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

New LIMS Chemistry Module

Environmental Chemistry implements a Laboratory Information Management System

Constantly changing environmental regulations as a result of changes in methods and in political and governmental policy, along with outsourcing, are continuing issues that have to be addressed by the Department of Health and Mental Hygiene, Laboratories Administration. One way for the Division of Environmental Chemistry (DEC) to efficiently manage the testing data and information generated and provided to customers is through the implementation of a laboratory information management system (LIMS). For the past three years, the Laboratories Administration has been implementing a project to add the DEC laboratories to the administration's LIMS. Rather than purchasing a separate system for these laboratories, it was decided to incorporate the DEC laboratories into the Laboratories Administration's existing LIMS (i.e., StarLIMS®).

The DEC laboratories are multidisciplinary, and routinely test for over 200 contaminants in multimedia matrices (e.g., water, soil, air) for a variety of environmental testing programs. The LIMS offers comprehensive reporting, surveillance, and networking capabilities compatible with national and international standards. The LIMS also provides the necessary functionality for the DEC laboratories to receive and accession samples, test these samples, and report the results to submitters and program offices, both locally and nationally.

Developing and implementing the LIMS was a challenge for laboratorians and programmers involved in the project. As an example, the work flows for clinical testing and environmental testing are different. Testing environmental samples first requires that projects be created for

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Salmonella serotype Baltimore

A new *Salmonella* serotype identified at the Laboratories Administration

In June of 2007, the DHMH Laboratories Administration's Division of Public Health Microbiology received a *Salmonella* isolate for confirmation and serotyping recovered from the stool of an eight-year-old child. In the Enterics Laboratory, the isolate was determined to be a Group "O" *Salmonella* of a unique serotype. The isolate identified by the Laboratories Administration was forwarded to the Centers for Disease

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StarLIMS® enables the laboratories to meet core public health functions by:

1. Supporting full Quality Assurance/Quality Control (QA/QC) management;
2. Creating sample run logs requiring the same or different tests, either from the same or different submitters, that can include QA/QC samples;
3. Defining and managing analytical methods;
4. Integrating analytical instruments and equipment to speed up data entry and reduce the potential for transcriptional errors;
5. Meeting complex requirements of a wide variety of customers' reporting needs;
6. Storing, managing, and controlling all documents associated with sample workflow;
7. Traceability of all data and information generated;
8. Supporting regulatory compliance, analyst certification, and accreditation;
9. Recording and managing equipment functions, and maintenance; and
10. Invoice management.

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New LIMS Chemistry Module

submitters. A *project* consists of the client, the number of samples expected, the tests to be performed on these samples, and any reports used.

Designing final test reports proved to be another challenge. Some of the environmental tests have up to 64 analytes, and the challenge proved to be how these analytes could be displayed in a readable format without printing multiple pages. Many of the tests performed in the environmental laboratories make use of computer-controlled analytic instrumentation, with software provided by the instrument's manufacturer.

Raw data and final reports generated by the manufacturer's software varies from instrument to instrument, and look very different from the reports generated by StarLIMS®. Previously, personnel in the Division used Microsoft® products to analyze and report data. StarLIMS® creates the desired final data report without the need for an additional software operating system.

DEC designed its new chemistry module with ease of use in mind. Clients may "pre-log" samples in the field by using a web-based application, called MyLIMS®, before they are submitted to the laboratory. This involves inputting all the relevant metadata associated with the samples. In the future, it is hoped this will cut down on paper, improve the collection of sample metadata, and speed the exchange of information and test results with clients. Clients may also use MyLIMS® to check the status of submitted samples. Access to electronic and hard copies of final reports are provided for clients who wish to view or print a copy of test results.

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StarLIMS®:The Chemistry Module

Laboratory staff members are assigned a role specific to their lab duties. Once the application is opened, a console tree is displayed showing all the necessary functionality for that particular role. These roles are strictly limited to protect all data in the system. Supervisors and managers have access to a variety of management tools that will allow them to ensure the accuracy and reliability of the testing process. Results of completed analytical runs can be reviewed for approval. Supervisors and managers also may request retesting and add comments that appear on the final report. Various statistical reports have been developed for the supervisors and managers to more easily oversee their laboratories' operations.

Having the DEC laboratories data in an electronic format provides the Laboratories Administration with capabilities that would not be available in a paper-based system. For instance, now interfaces can be developed between instruments and the LIMS, decreasing the amount of time spent entering results manually and significantly reducing the potential for transcription errors. Data can also be transmitted electronically in a variety of file formats including HL7, CSV, DBF and XLS.

Another advantage is data security. All data entered into and generated by the system is backed up on a daily, weekly and quarterly basis. The back up tapes generated are stored off-site in a fireproof locked vault. In addition, all data is asynchronously transferred to a disaster recovery site on an hourly basis. If there were to be a failure of the main system, operations could continue by switching to the disaster recovery site equipment.

Faced with economic downsizing and reduction of personnel, the automation of many of the laboratory's testing processes has become a necessity. The LIMS has allowed the DEC to remain competitive, with the potential for improved capacity and productivity, and to control costs. This new LIMS module provides the DEC laboratories with the flexibility to meet many future demands, whether through changes in regulations or statutes, new methods, or increased testing demands. Finally, the LIMS system enables the DEC to comply with regulatory and accreditation issues, to show full traceability throughout each sample's life cycle.

This article written by Delores Willis, Division of Environmental Chemistry, and Steve Montgomery, Office of Information Management Systems

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Salmonella

Control and Prevention (CDC) for further analysis. The CDC reported the *Salmonella* isolate as Subspecies I 35: y: l,w. This was a serotype that had never been seen before.

The CDC then forwarded the isolate to the World Health Organization (WHO) in France for further characterization. The WHO confirmed that this isolate is a unique *Salmonella* serotype and offered the Laboratories Administration an opportunity to name it. *Salmonella* ser. Baltimore was proposed by the Laboratories Administration and recently was accepted by the WHO as an official new serotype to be added to the more than 2,500 serotypes of *Salmonella* currently known.

O serogroup determination will identify isolates as *Salmonella* for diagnostic and treatment purposes. However, for public health surveillance, microbial source tracking, and specific etiology, full serotype determination is required. Typically, it is available only from public health laboratories and large reference laboratories. *Salmonella* isolates are serotyped based on the antigenic properties of their O (somatic carbohydrate) antigens, H (flagellar protein or flagellin) antigens, and Vi (capsular) antigen. For the more common serotypes other subtyping methods, such as pulse field gel electrophoresis (PFGE), may also be required.

H antigen consists of multiple flagellin subunits that make up the flagellar filament. An antigenically variable portion of flagellin is located in the middle region and is exposed to the surface. Salmonellae are unique among enteric bacteria because they commonly express two different flagellin antigens, referred to as phase 1 and phase 2.

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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.

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Salmonella

Often *Salmonella* serotypes that possess antigens for two flagellar phases (diphasic serotypes) express mostly one phase at a time. An important part of *Salmonella* serotyping involves getting bacteria to express the other phase, so its antigen can be identified. This can easily be done by having flagellated strains pass through semisolid medium to which sterile antiserum to the detected flagellar antigen has been added. Growth of the strain in this medum immobilizes cells expressing the detected antigen(s), and allows the growth of bacteria expressing the antigen(s) in the other phase.

The serotype for all *Salmonella* strains can be designated by an antigenic formula. In addition, serotypes belonging to subspecies I are given a name (e.g., *Salmonella* ser. Baltimore) that is typically related to the geographic location where the serotype was first isolated. The antigenic formulae of *Salmonella* serotypes are listed in the Kauffmann-White Scheme and are expressed as follows: O antigen(s), Vi antigen (when present): phase 1 H antigen(s): phase 2 H antigen(s) (when present). Therefore the antigenic formula for *Salmonella* ser. Baltimore is "35:y:lw." This serotype has one phase-1 flagellar antigen and two phase-2 flagellar antigens and belongs to subspecies I. Serotype names for subspecies I serotypes are written in Roman (not italicized) letters, and the first letter is capitalized.

