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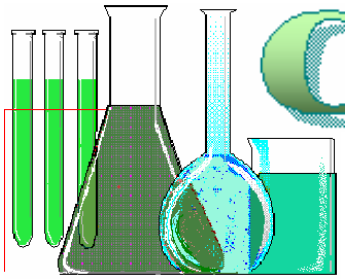

CRITICAL LINK

August 2006 Volume 10, Number 8

Babesiosis: Another Tick-Borne Infection

It's tick season in Maryland. In our State ticks can transmit Lyme disease (*Borrelia burgdorferi* from the black-legged tick, *Ixodes scapularis*), human anaplasmosis (*Anaplasma phaghocytophilum* from Ixodes ticks), human monocytotropic ehrlichiosis (*Ehrlichia chaffeensis* from the lone star tick, *Amblyomma americanum*) and Rocky Mountain spotted fever (*Rickettsia rickettsii* from the dog tick, *Dermacentor variabilis*).

However, there is another, less familiar tick-borne infection that also may be transmitted by certain ticks in Maryland. Babesiosis is a Zoonotic disease caused by intraerythrocytic sporozoan parasites of the genus *Babesia.* Human infections have been reported in the Northeast (CT, MA, ME[1], NY[2], NJ[3], and RI), Midwest, and West Coast of the U.S., in Europe, and in Japan.[4] Only about a dozen cases per year have been reported in the Northeast over the past 30 years; however, the number of unreported cases is much higher. This is because in most people the infection is mild and self-limiting.[5]

Babesia

Babesia includes around 100 species that are all transmitted by ticks of the genus *Ixodes* and infect many

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Inside this issue:

Explaining the Statistics

In each issue of the *Critical Link*, after our scientific articles, we report statistics from the Maryland Department of Health and Mental Hygiene's Laboratories Administration. We know our readership comes from various fields of expertise and may not be immediately familiar with these numbers or what they mean. Periodically, we will take a particular statistic and explain exactly what is being reported, how the tests are run, what constitutes a positive statistic, and why it is important to the health of Marylanders. By providing this explanation we hope that all readers will have a better understanding of the *Critical Link's* statistics.

This month we will begin our explanation of Maryland's monthly statistics by examining how we report susceptibility testing of *Mycobacterium tuberculosis.*

Mycobacterium tuberculosis complex Susceptibility Testing

Mycobacterium tuberculosis complex, which is responsible for causing the infectious lung disease more commonly known as TB, or tuberculosis, consists of the following individual species: *M. tuberculosis, M. bovis, M. bovis BCG, M. africanum, M. microti*, and *M. canettii.* Tuberculosis is spread through the air in droplets when a person sneezes, coughs, or breathes. It primarily attacks the respiratory system, although it can attack other organs. The symptoms of TB include fever, night sweats, weight loss, chest pain, and coughing.[1] In Maryland, tuberculosis cases have been steadily declining, from 442 cases in 1992, to 268 cases in 2003, a drop of 39.4% in 11 years.[2]

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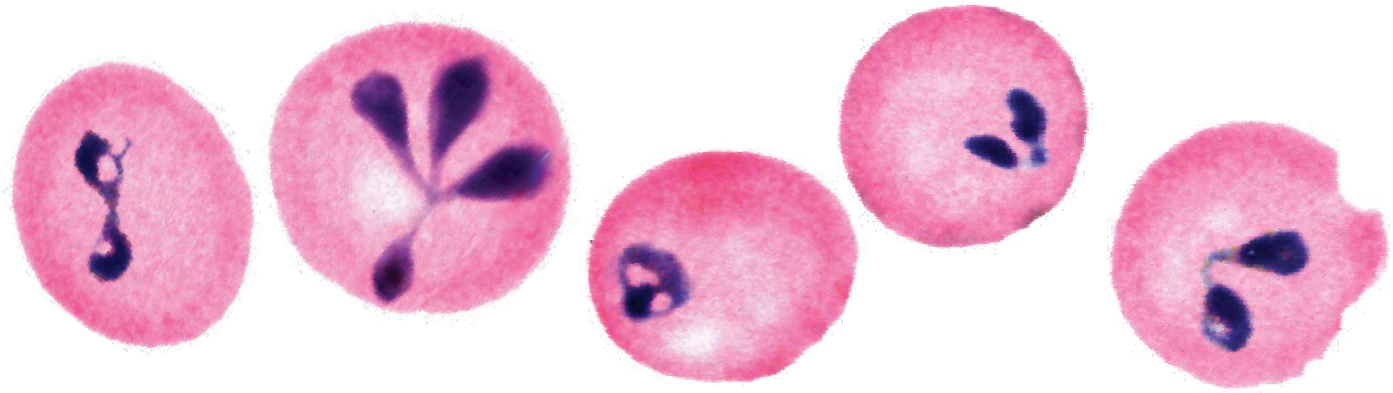

Figure 1. This is a panel of computer-generated electronic images of photomicrographs of Babesia-infected erythrocytes. The image second from the left shows a tetrad known as the Maltese cross (Adapted from Emerging Infectious Diseases. 9(8):942-948.)

