	CARROLL
	46	5	CECIL
	5	0	CHARLES
	1	0	DORCHESTER
	48	0	FREDERICK
	17	0	GARRETT
	54	1	HARFORD
	10	0	HOWARD
	2	0	KENT
	57	1	MONTGOMERY
	159	5	PRINCE GEORGE'S
	2	0	QUEEN ANNE'S
	2	0	SAINT MARY'S
	12	0	TALBOT
	1	0	UNKNOWN
	18	0	WASHINGTON
	18	2	WICOMICO
	1	1	WORCESTER
SUBTOTAL	**979**	**100**	
TOTALS	**2,491**	**123**	

RABIES

SOURCE	#	JURISDICTION
BAT	2	BALTIMORE CITY
	1	MONTGOMERY
	1	WASHINGTON
FOX	1	FREDERICK
	1	KENT
	1	WORCESTER
GROUND HOG	1	MONTGOMERY
RACCOON	1	BALTIMORE
	3	DORCHESTER
	1	FREDERICK
	5	MONTGOMERY
	1	PRINCE GEORGE'S
	1	QUEEN ANNE'S
	1	WASHINGTON
	1	WICOMICO
SKUNK	1	CECIL
	1	CHARLES
	1	FREDERICK
	1	GARRETT
	2	MONTGOMERY
	1	WICOMICO
TOTAL POSITIVES	**29**	
TOTAL SPECIMENS	**316**	

CHLAMYDIOPHILIA PSITTACI
(CHLAMYDIA)

REPORTED QUARTERLY
NO REPORT THIS MONTH

CD4 FLOW CYTOMETRY WORKLOAD

REPORTED QUARTERLY
NO REPORT THIS MONTH

NEWBORN & CHILDHOOD SCREENING

PRESUMPTIVE POSITIVES

DISORDERS	#
PHENYLKETONURIA (PKU)	0
MAPLE SYRUP URINE DISEASE (MSUD)	3
HOMOCYSTINURIA	15
TYROSINEMIA	8
ARGININEMIA	1
CITRULLINEMIA	0
GALACTOSEMIA	4
BIOTINIDASE DEFICIENCY	27
HYPOTHYROIDISM	100
HEMOGLOBIN -DISEASE	18
HEMOGLOBIN -BENIGN	532
CONGENITAL ADRENAL HYPERPLASIA (CAH)	5
CYSTIC FIBROSIS	1
FATTY ACID OXIDATIONS	9
ORGANIC ACIDEMIAS	7
ACYLCARNITINE - BORDERLINE	2
ACYLCARNITINE - OTHERS	0

MONTHLY TOTALS

# OF SPECIMENS SCREENED	12,950
NUMBER OF TESTS	742,305
% UNSATISFACTORY SPECIMENS	2.8

2010 YEAR-TO-DATE CONFIRMED CASES

CONDITIONS	# CONFIRMED
MEDIUM CHAIN ACYL-CoA DEHYDROGENASE DEFICIENCY (MCAD)	2
SHORT CHAIN ACYL-CoA DEHYDROGENASE DEFICIENCY (SCAD)	10
ELEVATED FORMIMINOGLUTAMIC ACID (FIGLU)	1
3-METHYLCROTONYL-COA CARBOXYLASE DEFICIENCY (3-MCC)	3
METHYLMALONIC ACIDEMIA (MMA)	1
GLUTARIC ACIDURIA TYPE 1 (GA-1)	1
BRANCHED CHAIN KETOACIDOSIS (BCK/MSUD)	1
GALACTOSE EPIMERASE DEFICIENCY	2
GALACTOSEMIA - VARIANT -DG	4
GALACTOSEMIA - UNKNOWN VARIANT	1
PARTIAL BIOTINIDASE DEFICIENCY	1
BIOTINIDASE DEFICIENCY	1
PROBABLE BIOTINIDASE CARRIER	4
PROBABLE GN	1
CONGENITAL ADRENAL HYPERPLASIA-SALT WASTING	2
CONGENITAL ADRENAL HYPERPLASIA-UNCLASSIFIED	1
HYPOTHYROIDISM - PRIMARY	18
OTHER HYPOTHYROIDISM	11
TBG DEFICIENCY	11
SICKLE CELL DISEASE -SS	37
SICKLE CELL DISEASE -SC	25
SICKLE CELL DISEASE -S BETA THALASSEMIA	9
SICKLE CELL DISEASE- BETA 0 THALASSEMIA	1
SICKLE CELL DISEASE-SV	1
SICKLE CELL TRAIT	1
HEMOGLOBIN VARIANT	1
CYSTIC FIBROSIS	7
CFTR-RELATED METABOLIC SYNDROME (CRMS)	1
TRANSIENT TYROSINEMIA	5