The WHO Collaborating Center for Reference and Research on *Salmonella*, which is located at the Pasteur Institute in Paris, maintains the Kauffmann-White Scheme for the designation of *Salmonella* serotypes. The Kauffmann-White Scheme is updated annually with a listing of new serotypes.

This article was written by Dr. Jack DeBoy, Celere Leonard, and Dr. Jafar Razeq.

Laboratory Statistics

Reported from the
Laboratories Administration
during the month of
November 2009

ENTERIC BACTERIOLOGY

GENUS SEROVAR	SEX	AGE	#	JURISDICTION
CAMPYLOBACTER COLI				
	M	89	1	MONTGOMERY
	M	13	1	WICOMICO
CAMPYLOBACTER JEJUNI				
	M	0	1	ALLEGANY
	U	74	1	BALTIMORE
	F	53	1	BALTIMORE
	F	47	1	BALTIMORE
	F	45	1	BALTIMORE
	F	29	1	BALTIMORE
	M	63	1	BALTIMORE
	M	45	1	BALTIMORE
	U	4	1	BALTIMORE
	F	16	1	CECIL
	F	31	1	KENT
	F	0	1	MONTGOMERY
	M	40	1	OUT OF STATE
	F	1	1	OUT OF STATE
	M	19	1	OUT OF STATE
	F	4	1	OUT OF STATE
	M	13	1	OUT OF STATE
ESCHERICHIA COLI, SEROTYPE O157:H7				
	M	6	1	MONTGOMERY
	F	2	2	OUT OF STATE
	F	8	1	OUT OF STATE
	M	16	1	OUT OF STATE
SALMONELLA				
	M	49	1	ANNE ARUNDEL
	F	70	1	BALTIMORE CITY
	M	51	1	BALTIMORE CITY
	F	3	1	OUT OF STATE
	M	43	1	OUT OF STATE
	M	0	1	OUT OF STATE
	M	9	2	PRINCE GEORGE'S
SALMONELLA ISANGI				
	F	53	2	BALTIMORE CITY
	M	1	1	BALTIMORE CITY
SALMONELLA SER 4,12:-:1,2				
	M	33	1	ANNE ARUNDEL
	M	16	1	ANNE ARUNDEL
SALMONELLA SER 4,12:I:-				
	M	0	1	OUT OF STATE
	F	0	1	OUT OF STATE
SALMONELLA SER 4,5,12:I:-				
	M	0	1	BALTIMORE CITY
	M	81	1	WICOMICO
SALMONELLA SER BAREILLY				
	F	2	1	BALTIMORE CITY
	F	2	1	OUT OF STATE
	M	4	1	OUT OF STATE
	M	1	1	OUT OF STATE
SALMONELLA SER BRAENDERUP				
	M	0	1	BALTIMORE CITY
	M	34	1	HARFORD
SALMONELLA SER ENTERITIDIS				
	F	87	1	ALLEGANY
	F	57	1	ALLEGANY
	M	82	1	ALLEGANY
	F	74	2	ANNE ARUNDEL
	M	74	1	BALTIMORE
	M	29	1	BALTIMORE
	M	5	2	BALTIMORE
	U	0	1	BALTIMORE CITY
	F	26	1	BALTIMORE CITY
	F	20	1	BALTIMORE CITY
	F	6	1	BALTIMORE CITY
	F	0	1	BALTIMORE CITY
	M	86	1	BALTIMORE CITY
	M	62	2	BALTIMORE CITY
	M	58	1	BALTIMORE CITY
	M	5	1	BALTIMORE CITY
	M	3	1	BALTIMORE CITY
	M	2	9	BALTIMORE CITY
	U	18	1	BALTIMORE CITY
	F	39	1	FREDERICK
	F	61	2	HARFORD
	F	92	1	MONTGOMERY
	F	76	1	MONTGOMERY
	F	62	1	MONTGOMERY
	F	52	1	MONTGOMERY
	F	51	1	MONTGOMERY
	F	54	1	OUT OF STATE
	F	44	1	OUT OF STATE
	F	26	1	OUT OF STATE
	F	23	1	OUT OF STATE
	F	19	1	OUT OF STATE
	F	7	1	OUT OF STATE
	F	5	1	OUT OF STATE
	F	1	1	OUT OF STATE
	F	0	1	OUT OF STATE
	M	48	1	OUT OF STATE
	M	8	1	OUT OF STATE
	F	0	2	PRINCE GEORGE'S
	F	28	1	WASHINGTON
SALMONELLA SER HEIDELBERG				
	M	6	1	HARFORD
SALMONELLA SER INFANTIS				
	U	15	1	OUT OF STATE
	F	50	1	OUT OF STATE
	F	2	1	OUT OF STATE
	M	0	1	OUT OF STATE
SALMONELLA SER JAVIANA				
	M	67	1	TALBOT
SALMONELLA SER MIAMI				
	F	92	1	BALTIMORE CITY
SALMONELLA SER MISSISSIPPI				
	M	8	1	MONTGOMERY
	M	31	1	OUT OF STATE
SALMONELLA SER MUENCHEN				
	M	9	1	BALTIMORE
	U	0	1	BALTIMORE
	F	24	1	HARFORD
	F	26	1	OUT OF STATE
SALMONELLA SER NEWPORT				
	U	0	1	ANNE ARUNDEL
	F	45	1	BALTIMORE
	M	17	1	BALTIMORE CITY
	F	43	1	CALVERT
	F	71	1	HARFORD
	F	81	1	MONTGOMERY
	F	66	1	MONTGOMERY
	F	67	1	OUT OF STATE
	F	64	1	OUT OF STATE
	F	35	2	OUT OF STATE

F	2	1	OUT OF STATE
F	60	1	TALBOT
F	32	2	UNKNOWN
M	36	1	WASHINGTON
F	2	1	WICOMICO
F	0	1	WICOMICO
M	8	1	WICOMICO
SALMONELLA SER PANAMA			
F	0	1	OUT OF STATE
SALMONELLA SER SAINTPAUL			
F	0	1	BALTIMORE CITY
M	4	1	OUT OF STATE
M	12	1	OUT OF STATE
SALMONELLA SER TYPHIMURIUM			
F	44	1	BALTIMORE
F	27	1	BALTIMORE
F	22	1	BALTIMORE
F	17	1	BALTIMORE
U	0	1	BALTIMORE CITY
F	19	1	BALTIMORE CITY
F	6	1	FREDERICK
F	0	1	FREDERICK
F	37	1	OUT OF STATE
F	27	1	OUT OF STATE
F	25	1	OUT OF STATE
F	3	1	OUT OF STATE
F	2	1	OUT OF STATE
M	22	1	OUT OF STATE
M	21	1	OUT OF STATE
M	10	1	OUT OF STATE
SALMONELLA SER TYPHIMURIUM VAR COPENHAGEN			
M	25	1	BALTIMORE
M	13	1	BALTIMORE
U	0	1	BALTIMORE
F	15	1	CARROLL
M	7	1	OUT OF STATE
M	3	1	OUT OF STATE
M	2	1	OUT OF STATE
SALMONELLA UNTYPEABLE			
F	80	1	ALLEGANY
F	78	1	BALTIMORE
F	90	1	BALTIMORE CITY
M	0	2	TALBOT
U	0	1	UNKNOWN
SHIGELLA FLEXNERI			
M	40	1	BALTIMORE CITY
SHIGELLA SONNEI			
M	76	2	ANNE ARUNDEL
U	1	1	BALTIMORE
F	0	1	BALTIMORE
F	7	2	BALTIMORE
F	6	1	BALTIMORE
F	0	1	BALTIMORE CITY
F	44	2	BALTIMORE CITY
F	27	1	BALTIMORE CITY
F	8	1	BALTIMORE CITY
F	3	2	BALTIMORE CITY
M	5	1	BALTIMORE CITY
M	1	2	BALTIMORE CITY
F	40	1	CECIL
U	4	1	OUT OF STATE
U	4	1	OUT OF STATE
F	24	1	OUT OF STATE
F	4	1	OUT OF STATE
F	3	1	OUT OF STATE
F	1	1	OUT OF STATE
M	42	1	OUT OF STATE
M	5	1	OUT OF STATE
M	0	1	UNKNOWN
VIBRIO VULNIFICUS			
M	71	1	BALTIMORE CITY
M	59	1	PRINCE GEORGE'S