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animals ranging from small mammals such as mice, shrews, and voles to dogs[6] and deer.[7] Virtually any mammal that serves as a host for *I. scapularis* ticks can be a reservoir of infection.

This protozoan parasite resembles *Plasmodium falciparum* and has a life cycle somewhat similar to that of Plasmodium, except it has no exoerythrocytic stage, its sporozoites invade erythrocytes directly after injection by the tick, and its trophozoites reproduce by binary fission rather than by schizogony.

Human Infection

The first documented human case was a fatal one reported in 1956 in an asplenic man in the former Yugoslavia.[8] In the U.S., most cases are caused by *Babesia microti* and transmitted by *Ixodes scapularis* ticks. There have also been over 40 transfusion-associated cases reported in the U.S. that involved transmission of *B. microti* from asymptomatic donors.[9]

After an incubation period of one to four weeks, clinical presentation of babesiosis ranges from asymptomatic or mild infection through a fulminant illness clinically similar to malaria with general malaise, fever without periodicity, headache, chills, sweating, and, in advanced disease, with hepatosplenomegaly and anemia. In general, infection with *B. microti* in the U.S. tends to occur in non-splenectomized individuals and be relatively mild. Splenectomy[10] or functional asplenia, immunosuppression,[11] and advanced age[12] increase susceptibility to infection and more severe disease. Overall, the mortality among clinically apparent cases of *B. microti* in the U.S. is 5%,[3] while mortality in cases of *B. divergens* in Europe is 40%.[2] Low-grade parasitemia may persist for weeks. There is also speculation that co-infection with *B. burgdorferi*, the agent of Lyme Disease, can be associated with more severe cases of babesiosis.

Diagnosis

The diagnosis of babesiosis should be considered in a patient with the appropriate clinical symptoms and a history of travel to endemic areas, exposure to ticks, or a recent blood transfusion. Examination of Giemsa-stained thin blood smears is the most direct method of diagnosis. Laboratory personnel must be experienced in differentiating *Babesia* and *Plasmodium* species. *Babesia* may mimic *P. falcipaurm* with erythrocytes multiply infected with small ring trophozoites. However, in Babesia, ring forms are quite variable in size (one to five um), and the smallest are smaller than *P. falciparum* rings.[5] In addition, in *Babesia*, extracellular trophozoites and multiply infected erythrocytes are more common. The cytoplasm of the larger Babesia trophozoites often contain a clear vacuole that is rarely seen in *P. falciparum*. Lastly, diagnostic tetrads (the Maltese cross) may be present.[5]

In many cases, parasitemia may be very low and infected patients may have negative smears. This is especially likely in chronic infections in non-splenectomized patients. In these cases, infections can be diagnosed by inoculating samples of blood into hamsters, which are very susceptible to infection, by employing serologic testing, or by performing PCR amplification. A positive serologic result for IgM is insufficient for diagnosis without having a positive result for IgG. If IgG seroconversion is not noted, the IgM result is likely a false positive.

Clinicians who wish to submit a specimen to be tested for *Babesia* should first contact the Division of Public Health Microbiology at 410-767-6125. *B. microti* serology testing is performed on serum or plasma specimens. A minimum of one ml of serum (not blood) should be submitted. Collect one ml of serum by drawing blood into a red-top tube, spinning, and pouring serum off into another tube. A paired serum specimen should also be collected and submitted two weeks later. Serological testing requires the completion of a special

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form. Call the Virology Immunology laboratory at 410-767-6162 before submitting specimens. Positive cases must be reported to the local health department.

Treatment and Prevention

Mild cases of *B. microti* infection usually resolve spontaneously. In more serious cases the standard treatment employs clindamycin combined with quinine. Exchange transfusion has also been useful in splenectomized and immunosuppressed patients.[13] Use of protective clothing and insect repellents minimize tick exposure in endemic areas. Prompt removal of ticks is also protective because ticks must feed on humans for several hours before the organisms are transmitted. Babesiosis should be considered in a differential diagnosis of patients with fever and hemolytic anemia, especially in the spring, summer, and early fall.

Material for this article compiled by Jack DeBoy, Dr.P.H.

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Explaining the Statistics

However, while cases of disease due to *Mycobacterium tuberculosis* complex are decreasing, it has developed its own new method of attack by developing resistance to the drugs used for treatment. Resistance to one or several forms of antibiotic drug treatment occurs when one or more of the *Mycobacterium tuberculosis* complex bacteria develop the ability to withstand antibiotic attack and relay that ability to their progeny. Since the strain of bacteria inherits this capacity to resist the effects of the various treatments, resistant strains can spread from one person to another.[3] Drug resistance may arise due to the improper use of antibiotics in chemotherapy (drug treatment). Drug resistance may also be the result of a number of actions, including administration of improper treatment regimens by health care workers and non-compliant patients who fail to complete the whole course of treatment.[4] Resistance may also arise when a patient does not absorb the medication properly. Malabsorption is usually the result of another underlying disease such as diabetes mellitus.