ENVIRONMENTAL CHEMISTRY

SAMPLE TYPES	# NON-COMPLIANT	# TESTED
ASBESTOS		
AIR	0	0
BULK	0	1
AIR QUALITY		
$PM_{2.5}$	0	449
RADIATION		
AIR/CHARCOAL FILTERS	0	72
MILK	0	2
WIPES	0	39
RAW WATER	0	7
VEGETATION	0	0
OTHER	0	0
DRINKING WATER		
METALS		
COMMUNITY	2	46
NON-COMMUNITY	5	8
PRIVATE WELLS	16	101
PESTICIDES & PCBs		
COMMUNITY	0	82
NON-COMMUNITY	0	29
PRIVATE WELLS	0	1
VOLATILE ORGANIC COMPOUNDS		
COMMUNITY	2	121
NON-COMMUNITY	0	56
PRIVATE WELLS	0	33
RADIATION		
COMMUNITY	0	37
NON-COMMUNITY	0	0
PRIVATE WELLS	0	23
INORGANICS		
COMMUNITY	2	38
NON-COMMUNITY	8	72
PRIVATE WELLS	6	138
FOOD CHEMISTRY		
SUSPECTED TAMPERING	0	6
MICROSCOPIC FILTH	0	0
LABELING	0	0
SURVEILLANCE	0	8
CHEMICAL CONTAMINATION	0	0
TOTAL	**41**	**1,369**

VIRAL LOAD SPECIMENS

HIV-1 RNA COPIES/ML	$<10^3$	10^3—10^4	10^4—10^5	$>10^5$	TOTALS
ALLEGANY	11	1	0	1	**13**
CARROLL	2	0	0	0	**2**
FREDERICK	2	0	0	1	**3**
MONTGOMERY	88	12	5	2	**107**
PRINCE GEORGE'S	122	19	14	11	**166**
QUEEN ANNE'S	0	0	2	0	**2**
SOMERSET	0	0	0	1	**1**
WASHINGTON	3	1	1	0	**5**
WICOMICO	1	0	3	0	**4**
SUBTOTALS	**229**	**33**	**25**	**16**	**303**
DEPT. OF CORRECTIONS	12	0	2	0	**14**
TOTALS	**241**	**33**	**27**	**16**	**317**

HIV ANTIBODY SCREENING

SUBMITTER	TOTAL SPECIMENS	# EIA POSITIVE	% EIA POSITIVE	# WB POSITIVE	% WB POSITIVE
CORRECTION FACILITY JUVENILE	77	4	5.19%	2	50.00%
CORRECTIONAL INSTITUTIONS	197	2	1.02%	1	50.00%
FAMILY PLANNING (NON-GOVERNMENT)	167	0	0.00%	0	0.00%
HEALTH CENTERS (NON-GOVERNMENT)	426	37	8.69%	35	94.59%
HLTH DEPT, NON-STD, FAMILY PLANNING	376	0	0.00%	0	0.00%
HLTH DEPT, NON-STD, OB/GYN	70	2	2.86%	2	100.00%
HLTH DEPT, NON-STD, OTHER	595	58	9.75%	57	98.28%
HLTH DEPT, STD CLINICS	1,041	9	0.86%	8	88.89%
HOSPITAL, OTHER	119	14	11.76%	9	64.29%
HOSPITAL, PUBLIC	30	1	3.33%	1	100.00%
LABORATORIES (NON-HOSPITAL)	313	11	3.51%	7	63.64%
PEDIATRIC - CHILD HEALTH	11	0	0.00%	0	0.00%
PRIVATE STUDENT HEALTH CTRS	31	1	3.23%	0	0.00%
PUBLIC STUDENT HEALTH CTRS	292	2	0.68%	0	0.00%
TOTALS	**3,745**	**141**	**3.77%**	**122**	**86.52%**

MAILING LABEL

Critical Link
c/o Georgia Corso, Room L-15
J. Mehsen Joseph Public Health Laboratory
Department of Health & Mental Hygiene
201 West Preston Street
Baltimore, Maryland 21201