TOTAL 194

ISOLATES - REFERENCE

GENUS SPECIES		
SOURCE	#	JURISDICTION
NEISSERIA MENINGITIDIS		
SPUTUM	2	BALTIMORE CITY

TOTAL 2

ISOLATES - MISCELLANEOUS

GENUS SPECIES		
SOURCE	#	JURISDICTION
ACINETOBACTER CALCOACETICUS-ACINETOBACTER BAUMANNI COMPLEX		
SPUTUM	1	WASHINGTON
CITROBACTER BRAAKII		
CSF	1	BALTIMORE CITY
CLOSTRIDIUM CLOSTRIDIOFORME		
BLOOD	1	BALTIMORE CITY
ENTEROBACTER AEROGENES		
LUNG	1	BALTIMORE CITY
ENTEROCOCCUS FAECALIS		
CSF	1	BALTIMORE CITY
ESCHERICHIA COLI		
URINE	1	BALTIMORE CITY
WOUND	1	BALTIMORE CITY
VAGINAL	1	MONTGOMERY
NASAL	1	SOMERSET
GARDNERELLA VAGINALIS		
VAGINAL	2	PRINCE GEORGE'S
VAGINAL	3	SOMERSET
VAGINAL	1	SOMERSET
HAEMOPHILUS INFLUENZAE		
LUNG	1	BALTIMORE CITY
KLEBSIELLA PNEUMONIAE		
ABSCESS	1	BALTIMORE CITY
BLOOD	1	BALTIMORE CITY
KLEBSIELLA PNEUMONIAE SS OZAENAE		
BLOOD	1	BALTIMORE CITY
PROTEUS MIRABILIS		
WOUND	1	MONTGOMERY
TRACHEA	2	WASHINGTON
SERRATIA MARCESCENS		
WOUND	1	FREDERICK
STAPHYLOCOCCUS AUREUS		
BLOOD	2	BALTIMORE CITY
LESION	2	BALTIMORE CITY
SKIN	1	BALTIMORE CITY
WOUND	1	BALTIMORE CITY
EYE	1	CARROLL
WOUND	1	CARROLL
WOUND	1	FREDERICK
WOUND	1	MONTGOMERY
WOUND	1	PRINCE GEORGE'S
WOUND	1	SOMERSET
STAPHYLOCOCCUS, COAGULASE NEGATIVE		
BLOOD	3	BALTIMORE CITY
CSF	1	BALTIMORE CITY
STREPTOCOCCUS, ALPHA-HEMOLYTIC		
BLOOD	1	BALTIMORE CITY
STREPTOCOCCUS, BETA HEMOLYTIC, GROUP A		
THROAT	4	ALLEGANY
WOUND	1	BALTIMORE CITY
STREPTOCOCCUS, BETA HEMOLYTIC, NON-GROUP A		
THROAT	17	ALLEGANY
STREPTOCOCCUS, BETA HEMOLYTIC, GROUP B		
VAGINAL	1	ANNE ARUNDEL
VAGINAL	2	ANNE ARUNDEL
BLOOD	2	BALTIMORE CITY
VAGINAL	1	HOWARD
VAGINAL	1	HOWARD
VAGINAL	3	PRINCE GEORGE'S
VAGINAL	5	PRINCE GEORGE'S
VAGINAL	4	SOMERSET

TOTAL 81

SEXUALLY TRANSMITTED DISEASES

GENUS SPECIES		
SEX	#	JURISDICTION
SYPHILIS SEROLOGY		
M	1	ALLEGANY
F	2	ANNE ARUNDEL
M	2	ANNE ARUNDEL
F	1	BALTIMORE
M	3	BALTIMORE
F	7	BALTIMORE CITY
M	29	BALTIMORE CITY
U	1	BALTIMORE CITY
F	1	CALVERT
M	1	CAROLINE
M	1	CARROLL
M	1	CHARLES
F	2	FREDERICK
M	1	FREDERICK
U	1	FREDERICK
M	1	HOWARD
F	2	MONTGOMERY
M	3	MONTGOMERY
F	6	PRINCE GEORGE'S
M	24	PRINCE GEORGE'S
U	1	PRINCE GEORGE'S
F	1	SOMERSET
F	2	TALBOT
M	1	TALBOT

TOTAL 95

CHLAMYDIA TRACHOMATIS		
F	3	ALLEGANY
M	6	ALLEGANY
F	11	ANNE ARUNDEL
M	10	ANNE ARUNDEL
U	1	ANNE ARUNDEL
F	20	BALTIMORE
M	26	BALTIMORE
M	26	BALTIMORE CITY
U	4	BALTIMORE CITY
F	1	CALVERT
M	1	CALVERT
F	1	CARROLL
M	2	CARROLL
F	1	CECIL

M	2	CECIL
F	9	CHARLES
M	7	CHARLES
F	1	DORCHESTER
M	1	DORCHESTER
F	5	FREDERICK
M	1	FREDERICK
M	2	GARRETT
F	2	HARFORD
M	7	HARFORD
U	1	HARFORD
F	2	HOWARD
M	5	HOWARD
F	2	KENT
M	2	KENT
F	11	MONTGOMERY
M	2	MONTGOMERY
F	62	PRINCE GEORGE'S
M	43	PRINCE GEORGE'S
U	1	PRINCE GEORGE'S
F	3	QUEEN ANNE'S
F	2	SAINT MARY'S
M	1	SAINT MARY'S
U	1	SAINT MARY'S
F	7	SOMERSET
M	7	SOMERSET
F	1	TALBOT
M	4	TALBOT
F	2	WASHINGTON
M	1	WASHINGTON
F	19	WICOMICO
M	5	WICOMICO

TOTAL 334

NEISSERIA GONORRHOEAE

F	1	ALLEGANY
M	2	BALTIMORE
F	1	CHARLES
M	3	CHARLES
F	1	MONTGOMERY
M	6	MONTGOMERY
F	17	PRINCE GEORGE'S
M	18	PRINCE GEORGE'S
M	1	SAINT MARY'S
F	1	SOMERSET
M	3	WICOMICO

TOTAL 54

MYCOBACTERIOLOGY

ISOLATE

SEX	AGE	#	JURISDICTION
MYCOBACTERIUM ABSCESSUS			
F	48	1	BALTIMORE
M	44	1	BALTIMORE CITY
MYCOBACTERIUM AVIUM COMPLEX			
F	76	1	ANNE ARUNDEL
F	86	1	ANNE ARUNDEL
F	67	1	BALTIMORE
M	73	1	BALTIMORE
U	36	1	BALTIMORE CITY
F	31	1	BALTIMORE CITY
M	41	2	BALTIMORE CITY
M	45	1	BALTIMORE CITY
M	49	1	BALTIMORE CITY
M	90	1	BALTIMORE CITY
U	0	1	FREDERICK
F	50	2	FREDERICK
F	64	1	FREDERICK
M	55	4	FREDERICK
F	73	1	MONTGOMERY
F	74	1	PRINCE GEORGE'S
M	43	1	TALBOT
M	64	2	TALBOT
F	85	1	WASHINGTON
M	46	1	WICOMICO
MYCOBACTERIUM BOVIS			
M	80	1	BALTIMORE
MYCOBACTERIUM FORTUITUM			
M	82	1	ANNE ARUNDEL
M	53	1	TALBOT
MYCOBACTERIUM FORTUITUM COMPLEX			
F	30	1	PRINCE GEORGE'S
F	55	1	PRINCE GEORGE'S
M	72	2	PRINCE GEORGE'S
MYCOBACTERIUM GORDONAE			
M	71	1	BALTIMORE
M	90	2	BALTIMORE CITY
F	57	1	HOWARD
M	73	1	HOWARD
F	66	1	MONTGOMERY
M	23	1	PRINCE GEORGE'S
M	86	1	PRINCE GEORGE'S
F	76	1	WICOMICO
MYCOBACTERIUM KANSASII			
M	58	1	BALTIMORE
M	95	1	BALTIMORE CITY
MYCOBACTERIUM SZULGAI			
M	36	1	OUT OF STATE
MYCOBACTERIUM TUBERCULOSIS			
M	28	1	BALTIMORE CITY
M	82	1	BALTIMORE CITY
M	39	1	HARFORD
M	43	1	MONTGOMERY
F	89	1	OUT OF STATE
F	30	1	PRINCE GEORGE'S
F	65	1	PRINCE GEORGE'S
MYCOBACTERIUM TUBERCULOSIS COMPLEX			
M	60	1	BALTIMORE
F	43	1	BALTIMORE CITY
M	45	5	BALTIMORE CITY
M	57	1	BALTIMORE CITY
M	73	1	BALTIMORE CITY
F	43	2	DORCHESTER
F	50	1	HARFORD
M	39	1	HARFORD
F	21	2	MONTGOMERY
F	55	4	MONTGOMERY
F	75	1	MONTGOMERY
M	21	1	MONTGOMERY
M	26	2	MONTGOMERY
M	45	10	MONTGOMERY
M	52	1	MONTGOMERY
M	68	1	MONTGOMERY
M	74	1	MONTGOMERY
F	65	1	OUT OF STATE
M	34	1	OUT OF STATE
F	19	7	PRINCE GEORGE'S
F	30	3	PRINCE GEORGE'S
F	65	2	PRINCE GEORGE'S
M	29	7	PRINCE GEORGE'S
M	30	1	PRINCE GEORGE'S
M	41	6	PRINCE GEORGE'S
M	41	4	TALBOT
SCOTOCHROMOGENIC MYCOBACTERIA			
M	57	1	BALTIMORE