Denis Anthony Mitchison, a British bacteriologist in the Department of Medical Microbiology at St. George's Hospital Medical School in London, reported[8] in 1950 the correlation between drug susceptibility results obtained through in vitro testing and the clinical usefulness of the drug. It is important to the clinician to know as soon as possible if resistance to one of the first-line antituberculosis drugs is detected. Emergence of strains resistant to these drugs causes major concern, as it leaves only drugs that are far less effective with more toxic effects as possible options for treatment. This

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Explaining the Statistics

information may alter the combination of drugs used for treatment and may also extend the length of the patient's therapy. Currently, the short course therapy for tuberculosis is a six month treatment regimen. In patients who are slow to respond (e.g., culture positive after three months) but who do not have drug-resistant disease, therapy should be extended beyond six months.

Multidrug resistant (MDR) TB is a serious problem world-wide. This is defined as an organism that is resistant to isoniazid and rifampin, the two drugs used most effectively in combination to treat tuberculosis. Laboratories are challenged to provide reliable, rapid drug susceptibility results to ensure the proper treatment for individual cases of disease. Drug resistance surveillance is important to monitor trends of emerging significance in Maryland.

When one of these *Mycobacterium tuberculosis* complex organisms is first isolated from a patient, the laboratory tests the organism to see if it has mutated and become resistant to the antibiotics normally used to treat tuberculosis. A radiometric test determines susceptibility to the first line antituberculosis drugs: streptomycin, isoniazid (INH), rifampin, ethambutol and pyrazinamide. Developed in 1972, the radiometric detection of bacterial growth was adapted for *M. tuberculosis* by Middlebrook et al in 1977. Dr. Middlebrook reported a clinical laboratory study using a medium containing 4 µCi of palmitic 1-^{14}C acid per ml which would be a practical formulation and allow automation of the method.[5] Over the next fifteen years, the radiometric method of susceptibility testing was modified and validated in the laboratory. The Maryland State TB Laboratory participated in many studies to establish the critical concentration of INH recommended for testing,[6] and to validate the Pyrazinamide method described by Salfinger in 1988.[7] The method was implemented in 1992, which reduced the average turn around time for susceptibility results by two weeks (21 days for the conventional agar dilution method vs. eight days for the radiometric.)

The radiometric test is based on the measurement of $^{14}CO_2$ produced when *M. tuberculosis* grows in the liquid medium in the presence of an antituberculous drug as compared to growth in a drug free control vial. If resistance is detected to any drug, the test is repeated to confirm the reproducibility of the test. This method will be replaced in the near future by a non-radiometric method which employs the Mycobacterial Growth Indicator Tube (MGIT) as the liquid medium. Resistance is also confirmed by the slower conventional agar proportion method as part of the Quality Assurance program in the laboratory. The agar proportion test compares the number of colonies grown on solid medium with a specific drug to the number of colonies grown on a drug free control. If the number is greater than the one percent inoculum growing on the control, the organism is considered resistant to the drug. The agar proportion and radiometric methods define drug resistance as growth of greater than 1% of an inoculum of bacterial cells in the presence of a critical concentration of antituberculosis drug.[10] Ultimately, molecular methods will be used to detect the mutations associated with resistance to specific anti-tuberculosis drugs.

The Maryland Tuberculosis Control Program, through the local health departments, uses directly observed therapy as the standard of care (direct observation of each dose of tuberculosis medication).[6] This rigorous program is designed to prevent the emergence of new drug resistant strains of *Mycobacterium tuberculosis* and to ensure the outcome of TB treatment. The statistics listed in the *Critical Link* for *Mycobacterium tuberculosis* complex Susceptibility Testing show the total number of isolates tested by the Maryland State Laboratories Administration during the reporting month and how many of those were identified as drug resistant. The drug resistant strains are then broken down by county of residence and the specific resistant drug pattern. When multiple isolates are from the same patient, it is noted with a superscript reference.

In 2005, the Laboratories Administration identified forty-four (44) patients infected with strains resistant to at least one antimicrobial agent (44/250 = 17.6%). Six Rifampin-resistant strains were detected in 2005, and three were MDR strains of *M. tuberculosis*.

This article was written by Nancy Hooper and Georgia Corso.