TOTAL 123

MYCOBACTERIUM SUSCEPTIBILITY RESULTS

28 ISOLATES IDENTIFIED
3 DRUG RESISTANT STRAINS FOUND

#	JURISDICTION	DRUG(S)
1	MONTGOMERY	ISONIAZID
1	MONTGOMERY	ISONIAZID
1[C]	PRINCE GEORGE'S	ISONIAZID, STREPTOMYCIN, RIFAMPIN, ETHAMBUTOL, ETHIONAMIDE

[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. bovis
M. bovis, BCG
M. africanum
M. microti
M. canettii

MYCOLOGY

ISOLATE

SEX	AGE	#	JURISDICTION
ALTERNARIA SPECIES			
F	46	1	TALBOT
APOPHYSOMYCES			
F	44	1	PRINCE GEORGE'S
ASPERGILLUS FUMIGATUS			
F	37	1	ALLEGANY
M	64	1	BALTIMORE CITY
F	46	1	CALVERT
M	72	1	TALBOT
M	79	1	TALBOT
ASPERGILLUS NIDULANS			
F	81	1	TALBOT
ASPERGILLUS NIGER			
F	59	1	ANNE ARUNDEL
F	55	1	MONTGOMERY
M	45	1	MONTGOMERY
U	72	1	TALBOT
M	38	1	TALBOT
ASPERGILLUS OCHRACEUS			
F	46	1	PRINCE GEORGE'S
ASPERGILLUS TERREUS			
F	29	1	ANNE ARUNDEL
CANDIDA ALBICANS			
F	30	1	CALVERT
F	47	1	CALVERT
F	58	1	MONTGOMERY
M	80	1	MONTGOMERY
F	17	1	PRINCE GEORGE'S
F	20	1	PRINCE GEORGE'S
F	26	1	PRINCE GEORGE'S
F	37	1	PRINCE GEORGE'S
F	44	1	PRINCE GEORGE'S
F	55	1	PRINCE GEORGE'S
F	18	3	SOMERSET
F	19	2	SOMERSET
F	20	2	SOMERSET
F	22	1	SOMERSET
F	24	1	SOMERSET
M	19	1	SOMERSET
CANDIDA GLABRATA			
F	55	1	PRINCE GEORGE'S

CANDIDA LUSITANIAE			
F	80	1	BALTIMORE
CANDIDA PARAPSILOSIS			
F	77	1	MONTGOMERY
F	56	1	PRINCE GEORGE'S
CANDIDA TROPICALIS			
M	26	1	BALTIMORE CITY
U	21	1	CARROLL
CLADOSPORIUM SPECIES			
M	79	1	TALBOT
CURVULARIA SPECIES			
F	77	1	ANNE ARUNDEL
F	44	1	PRINCE GEORGE'S
F	56	1	TALBOT
M	2	1	TALBOT
EPICOCCUM SPECIES			
M	68	1	ALLEGANY
FUSARIUM SPECIES			
M	54	1	ANNE ARUNDEL
M	64	1	BALTIMORE CITY
GEOTRICHUM SPECIES			
M	76	1	TALBOT
MUCOR SPECIES			
M	68	1	ALLEGANY
MYCELIA STERILIA			
M	61	1	CHARLES
NIGROSPORA SPECIES			
M	0	1	WICOMICO
NO FUNGI ISOLATED.			
M	51	1	BALTIMORE CITY
M	77	1	BALTIMORE CITY
NOCARDIA FARCINICA			
M	51	1	BALTIMORE CITY
NOCARDIA SPECIES			
F	65	1	CARROLL
PAECILOMYCES SPECIES			
F	74	1	PRINCE GEORGE'S
PENICILLIUM SPECIES			
U	55	1	ANNE ARUNDEL
F	40	1	ANNE ARUNDEL
F	55	2	MONTGOMERY
M	67	1	MONTGOMERY
M	29	1	TALBOT
M	65	2	TALBOT
M	79	1	TALBOT
M	84	1	WICOMICO
SCEDOSPORIUM APIOSPERMUM			
F	55	4	MONTGOMERY
F	74	1	PRINCE GEORGE'S
TRICHOPHYTON RUBRUM			
M	86	1	ALLEGANY
M	21	1	TALBOT
TRICHOPHYTON TONSURANS			
U	0	1	PRINCE GEORGE'S
F	1	1	TALBOT
F	4	1	TALBOT
M	2	1	TALBOT
TSUKAMURELLA SPECIES			
U	75	1	BALTIMORE CITY
YEAST			
F	42	1	BALTIMORE CITY
F	77	1	BALTIMORE CITY
M	64	1	BALTIMORE CITY
M	45	1	MONTGOMERY
F	58	1	PRINCE GEORGE'S
F	63	2	PRINCE GEORGE'S
F	70	1	PRINCE GEORGE'S
F	72	1	PRINCE GEORGE'S
F	91	1	PRINCE GEORGE'S
TOTAL		**90**	

PARASITOLOGY

GENUS/SPECIES	#	JURISDICTION
BLASTOCYSTIS HOMINIS		
	2	PRINCE GEORGE'S
	1	MONTGOMERY
CESTODE		
	1	PRINCE GEORGE'S
CHILOMASTIX MESNILI		
	1	MONTGOMERY
DIENTAMOEBA FRAGILIS		
	1	BALTIMORE CITY
ENDOLIMAX NANA		
	1	PRINCE GEORGE'S
	1	FREDERICK
	3	PRINCE GEORGE'S
	2	MONTGOMERY
	1	HOWARD
	1	PRINCE GEORGE'S
	1	BALTIMORE CITY
	2	HOWARD
	4	MONTGOMERY
	1	PRINCE GEORGE'S
	1	MONTGOMERY
	1	FREDERICK
ENTAMOEBA COLI		
	2	HOWARD
	3	PRINCE GEORGE'S
	1	BALTIMORE CITY
	2	HOWARD
	5	MONTGOMERY
	2	PRINCE GEORGE'S
	3	HOWARD
ENTAMOEBA HARTMANNI		
	3	PRINCE GEORGE'S
	1	FREDERICK
	1	BALTIMORE
ENTEROBIUS VERMICULARIS		
	1	MONTGOMERY
	1	PRINCE GEORGE'S
GIARDIA LAMBLIA		
	3	BALTIMORE CITY
HOOKWORM		
	1	HOWARD
	2	PRINCE GEORGE'S
	1	PRINCE GEORGE'S
IODAMOEBA BÜTSCHLII		
	1	CECIL
IXODES SCAPULARIS		
	1	MONTGOMERY
PLASMODIUM MALARIAE		
	1	HOWARD
TRICHURIS TRICHIURA		
	3	PRINCE GEORGE'S
	2	PRINCE GEORGE'S
TOTAL	**65**	

WATER MICROBIOLOGY

	# TESTED	# NON-COMPLIANT
COMMUNITY	1	0
NON-COMMUNITY	327	116
TOTAL	**328**	**116**

FOOD PROTECTION

	TOTALS
FOOD	
NUMBER OF SAMPLES	43
NOTABLE PATHOGENS:	
CAMPYLOBACTER SP.	3
LISTERIA SP.	0
SALMONELLA SP.	1
CRABMEAT	
NUMBER OF SAMPLES	0
EXCEEDING STANDARDS[1]	0
NOTABLE PATHOGENS:	
LISTERIA INNOCUA	0
SHELLFISH	
NUMBER OF SAMPLES	0
EXCEEDING STANDARDS[2]	0
TOTAL STANDARDS EXCEEDED	4
SHELLFISH GROWING WATERS	
NUMBER OF SAMPLES	145
OTHER	
CLOSTRIDIUM BOTULINUM	4
TOTAL NUMBER OF SAMPLES	**196**

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
ADENOVIRUS				
	F	8	1	WICOMICO
COXSACKIEVIRUS B1				
	M	0	1	WICOMICO
COXSACKIEVIRUS B4				
	F	5	1	TALBOT
	F	5	1	TALBOT
HERPES SIMPLEX VIRUS TYPE 1				
	M	18	1	PRINCE GEORGE'S
	F	21	1	WICOMICO
	M	0	1	BALTIMORE CITY
HERPES SIMPLEX VIRUS TYPE 2				
	F	0	1	BALTIMORE
PARAINFLUENZA VIRUS 1				
	M	3	1	ALLEGANY
	M	78	1	ANNE ARUNDEL
	M	0	1	BALTIMORE
	F	5	1	PRINCE GEORGE'S
	M	1	1	WICOMICO
	U	0	1	WICOMICO
	F	2	1	BALTIMORE CITY
	M	0	1	BALTIMORE CITY
PARAINFLUENZA VIRUS 2				
	M	1	1	ANNE ARUNDEL
	M	2	1	PRINCE GEORGE'S
	F	5	1	WICOMICO
	M	3	1	WICOMICO
	F	21	1	WORCESTER
RESPIRATORY SYNCYTIAL VIRUS				
	M	1	1	WICOMICO
TOTAL		**22**		

VIRAL POLYMERASE CHAIN REACTION (PCR)

ISOLATE

SEX	AGE	#	JURISDICTION
HERPES SIMPLEX VIRUS TYPE 1			
F	19	1	ALLEGANY
F	21	2	ALLEGANY
F	18	1	BALTIMORE
F	22	1	BALTIMORE
F	27	2	BALTIMORE CITY
F	28	1	BALTIMORE CITY
M	18	1	BALTIMORE CITY
F	23	1	DORCHESTER
F	25	1	FREDERICK
F	18	2	PRINCE GEORGE'S
F	19	3	PRINCE GEORGE'S
F	20	1	PRINCE GEORGE'S
F	22	1	PRINCE GEORGE'S
M	22	1	PRINCE GEORGE'S
F	18	1	SOMERSET
F	22	1	SOMERSET
F	20	1	WICOMICO
HERPES SIMPLEX VIRUS TYPE 2			
F	22	1	ALLEGANY
F	41	1	ALLEGANY
M	27	1	ALLEGANY
F	26	1	ANNE ARUNDEL
F	28	1	ANNE ARUNDEL
M	21	1	BALTIMORE
M	31	1	BALTIMORE
F	0	1	BALTIMORE CITY
F	18	3	BALTIMORE CITY
F	20	1	BALTIMORE CITY
F	21	1	BALTIMORE CITY
F	23	1	BALTIMORE CITY
F	24	1	BALTIMORE CITY
F	25	2	BALTIMORE CITY
F	26	1	BALTIMORE CITY
F	28	1	BALTIMORE CITY
F	46	1	BALTIMORE CITY
F	51	1	BALTIMORE CITY
F	53	1	BALTIMORE CITY
F	64	1	BALTIMORE CITY
M	0	1	BALTIMORE CITY
M	18	1	BALTIMORE CITY
M	22	1	BALTIMORE CITY
M	24	1	BALTIMORE CITY
M	25	1	BALTIMORE CITY
M	27	1	BALTIMORE CITY
M	28	1	BALTIMORE CITY
M	30	1	BALTIMORE CITY
M	32	1	BALTIMORE CITY
M	39	1	BALTIMORE CITY
F	20	1	CARROLL
F	20	1	CECIL
F	38	1	CECIL
F	34	1	CHARLES
F	39	1	FREDERICK
M	25	1	FREDERICK
F	36	1	MONTGOMERY
F	18	1	PRINCE GEORGE'S
F	19	1	PRINCE GEORGE'S
F	21	1	PRINCE GEORGE'S
F	24	1	PRINCE GEORGE'S
M	54	1	PRINCE GEORGE'S
F	24	1	TALBOT
F	21	1	WICOMICO
INFLUENZA A(H1/N1) NOVEL A			
U	1	1	ALLEGANY
U	15	1	ALLEGANY
U	19	1	ALLEGANY
F	0	2	ALLEGANY
F	1	1	ALLEGANY
F	10	1	ALLEGANY
F	11	3	ALLEGANY
F	13	2	ALLEGANY
F	15	1	ALLEGANY
F	16	1	ALLEGANY
F	19	1	ALLEGANY
F	2	2	ALLEGANY
F	21	2	ALLEGANY
F	23	1	ALLEGANY
F	24	2	ALLEGANY
F	27	1	ALLEGANY
F	32	1	ALLEGANY
F	4	3	ALLEGANY
F	47	1	ALLEGANY
F	49	2	ALLEGANY
F	5	2	ALLEGANY
F	50	1	ALLEGANY
F	59	1	ALLEGANY
F	6	4	ALLEGANY
F	7	2	ALLEGANY
F	8	2	ALLEGANY
M	0	7	ALLEGANY
M	1	1	ALLEGANY
M	11	1	ALLEGANY
M	13	2	ALLEGANY
M	14	1	ALLEGANY
M	15	2	ALLEGANY
M	16	4	ALLEGANY
M	17	1	ALLEGANY
M	18	1	ALLEGANY
M	2	3	ALLEGANY
M	21	2	ALLEGANY
M	28	1	ALLEGANY
M	3	2	ALLEGANY
M	32	1	ALLEGANY
M	4	2	ALLEGANY
M	5	6	ALLEGANY
M	6	2	ALLEGANY
M	7	1	ALLEGANY
M	79	1	ALLEGANY
M	8	5	ALLEGANY
M	9	2	ALLEGANY
U	0	1	ANNE ARUNDEL
U	1	1	ANNE ARUNDEL
U	4	1	ANNE ARUNDEL
U	71	1	ANNE ARUNDEL
F	0	2	ANNE ARUNDEL
F	13	1	ANNE ARUNDEL
F	21	1	ANNE ARUNDEL
F	26	1	ANNE ARUNDEL
F	27	1	ANNE ARUNDEL
F	4	1	ANNE ARUNDEL
F	43	1	ANNE ARUNDEL
F	45	2	ANNE ARUNDEL
F	50	1	ANNE ARUNDEL
F	52	2	ANNE ARUNDEL
F	53	2	ANNE ARUNDEL
F	54	1	ANNE ARUNDEL
F	55	1	ANNE ARUNDEL
M	0	2	ANNE ARUNDEL
M	1	1	ANNE ARUNDEL
M	19	1	ANNE ARUNDEL
M	23	1	ANNE ARUNDEL
M	32	1	ANNE ARUNDEL
M	41	1	ANNE ARUNDEL
M	42	1	ANNE ARUNDEL
M	46	1	ANNE ARUNDEL
M	5	2	ANNE ARUNDEL
M	51	2	ANNE ARUNDEL
M	55	1	ANNE ARUNDEL
M	58	1	ANNE ARUNDEL
M	6	1	ANNE ARUNDEL
M	62	1	ANNE ARUNDEL
M	67	1	ANNE ARUNDEL
U	1	1	BALTIMORE
U	16	1	BALTIMORE
U	28	1	BALTIMORE
U	31	1	BALTIMORE
U	42	1	BALTIMORE
U	45	1	BALTIMORE
U	47	1	BALTIMORE
U	51	1	BALTIMORE
U	52	1	BALTIMORE
U	53	1	BALTIMORE
U	55	2	BALTIMORE
U	64	1	BALTIMORE
F	17	2	BALTIMORE
F	18	2	BALTIMORE
F	19	2	BALTIMORE
F	20	2	BALTIMORE
F	21	3	BALTIMORE
F	23	1	BALTIMORE
F	24	1	BALTIMORE
F	25	1	BALTIMORE
F	26	1	BALTIMORE
F	27	2	BALTIMORE
F	29	1	BALTIMORE
F	35	1	BALTIMORE
F	36	1	BALTIMORE
F	38	1	BALTIMORE
F	42	1	BALTIMORE
F	44	1	BALTIMORE
F	45	1	BALTIMORE
F	46	1	BALTIMORE
F	51	1	BALTIMORE
F	55	1	BALTIMORE
F	57	1	BALTIMORE
F	59	1	BALTIMORE
F	69	1	BALTIMORE
F	70	1	BALTIMORE
F	72	1	BALTIMORE
F	73	1	BALTIMORE
M	11	1	BALTIMORE
M	12	1	BALTIMORE
M	18	1	BALTIMORE
M	19	3	BALTIMORE
M	2	3	BALTIMORE
M	21	1	BALTIMORE
M	22	1	BALTIMORE
M	23	1	BALTIMORE
M	26	1	BALTIMORE
M	29	1	BALTIMORE
M	30	1	BALTIMORE
M	31	1	BALTIMORE
M	34	1	BALTIMORE
M	35	1	BALTIMORE
M	36	1	BALTIMORE
M	40	1	BALTIMORE
M	45	1	BALTIMORE
M	46	1	BALTIMORE
M	47	1	BALTIMORE
M	48	1	BALTIMORE
M	56	1	BALTIMORE
M	57	1	BALTIMORE
M	60	1	BALTIMORE
M	7	1	BALTIMORE