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Laboratory Statistics

NS – Not Speciated
VRE – Vancomycin Resistant
NG – No Growth
NT – Non-Typeable
SP – Species

* This genus has recently been given a new genus name.
The genus name in parenthesis is the old name.
** Formerly a part of the *Trichosporon beigelii* complex.
***Alpha streptococci other than *S. pneumoniae* and *Enterococcus*

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ENTERIC BACTERIOLOGY

GENUS SEROVAR	SEX	AGE	#	JURISDICTION
CAMPYLOBACTER JEJUNI				
	F		1	ANNE ARUNDEL
	F	53	1	BALTIMORE
	M	43	1	BALTIMORE
	M		1	HARFORD
	F	20	1	BALTIMORE CITY
	F	43	1	UNKNOWN
SALMONELLA BAREILLY				
	F		1	OUT OF STATE
SALMONELLA BENIN				
	M	15	1	WICOMICO
SALMONELLA BRANDENBURG				
	F	57	1	CALVERT
SALMONELLA ENTERITIDIS				
	M		1	BALTIMORE
	M	9	1	BALTIMORE
	M	15	1	BALTIMORE
	F	7	1	CALVERT
	M	24	1	CARROLL
	F	73	1	HARFORD
	M		1	HARFORD
	M		1	HOWARD
	M	2	1	MONTGOMERY
	M	53	1	MONTGOMERY
	M	79	1	MONTGOMERY
	M	55	1	PRINCE GEORGE'S
	M	46	1	WICOMICO
	F		2	BALTIMORE CITY
	F	1	1	BALTIMORE CITY
	F	6	1	BALTIMORE CITY
	M		1	BALTIMORE CITY
	M	3	1	BALTIMORE CITY
	M	40	1	BALTIMORE CITY
	M	44	1	BALTIMORE CITY
	F	30	1	OUT OF STATE
	F	48	1	OUT OF STATE
	M	3	1	OUT OF STATE
	M	49	1	OUT OF STATE
SALMONELLA HEIDELBERG				
	F		1	ANNE ARUNDEL
SALMONELLA NEWPORT				
	F	42	1	BALTIMORE CITY
SALMONELLA SANDIEGO				
	F	16	1	HARFORD
SALMONELLA TAKORADI				
	F	37	1	BALTIMORE CITY
SALMONELLA THOMPSON				
	M	57	1	QUEEN ANNE'S
SALMONELLA 4,5,12:i:-				
	F	69	1	HARFORD
	M	1	1	BALTIMORE CITY
SHIGELLA FLEXNERI II:3,4				
	U	38	1	PRINCE GEORGE'S
SHIGELLA FLEXNERI IV:3,4				
	M	29	1	HOWARD
VIBRIO PARAHAEMOLYTICUS				
	F	13	1	PRINCE GEORGE'S
VIBRIO VULNIFICUS				
	M	19	1	HARFORD
TOTAL			**45**	

ISOLATES – THROAT CULTURES

COUNTY	GROUP A[1]	NON-GROUP A
ALLEGANY	3	15
ANNE ARUNDEL	0	2
BALTIMORE CITY	2	2
BALTIMORE	2	0
MONTGOMERY	1	0
PRINCE GEORGE'S	1	2
SOMERSET	2	2
WICOMICO	5	7
TOTAL	**16**	**30**

[1] *Streptococcus pyogenes*

BACTERIOLOGY IDENTIFICATIONS Referrals

GENUS SPECIES SOURCE	#	JURISDICTION
CORYNEBACTERIUM DURUM		
TONGUE	1	BALTIMORE
HAEMOPHILUS INFLUENZAE NON-TYPEABLE		
BLOOD	1	CECIL CITY
CSF	1	MONTGOMERY
HAEMOPHILUS INFLUENZAE SEROTYPE F		
BLOOD	1	BALTIMORE CITY
BLOOD	1	ST. MARY'S
BLOOD	1	WICOMICO
STAPHYLOCOCCUS AUREUS		
SPUTUM	1	WICOMICO
TOTAL	**7**	

ISOLATES – MISCELLANEOUS

GENUS SPECIES SOURCE	#	JURISDICTION
ACINETOBACTER CALCOACETICUS-BAUMANNII COMPLEX		
TRACHEAL	1	WASHINGTON
WOUND	2	WASHINGTON
ACTINOMYCES VISCOSUS		
BLOOD	1	BALTIMORE CITY
AEROBIC GRAM NEGATIVE RODS		
BLOOD	4	BALTIMORE CITY
BACILLUS SPECIES		
TOE	1	FREDERICK
FOOT	1	FREDERICK
CHRYSEOMONAS LUTEOLA		
SKIN	1	MONTGOMERY
CITROBACTER FREUNDII		
TRACHEAL	1	WASHINGTON
CLOSTRIDIUM SUBTERMINALE		
BLOOD	1	BALTIMORE CITY
CORYNEBACTERIUM SPECIES		
PENIS	1	MONTGOMERY
ENTEROBACTER CLOACAE		
FOOT	1	BALTIMORE CITY
FOOT	2	FREDERICK
INCISION	1	FREDERICK
TOE	1	FREDERICK
ENTEROBACTER INTERMEDIUS		
SPUTUM	1	WASHINGTON