M	72	1	BALTIMORE
M	75	1	BALTIMORE
M	76	1	BALTIMORE
M	77	1	BALTIMORE
M	8	1	BALTIMORE
U	0	1	BALTIMORE CITY
U	1	1	BALTIMORE CITY
U	17	1	BALTIMORE CITY
U	19	1	BALTIMORE CITY
U	2	1	BALTIMORE CITY
U	21	1	BALTIMORE CITY
U	22	1	BALTIMORE CITY
U	24	1	BALTIMORE CITY
U	3	2	BALTIMORE CITY
U	32	1	BALTIMORE CITY
U	34	2	BALTIMORE CITY
U	39	3	BALTIMORE CITY
U	4	2	BALTIMORE CITY
U	5	3	BALTIMORE CITY
U	50	1	BALTIMORE CITY
U	51	2	BALTIMORE CITY
U	53	1	BALTIMORE CITY
U	54	2	BALTIMORE CITY
U	55	1	BALTIMORE CITY
U	65	1	BALTIMORE CITY
U	73	1	BALTIMORE CITY
U	8	1	BALTIMORE CITY
F	0	11	BALTIMORE CITY
F	1	3	BALTIMORE CITY
F	10	2	BALTIMORE CITY
F	12	3	BALTIMORE CITY
F	14	1	BALTIMORE CITY
F	17	1	BALTIMORE CITY
F	18	2	BALTIMORE CITY
F	2	1	BALTIMORE CITY
F	20	1	BALTIMORE CITY
F	21	2	BALTIMORE CITY
F	22	3	BALTIMORE CITY
F	25	3	BALTIMORE CITY
F	26	2	BALTIMORE CITY
F	28	1	BALTIMORE CITY
F	29	3	BALTIMORE CITY
F	3	1	BALTIMORE CITY
F	31	1	BALTIMORE CITY
F	34	1	BALTIMORE CITY
F	40	2	BALTIMORE CITY
F	43	2	BALTIMORE CITY
F	45	2	BALTIMORE CITY
F	46	1	BALTIMORE CITY
F	47	1	BALTIMORE CITY
F	49	2	BALTIMORE CITY
F	5	1	BALTIMORE CITY
F	52	4	BALTIMORE CITY
F	55	1	BALTIMORE CITY
F	58	3	BALTIMORE CITY
F	59	1	BALTIMORE CITY
F	60	2	BALTIMORE CITY
F	61	1	BALTIMORE CITY
F	62	1	BALTIMORE CITY
F	63	2	BALTIMORE CITY
F	7	1	BALTIMORE CITY
F	8	1	BALTIMORE CITY
M	0	9	BALTIMORE CITY
M	1	1	BALTIMORE CITY
M	10	1	BALTIMORE CITY
M	13	1	BALTIMORE CITY
M	14	2	BALTIMORE CITY
M	17	4	BALTIMORE CITY
M	19	2	BALTIMORE CITY
M	2	3	BALTIMORE CITY
M	20	1	BALTIMORE CITY
M	23	1	BALTIMORE CITY
M	24	1	BALTIMORE CITY
M	26	1	BALTIMORE CITY
M	28	1	BALTIMORE CITY
M	29	1	BALTIMORE CITY
M	3	3	BALTIMORE CITY
M	33	2	BALTIMORE CITY
M	35	1	BALTIMORE CITY
M	39	4	BALTIMORE CITY
M	4	3	BALTIMORE CITY
M	41	1	BALTIMORE CITY
M	42	1	BALTIMORE CITY
M	45	1	BALTIMORE CITY
M	46	1	BALTIMORE CITY
M	48	1	BALTIMORE CITY
M	49	1	BALTIMORE CITY
M	5	1	BALTIMORE CITY
M	51	2	BALTIMORE CITY
M	52	1	BALTIMORE CITY
M	53	1	BALTIMORE CITY
M	54	1	BALTIMORE CITY
M	55	3	BALTIMORE CITY
M	56	1	BALTIMORE CITY
M	57	2	BALTIMORE CITY
M	58	1	BALTIMORE CITY
M	59	2	BALTIMORE CITY
M	6	4	BALTIMORE CITY
M	64	1	BALTIMORE CITY
M	69	1	BALTIMORE CITY
M	7	1	BALTIMORE CITY
M	71	1	BALTIMORE CITY
F	14	1	CALVERT
F	2	1	CALVERT
F	22	1	CALVERT
F	49	1	CALVERT
F	7	1	CALVERT
F	8	1	CALVERT
M	0	2	CALVERT
M	1	1	CALVERT
M	2	1	CALVERT
M	3	1	CALVERT
M	41	1	CALVERT
M	64	1	CALVERT
F	0	1	CARROLL
F	20	1	CARROLL
F	5	1	CARROLL
F	62	1	CARROLL
M	12	1	CARROLL
M	6	2	CARROLL
U	17	1	CECIL
U	19	1	CECIL
U	37	1	CECIL
U	60	1	CECIL
F	1	1	CECIL
F	11	1	CECIL
F	15	2	CECIL
F	16	2	CECIL
F	19	1	CECIL
F	23	1	CECIL
F	41	1	CECIL
F	45	2	CECIL
F	46	1	CECIL
F	49	1	CECIL
F	58	1	CECIL
F	63	1	CECIL
F	66	1	CECIL
F	7	1	CECIL
F	8	1	CECIL
F	9	1	CECIL
M	1	1	CECIL
M	15	1	CECIL
M	16	1	CECIL
M	27	1	CECIL
M	28	1	CECIL
M	3	1	CECIL
M	33	1	CECIL
M	4	2	CECIL
M	49	1	CECIL
M	5	1	CECIL
M	53	1	CECIL
M	45	1	CHARLES
F	19	1	DORCHESTER
F	47	1	DORCHESTER
F	33	1	FREDERICK
F	4	1	FREDERICK
F	47	3	FREDERICK
F	64	1	FREDERICK
M	2	2	FREDERICK
F	18	1	GARRETT
F	21	1	GARRETT
F	30	1	GARRETT
F	38	1	GARRETT
F	58	1	GARRETT
M	71	1	GARRETT
U	72	1	HARFORD
F	0	1	HARFORD
F	27	1	HARFORD
F	29	1	HARFORD
F	39	2	HARFORD
F	42	1	HARFORD
F	5	1	HARFORD
F	52	1	HARFORD
F	53	1	HARFORD
F	54	1	HARFORD
F	55	1	HARFORD
F	59	1	HARFORD
F	60	1	HARFORD
M	19	1	HARFORD
M	25	1	HARFORD
M	26	1	HARFORD
M	33	1	HARFORD
M	38	1	HARFORD
M	47	1	HARFORD
M	7	1	HARFORD
F	20	1	KENT
M	3	1	KENT
M	45	1	KENT
U	29	1	MONTGOMERY
U	45	1	MONTGOMERY
F	0	1	MONTGOMERY
F	16	1	MONTGOMERY
F	28	1	MONTGOMERY
F	35	1	MONTGOMERY
F	36	1	MONTGOMERY
F	52	1	MONTGOMERY
F	9	1	MONTGOMERY
M	0	1	MONTGOMERY
M	16	1	MONTGOMERY
M	17	1	MONTGOMERY
M	21	1	MONTGOMERY
M	24	1	MONTGOMERY
M	60	1	MONTGOMERY
M	70	1	MONTGOMERY
U	3	1	PRINCE GEORGE'S
U	5	1	PRINCE GEORGE'S
F	0	2	PRINCE GEORGE'S
F	1	1	PRINCE GEORGE'S
F	12	1	PRINCE GEORGE'S
F	19	1	PRINCE GEORGE'S
F	20	1	PRINCE GEORGE'S
F	22	2	PRINCE GEORGE'S
F	24	1	PRINCE GEORGE'S