ENTEROCOCCUS FAECALIS		
TOE	2	FREDERICK
INCISION	1	FREDERICK
SACRUM	1	WASHINGTON
STOOL (VRE-)	3	WASHINGTON
ESCHERICHIA COLI		
BLOOD	2	BALTIMORE CITY
ESCHERICHIA VULNERIS		
FOOT	1	FREDERICK
FLAVIMONAS ORYZIHABITANS		
WOUND	1	PRINCE GEORGE'S
GARDNERELLA VAGINALIS		
VAGINAL	1	CECIL
VAGINAL	5	SOMERSET
KLEBSIELLA OXYTOCA		
TOE	1	FREDERICK
KLEBSIELLA PNEUMONIAE		
HIP	1	WASHINGTON
SACRUM	1	WASHINGTON
TRACHEAL	2	WASHINGTON
MORGANELLA MORGANII		
FOOT	1	FREDERICK
PANTOEA AGGLOMERANS		
TOE	1	FREDERICK
SPUTUM	1	WASHINGTON
PROTEUS MIRABILIS		
NAIL	1	BALTIMORE
WOUND	1	CARROLL
G-TUBE	1	WASHINGTON
URINARY MEATUS	1	WASHINGTON
PROTEUS SPECIES		
VAGINAL	1	WASHINGTON
PSEUDOMONAS AERUGINOSA		
BLOOD	1	BALTIMORE CITY
TOE	3	FREDERICK
TRACHEAL	5	WASHINGTON
WOUND	2	WASHINGTON
PSEUDOMONAS SPECIES		
TOE	1	FREDERICK
SERRATIA MARCESCENS		
FOOT	1	FREDERICK
TOE	1	FREDERICK
TRACHEAL	1	WASHINGTON
STAPHYLOCOCCUS AUREUS		
WOUND	2	BALTIMORE
BLOOD	2	BALTIMORE CITY
EAR LOBE	1	BALTIMORE CITY
WOUND	1	CARROLL
SACRAL	1	CARROLL
PENIS	1	CECIL
VAGINAL	1	CECIL
HAND	1	FREDERICK
WOUND	3	FREDERICK
FOOT	2	FREDERICK
TOE	2	FREDERICK
VAGINAL	1	PRINCE GEORGE'S
WOUND	4	PRINCE GEORGE'S
VAGINAL	1	SOMERSET
FOOT	2	WASHINGTON
G-TUBE	1	WASHINGTON
SPUTUM	1	WASHINGTON
URINARY MEATUS	1	WASHINGTON
STAPHYLOCOCCUS EPIDERMIDIS		
BLOOD	2	BALTIMORE CITY
STAPHYLOCOCCUS SPECIES		
BLOOD	1	BALTIMORE CITY
CSF	1	BALTIMORE CITY
TOE	1	CECIL
TOE	7	FREDERICK
WOUND	1	FREDERICK
INCISION	1	FREDERICK
PENIS	1	MONTGOMERY
HIP	1	WASHINGTON
STREPTOCOCCUS ALPHA-HEMOLYTIC		
WOUND	1	BALTIMORE CITY
STREPTOCOCCUS BETA-HEMOLYTIC GROUP B		
VAGINAL	2	ANNE ARUNDEL
BLOOD	2	BALTIMORE CITY
PENIS	1	CECIL
VAGINAL	1	HOWARD
VAGINAL	4	MONTGOMERY
VAGINAL	1	PRINCE GEORGE'S
VAGINAL	7	SOMERSET
VAGINAL	1	WICOMICO
STREPTOCOCCUS NON-HEMOLYTIC		
BLOOD	2	BALTIMORE CITY
STREPTOCOCCUS VIRIDANS GROUP		
BLOOD	2	BALTIMORE CITY
TOTAL	**133**	

SEXUALLY TRANSMITTED DISEASES

GENUS SPECIES			
	SEX	#	JURISDICTION
NEISSERIA GONORRHEAE			
	F	2	ALLEGANY
	M	1	ALLEGANY
	F	2	ANNE ARUNDEL
	M	4	ANNE ARUNDEL
	F	3	BALTIMORE
	M	8	BALTIMORE
	M	1	CALVERT
	F	0	CAROLINE
	M	2	CAROLINE
	F	1	CECIL
	F	1	CHARLES
	F	1	HARFORD
	M	1	HOWARD
	M	1	KENT
	F	2	MONTGOMERY
	M	3	MONTGOMERY
	F	11	PRINCE GEORGE'S
	M	36	PRINCE GEORGE'S
	F	1	ST. MARY'S
	M	1	ST. MARY'S
	F	5	SOMERSET
	M	1	SOMERSET
	F	4	WASHINGTON CO
	M	2	WASHINGTON CO
	F	6	WICOMICO
	M	7	WICOMICO
	F	2	BALTIMORE CITY
	M	9	BALTIMORE CITY
	U	2	BALTIMORE CITY
	M	1	OUT OF STATE
TOTAL	**121**		
SYPHILIS SEROLOGY			
	F	1	ALLEGANY
	M	2	ALLEGANY
	F	14	ANNE ARUNDEL
	M	2	ANNE ARUNDEL
	F	26	BALTIMORE
	M	15	BALTIMORE
	U	1	BALTIMORE
	F	1	CARROLL
	M	2	CARROLL
	F	1	CECIL
	F	1	DORCHESTER
	F	4	FREDERICK
	M	1	FREDERICK
	F	5	HARFORD
	M	1	HARFORD
	F	2	HOWARD