F	27	1	PRINCE GEORGE'S
F	28	1	PRINCE GEORGE'S
F	29	1	PRINCE GEORGE'S
F	3	1	PRINCE GEORGE'S
F	30	1	PRINCE GEORGE'S
F	32	1	PRINCE GEORGE'S
F	34	1	PRINCE GEORGE'S
F	41	2	PRINCE GEORGE'S
F	43	1	PRINCE GEORGE'S
F	45	1	PRINCE GEORGE'S
F	49	1	PRINCE GEORGE'S
F	52	2	PRINCE GEORGE'S
F	53	1	PRINCE GEORGE'S
F	55	1	PRINCE GEORGE'S
F	56	1	PRINCE GEORGE'S
F	59	2	PRINCE GEORGE'S
F	60	1	PRINCE GEORGE'S
F	61	2	PRINCE GEORGE'S
F	64	1	PRINCE GEORGE'S
M	0	4	PRINCE GEORGE'S
M	1	1	PRINCE GEORGE'S
M	22	1	PRINCE GEORGE'S
M	23	1	PRINCE GEORGE'S
M	27	1	PRINCE GEORGE'S
M	32	1	PRINCE GEORGE'S
M	38	1	PRINCE GEORGE'S
M	39	1	PRINCE GEORGE'S
M	41	1	PRINCE GEORGE'S
M	51	1	PRINCE GEORGE'S
M	55	1	PRINCE GEORGE'S
M	57	1	PRINCE GEORGE'S
U	10	1	SAINT MARY'S
F	13	1	SAINT MARY'S
F	14	1	SAINT MARY'S
F	19	1	SAINT MARY'S
F	2	1	SAINT MARY'S
F	31	1	SAINT MARY'S
F	56	1	SAINT MARY'S
F	7	2	SAINT MARY'S
M	10	1	SAINT MARY'S
M	46	1	SAINT MARY'S
M	5	1	SAINT MARY'S
M	59	1	SAINT MARY'S
M	6	1	SAINT MARY'S
M	8	1	SAINT MARY'S
M	9	2	SAINT MARY'S
U	21	2	SOMERSET
F	18	4	SOMERSET
F	19	4	SOMERSET
F	20	2	SOMERSET
F	21	1	SOMERSET
F	22	3	SOMERSET
F	23	1	SOMERSET
M	0	1	SOMERSET
M	18	3	SOMERSET
M	19	1	SOMERSET
M	21	1	SOMERSET
M	22	2	SOMERSET
M	27	1	SOMERSET
M	29	1	SOMERSET
M	31	1	SOMERSET
U	38	1	TALBOT
F	16	1	TALBOT
F	7	1	TALBOT
M	1	1	TALBOT
M	54	1	TALBOT
U	49	1	WASHINGTON
F	15	1	WASHINGTON
F	45	1	WASHINGTON
F	49	1	WASHINGTON
F	57	1	WASHINGTON
F	61	1	WASHINGTON
F	63	1	WASHINGTON
F	70	1	WASHINGTON
F	88	1	WASHINGTON
M	0	1	WASHINGTON
M	1	1	WASHINGTON
M	23	1	WASHINGTON
M	36	1	WASHINGTON
M	39	1	WASHINGTON
M	4	1	WASHINGTON
M	43	1	WASHINGTON
M	46	1	WASHINGTON
M	48	1	WASHINGTON
M	5	1	WASHINGTON
M	53	1	WASHINGTON
M	60	1	WASHINGTON
M	63	1	WASHINGTON
M	74	1	WASHINGTON
F	1	1	WICOMICO
F	11	1	WICOMICO
F	12	2	WICOMICO
F	17	1	WICOMICO
F	18	2	WICOMICO
F	19	1	WICOMICO
F	20	2	WICOMICO
F	21	4	WICOMICO
F	22	1	WICOMICO
F	23	1	WICOMICO
F	25	1	WICOMICO
F	28	1	WICOMICO
F	37	1	WICOMICO
F	39	1	WICOMICO
F	4	2	WICOMICO
F	40	1	WICOMICO
F	47	1	WICOMICO
F	5	2	WICOMICO
F	51	1	WICOMICO
F	53	1	WICOMICO
F	56	1	WICOMICO
F	7	1	WICOMICO
M	0	5	WICOMICO
M	1	2	WICOMICO
M	11	1	WICOMICO
M	12	1	WICOMICO
M	17	2	WICOMICO
M	18	1	WICOMICO
M	19	1	WICOMICO
M	21	3	WICOMICO
M	25	1	WICOMICO
M	3	1	WICOMICO
M	4	1	WICOMICO
M	49	1	WICOMICO
M	5	3	WICOMICO
M	6	3	WICOMICO
M	7	1	WICOMICO
M	8	2	WICOMICO
M	9	1	WICOMICO
U	9	1	WORCESTER
F	1	1	WORCESTER
F	10	1	WORCESTER
F	2	1	WORCESTER
F	62	1	WORCESTER
F	7	1	WORCESTER
M	10	1	WORCESTER
M	11	1	WORCESTER
M	12	1	WORCESTER
M	4	1	WORCESTER
M	76	1	WORCESTER
TOTAL		**754**	

VIRAL HEPATITIS

ORGANISM	# SPECIMENS	# POSITIVES	JURISDICTION
HEPATITIS A			
	1	0	CARROLL
	2	0	PRINCE GEORGE'S
	1	0	WICOMICO
SUBTOTAL	**4**	**0**	
HEPATITIS B			
	38	1	ALLEGANY
	150	4	ANNE ARUNDEL
	36	1	BALTIMORE
	301	2	BALTIMORE CITY
	4	0	CALVERT
	21	0	CARROLL
	107	0	CECIL
	57	2	FREDERICK
	8	0	GARRETT
	15	0	HARFORD
	15	1	HOWARD
	2	0	KENT
	215	9	MONTGOMERY
	294	7	PRINCE GEORGE'S
	1	0	QUEEN ANNE'S
	1	0	SAINT MARY'S
	1	0	SOMERSET
	13	0	TALBOT
	28	0	WASHINGTON
	75	0	WICOMICO
SUBTOTAL	**1,382**	**27**	
HEPATITIS C			
	40	6	ALLEGANY
	148	34	ANNE ARUNDEL
	48	4	BALTIMORE
	153	39	BALTIMORE CITY
	4	0	CALVERT
	24	1	CARROLL
	48	1	CECIL
	6	0	CHARLES
	59	3	FREDERICK
	11	0	GARRETT
	36	2	HARFORD
	5	0	HOWARD
	1	1	KENT
	27	0	MONTGOMERY
	160	4	PRINCE GEORGE'S
	2	0	QUEEN ANNE'S
	1	0	SAINT MARY'S
	1	0	SOMERSET
	13	1	TALBOT
	8	1	WASHINGTON
	10	1	WICOMICO
SUBTOTAL	**805**	**98**	
TOTALS	**2,191**	**125**	