	M	1	HOWARD
	M	1	KENT
	F	6	MONTGOMERY
	M	8	MONTGOMERY
	F	18	PRINCE GEORGE'S
	M	29	PRINCE GEORGE'S
	U	1	PRINCE GEORGE'S
	F	1	QUEEN ANNE'S
	F	1	ST. MARY'S
	F	1	SOMERSET
	F	3	TALBOT
	M	1	TALBOT
	F	1	WASHINGTON
	M	2	WASHINGTON
	F	6	WICOMICO
	M	4	WICOMICO
	F	33	BALTIMORE CITY
	M	40	BALTIMORE CITY
	F	4	OUT OF STATE
	M	2	OUT OF STATE
TOTAL		**242**	

CHLAMYDIA TRACHOMATIS

	F	7	ALLEGANY
	M	4	ALLEGANY
	F	20	ANNE ARUNDEL
	M	15	ANNE ARUNDEL
	U	1	ANNE ARUNDEL
	F	17	BALTIMORE
	M	17	BALTIMORE
	F	4	CALVERT
	M	3	CALVERT
	F	4	CAROLINE
	M	1	CAROLINE
	F	4	CARROLL
	M	1	CARROLL
	F	7	CECIL
	M	3	CECIL
	F	6	CHARLES
	M	2	CHARLES
	F	1	DORCHESTER
	M	2	DORCHESTER
	F	9	FREDERICK
	M	4	FREDERICK
	F	8	HARFORD
	M	11	HARFORD
	F	8	HOWARD
	M	1	HOWARD
	F	3	KENT
	M	3	KENT
	F	23	MONTGOMERY
	M	23	MONTGOMERY
	U	4	MONTGOMERY
	F	74	PRINCE GEORGE'S
	M	17	PRINCE GEORGE'S
	U	1	PRINCE GEORGE'S
	F	7	ST. MARY'S
	M	2	ST. MARY'S
	F	11	SOMERSET
	M	2	SOMERSET
	U	1	SOMERSET
	F	3	TALBOT
	F	6	WASHINGTON
	M	4	WASHINGTON
	F	19	WICOMICO
	M	10	WICOMICO
	F	3	WORCESTER
	F	10	BALTIMORE CITY
	M	22	BALTIMORE CITY
	F	4	OUT OF STATE
	M	2	OUT OF STATE
	U	1	UNKNOWN
TOTAL		**415**	

MYCOLOGY

GENUS SPECIES	SEX	AGE	#	JURISDICTION
MYCOBACTERIUM TUBERCULOSIS				
	M	77	1	ANNE ARUNDEL
	M	49	1	HOWARD
	M	30	1	MONTGOMERY
	F	50	1	BALTIMORE CITY
MYCOBACTERIUM TUBERCULOSIS COMPLEX				
	F	38	1	ANNE ARUNDEL
	F	26	1	BALTIMORE
	F	31	1	BALTIMORE
	M		1	BALTIMORE
	M	49	1	HOWARD
	F	71	1	KENT
	F	22	1	MONTGOMERY
	F	24	1	MONTGOMERY
	F	25	1	MONTGOMERY
	F	35	1	MONTGOMERY
	F	39	1	MONTGOMERY
	M	22	1	MONTGOMERY
	M	25	1	MONTGOMERY
	M	32	1	MONTGOMERY
	M	68	1	MONTGOMERY
	F	26	1	PRINCE GEORGE'S
	F	27	1	PRINCE GEORGE'S
	F	31	1	PRINCE GEORGE'S
	F	79	1	PRINCE GEORGE'S
	M	31	1	PRINCE GEORGE'S
	M	32	1	PRINCE GEORGE'S
	M	39	1	PRINCE GEORGE'S
	M	42	1	PRINCE GEORGE'S
	M	46	1	PRINCE GEORGE'S
	M	57	1	PRINCE GEORGE'S
	M	40	1	SOMERSET
	F	26	1	BALTIMORE CITY
	F	33	1	BALTIMORE CITY
	M	25	1	BALTIMORE CITY
	M	26	1	BALTIMORE CITY
	M	46	1	BALTIMORE CITY
	M	62	1	BALTIMORE CITY
	M	79	1	BALTIMORE CITY
	F	26	1	OUT OF STATE
	F	51	1	OUT OF STATE
	M	28	1	OUT OF STATE
	M	31	1	OUT OF STATE
	M	54	1	OUT OF STATE
MYCOBACTERIUM AVIUM COMPLEX				
	M		3	ALLEGANY
	U		1	ALLEGANY
	F	42	1	ANNE ARUNDEL
	M		1	ANNE ARUNDEL
	M	89	1	ANNE ARUNDEL
	M	93	1	ANNE ARUNDEL
	F	46	1	BALTIMORE
	M	46	1	BALTIMORE
	M	83	1	BALTIMORE
	F	63	1	CARROLL
	F	67	1	CARROLL
	M	82	1	CARROLL
	F	15	1	CECIL
	F	24	1	FREDERICK
	M	19	1	HOWARD
	F	25	1	MONTGOMERY
	M	77	1	MONTGOMERY
	F	34	1	PRINCE GEORGE'S
	F	63	1	PRINCE GEORGE'S
	M	70	1	PRINCE GEORGE'S
	M	74	1	ST. MARY'S
	M	40	1	SOMERSET
	F	80	1	WASHINGTON

F	59	1	WICOMICO
F	78	1	WORCESTER
F	31	1	BALTIMORE CITY
F	34	1	BALTIMORE CITY
F	38	1	BALTIMORE CITY
F	45	1	BALTIMORE CITY
F	51	1	BALTIMORE CITY
M		1	BALTIMORE CITY
M	41	1	BALTIMORE CITY
M	48	1	BALTIMORE CITY
M	49	1	BALTIMORE CITY
M	58	1	BALTIMORE CITY
M	70	1	BALTIMORE CITY
F	39	1	OUT OF STATE
F	72	1	OUT OF STATE
MYCOBACTERIUM FORTUITUM COMPLEX			
F	83	1	MONTGOMERY
M	46	1	PRINCE GEORGE'S
F	33	1	BALTIMORE CITY
F	55	1	BALTIMORE CITY
M	59	1	OUT OF STATE
MYCOBACTERIUM GORDONAE			
M	76	1	ANNE ARUNDEL
M	78	1	MONTGOMERY
M	88	1	OUT OF STATE
MYCOBACTERIUM KANSASII			
M	44	1	BALTIMORE CITY
M	45	1	BALTIMORE CITY

TOTAL **92**

MYCOBACTERIUM SUSCEPTIBILITY RESULTS

DURING THE MONTH OF MAY, 2006,
SUSCEPTIBILITY RESULTS ON 35 ISOLATES OF
M. TUBERCULOSIS COMPLEX * WERE IDENTIFIED.

A TOTAL OF 12 DRUG RESISTANT STRAINS WERE FOUND:

#	COUNTY	DRUG
1	KENT	® to STREPTOMYCIN
1	MONTGOMERY	® to STREPTOMYCIN
2[A]	MONTGOMERY	® to ISONIAZID and PYRAZINAMIDE
1[B]	MONTGOMERY	® to STREPTOMYCIN, ISONIAZID, RIFAMPIN, RIFABUTIN, ETHIONAMIDE, and KANAMYCIN
3[A]	PRINCE GEORGE'S	® to STREPTOMYCIN
2[A]	PRINCE GEORGE'S	® to STREPTOMYCIN and ISONIAZID
1	BALTIMORE CITY	® to STREPTOMYCIN and ISONIAZID
1	BALTIMORE CITY	® to ISONIAZID

[A] Two isolates from the same patient.