RABIES

SOURCE	#	JURISDICTION
BAT	1	HOWARD
BEAVER	1	FREDERICK
CAT	1	HARFORD
	1	SOMERSET
	1	WORCESTER
FOX	1	FREDERICK
GROUND HOG	1	MONTGOMERY
RACCOON	4	BALTIMORE
	1	CAROLINE
	1	CARROLL
	1	CECIL
	1	CHARLES
	1	HARFORD
	2	MONTGOMERY
	1	PRINCE GEORGES
	1	QUEEN ANNES
	1	WICOMICO
	3	WORCESTER
SKUNK	1	CARROLL
TOTAL POSITIVES	**25**	
TOTAL SPECIMENS	**244**	

CHLAMYDIOPHILIA PSITTACI
(CHLAMYDIA)

REPORTED QUARTERLY
NO REPORT THIS MONTH

CD4 FLOW CYTOMETRY WORKLOAD

REPORTED QUARTERLY
NO REPORT THIS MONTH

BLOOD LEAD

MARYLAND			
	I	<10	140
	IIA	10-14	6
	IIB	15-19	2
	III	20-44	5
	IV	45-69	0
	V	>69	0
TOTAL			**153**

WASHINGTON DC			
	I	<10	0
	IIA	10-14	0
	IIB	15-19	0
	III	20-44	0
	IV	45-69	0
	V	>69	0
TOTAL			**0**

NEWBORN & CHILDHOOD SCREENING
PRESUMPTIVE POSITIVES

DISORDERS	#
PHENYLKETONURIA	3
MAPLE SYRUP URINE DISEASE	3
HOMOCYSTINURIA	10
TYROSINEMIA	4
ARGININEMIA	1
CITRULLINEMIA	0
GALACTOSEMIA	4
BIOTINIDASE DEFICIENCY	5
HYPOTHYROIDISM	85
HEMOGLOBIN -DISEASE	23
HEMOGLOBIN -BENIGN	518
CONGENITAL ADRENAL HYPERPLASIA (CAH)	48
CYSTIC FIBROSIS	4
FATTY ACID OXIDATIONS	3
ORGANIC ACIDEMIAS	15
ACYLCARNITINE - BORDERLINE	12
ACYLCARNITINE - OTHERS	0

MONTHLY TOTALS

# OF SPECIMENS SCREENED	11,307
NUMBER OF TESTS	902,613
% UNSATISFACTORY SPECIMENS	4.1

YEAR-TO-DATE CONFIRMED CASES

CONDITIONS	# CONFIRMED
MCAD	4
3MCC	2
SCAD	4
VLCAD	1
GA-I	1
IVA	1
LCHAD	1
MMA	1
ARGININOSUCCINATE LYASE DEFICIENCY (ASA)	1
PKU- CLINICALLY SIGNIFICANT VARIANT	2
TRANSIENT TYRODINEMIA	4
VARIANT HYPERPHENYLALANINEMIA (NOT CLINICALLY SIGNIFICANT)	3
CITRULINEMIA I (CIT-I)	1
CITRIN DEFICIENCY	1
GALACTOSEMIA - VARIANT	1
GALACTOSE EPIMERASE DEFICIENCY	1
HYPOTHYROIDISM - PRIMARY	27
OTHER HYPOTHYROIDISM	8
SICKLE CELL DISEASE -SS	50
SICKLE CELL DISEASE -SC	27
SICKLE CELL DISEASE - CC	8
SICKLE CELL DISEASE - VARIANT	3
FV -DISEASE	5
SICKLE CELL DISEASE - S BETA THALASSEMIA	2
CYSTIC FIBROSIS	15

ENVIRONMENTAL CHEMISTRY

SAMPLE TYPES	# NON-COMPLIANT	# TESTED
ASBESTOS		
AIR	0	0
BULK	6	18
AIR QUALITY		
PM $_{2.5}$	0	379
RADIATION		
AIR/CHARCOAL FILTERS	0	64
MILK	0	1
WIPES	0	39
RAW WATER	0	8
VEGETATION	0	0
OTHER	0	2
DRINKING WATER		
METALS		
COMMUNITY	0	0
NON-COMMUNITY	0	3
PRIVATE WELLS	8	64
PESTICIDES & PCBs		
COMMUNITY	1	96
NON-COMMUNITY	0	20
PRIVATE WELLS	0	1
VOLATILE ORGANIC COMPOUNDS		
COMMUNITY	5	232
NON-COMMUNITY	0	84
PRIVATE WELLS	0	96
RADIATION		
COMMUNITY	1	34
NON-COMMUNITY	0	0
PRIVATE WELLS	0	11
INORGANICS		
COMMUNITY	0	33
NON-COMMUNITY	1	55
PRIVATE WELLS	3	121
FOOD CHEMISTRY		
SUSPECTED TAMPERING	0	0
MICROSCOPIC FILTH	0	0
LABELING	0	0
SURVEILLANCE	0	11
CHEMICAL CONTAMINATION	0	0
TOTAL	**25**	**1,372**

VIRAL LOAD SPECIMENS

HIV-1 RNA COPIES/ML	$<10^3$	10^3—10^4	10^4—10^5	$>10^5$	**TOTALS**
ALLEGANY	14	1	1	0	**16**
CARROLL	0	0	1	0	**1**
FREDERICK	5	2	1	0	**8**
MONTGOMERY	51	8	7	4	**70**
PRINCE GEORGE'S	76	17	14	3	**110**
WICOMICO	2	0	0	0	**2**
SUBTOTALS	148	28	24	7	**207**
DEPT. OF CORRECTIONS	8	3	2	1	**14**
TOTALS	**56**	**31**	**26**	**8**	**221**

HIV ANTIBODY SCREENING

SUBMITTER	TOTAL SPECIMENS	# EIA POSITIVE	% EIA POSITIVE	# WB POSITIVE	% WB POSITIVE
CORRECTIONAL INSTITUTIONS	82	0	0.00%	0	0.00%
DHMH - DISEASE CONTROL	1	0	0.00%	0	0.00%
FAMILY PLANNING (NON-GOVT)	96	0	0.00%	0	0.00%
HEALTH CENTERS (NON-GOVT)	642	77	11.99%	71	92.21%
HLTH DEPT, NON-STD, FAM PLAN	322	4	1.24%	1	25.00%
HLTH DEPT, NON-STD, OB/GYN	50	1	2.00%	0	0.00%
HLTH DEPT, NON-STD, OTHER	526	44	8.37%	43	97.73%
HLTH DEPT, STD CLINICS	823	9	1.09%	7	77.78%
HOSPITAL, OTHER	123	6	4.88%	5	83.33%
HOSPITAL, PUBLIC	26	0	0.00%	0	0.00%
JUVENILE SERVICES	58	0	0.00%	0	0.00%
LABORATORIES (NON-HOSPITAL)	326	13	3.99%	6	46.15%
PEDIATRIC - CHILD HEALTH	2	0	0.00%	0	0.00%
PRIVATE PHYSICIANS	13	0	0.00%	0	0.00%
PRIVATE STUDENT HEALTH CENTERS	28	0	0.00%	0	0.00%
PUBLIC STUDENT HEALTH CENTERS	275	1	0.36%	1	100.00%
UNKNOWN, NOT SPECIFIED	1	0	0.00%	0	0.00%
TOTALS	**3,394**	**155**	**4.57%**	**134**	**86.45%**

MAILING LABEL

Critical Link
c/o Georgia Corso, Room L-15
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Baltimore, Maryland 21201