**Mycobacterium tuberculosis* complex consists of:

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

® RESISTANT

MYCOBACTERIOLOGY

GENUS SPECIES	SEX	AGE	#	JURISDICTION
ASPERGILLUS NIDULANS				
	M	73	1	CECIL
ACID FAST BACILLI				
	F	51	1	OUT OF STATE
ACREMONIUM SP				
	F	42	1	TALBOT
ALTERNARIA SP				
	M	51	1	ALLEGANY
	M	68	1	ANNE ARUNDEL
	U		1	WASHINGTON
ASPERGILLUS FLAVUS				
	M	69	1	ALLEGANY
	F	81	1	PRINCE GEORGE'S
	F	74	1	TALBOT
ASPERGILLUS FUMIGATUS				
	F	91	1	ALLEGANY
	F		1	ANNE ARUNDEL
	M	93	1	ANNE ARUNDEL
	U		1	ANNE ARUNDEL
	M	71	1	CECIL
	M	81	1	CECIL
	F	77	1	MONTGOMERY
	M	2	1	MONTGOMERY
	M	28	1	MONTGOMERY
	M	81	1	MONTGOMERY
	F	58	1	PRINCE GEORGE'S
	M	63	1	TALBOT
	M	83	1	TALBOT
	F	39	1	OUT OF STATE
ASPERGILLUS NIGER				
	F	53	1	PRINCE GEORGE'S
	M	58	1	PRINCE GEORGE'S
	M	60	1	PRINCE GEORGE'S
	F	61	1	TALBOT
ASPERGILLUS TERREUS				
	M	24	1	DORCHESTER
ASPERGILLUS USTUS				
	M	71	1	CECIL
AUREOBASIDIUM SP				
	U		1	WASHINGTON
CANDIDA ALBICANS				
	F	27	1	ANNE ARUNDEL
	F	66	1	ANNE ARUNDEL
	M	30	1	ANNE ARUNDEL
	M	45	1	ANNE ARUNDEL
	F	21	1	BALTIMORE
	F	44	1	BALTIMORE
	M	43	1	CALVERT
	F	26	1	CECIL
	M	70	1	CECIL
	M	59	1	CHARLES
	M	81	1	GARRETT
	F	19	1	HOWARD
	F	24	1	HOWARD
	F	26	1	HOWARD
	F	31	1	HOWARD
	F	21	1	MONTGOMERY
	F	23	1	MONTGOMERY
	F	27	1	MONTGOMERY
	F	29	1	MONTGOMERY
	F	32	1	MONTGOMERY
	F	33	2	MONTGOMERY
	F	46	3	MONTGOMERY
	F	68	1	MONTGOMERY
	F	77	1	MONTGOMERY
	F	89	1	MONTGOMERY
	M	28	1	MONTGOMERY
	M	37	1	MONTGOMERY

M	40	2	MONTGOMERY
M	72	1	MONTGOMERY
F	18	1	PRINCE GEORGE'S
F	19	1	PRINCE GEORGE'S
F	24	1	PRINCE GEORGE'S
F	29	1	PRINCE GEORGE'S
F	39	1	PRINCE GEORGE'S
F	51	1	PRINCE GEORGE'S
F	54	1	PRINCE GEORGE'S
F	59	1	PRINCE GEORGE'S
M	64	1	PRINCE GEORGE'S
M	68	1	PRINCE GEORGE'S
M	72	1	PRINCE GEORGE'S
M	81	1	PRINCE GEORGE'S
F	18	3	SOMERSET
F	19	4	SOMERSET
F	20	1	SOMERSET
F	21	1	SOMERSET
F	44	1	BALTIMORE CITY
F	46	1	BALTIMORE CITY
F	65	1	BALTIMORE CITY
F	79	1	BALTIMORE CITY
M	34	1	BALTIMORE CITY
M	56	1	BALTIMORE CITY
F	39	1	OUT OF STATE
CANDIDA GLABRATA			
F	86	1	CECIL
M	73	1	MONTGOMERY
F	18	1	PRINCE GEORGE'S
F	28	1	PRINCE GEORGE'S
F	59	1	PRINCE GEORGE'S
F	81	1	PRINCE GEORGE'S
M	85	1	BALTIMORE CITY
CANDIDA KRUSEI			
F	27	1	ANNE ARUNDEL
F	59	1	PRINCE GEORGE'S
M	81	1	PRINCE GEORGE'S
CANDIDA PARAPSILOSIS			
F	43	1	BALTIMORE
M	84	1	BALTIMORE
F	50	1	FREDERICK
F	62	1	FREDERICK
F	78	1	PRINCE GEORGE'S
CANDIDA TROPICALIS			
M		1	BALTIMORE
F	28	1	MONTGOMERY
F	71	1	MONTGOMERY
M	73	1	MONTGOMERY
F	59	1	PRINCE GEORGE'S
M	60	1	PRINCE GEORGE'S
F	71	1	BALTIMORE CITY
CLADOSPORIUM SP			
U		1	WASHINGTON
CRYPTOCOCCUS NEOFORMANS			
F	79	1	BALTIMORE CITY
CRYPTOCOCCUS SP (NOT NEOFORMANS)			
F	53	1	BALTIMORE CITY
FUSARIUM SP			
F	62	1	BALTIMORE
F	62	1	TALBOT
GEOTRICHUM CAPITATUM			
M	40	1	MONTGOMERY
NOCARDIA ASTEROIDES COMPLEX			
M	82	1	CAROLINE
F	71	1	MONTGOMERY
NOCARDIA NOVA			
F	72	1	FREDERICK
M	63	1	TALBOT
NOCARDIA SP			
M	53	1	BALTIMORE CITY
PENICILLIUM SP			
F		1	ALLEGANY
F	54	1	ALLEGANY
F	57	1	BALTIMORE
M	43	1	CALVERT
F	67	1	CARROLL
F	48	1	HARFORD
F	68	1	MONTGOMERY
F	78	1	PRINCE GEORGE'S
U		1	WASHINGTON
M	1	1	BALTIMORE CITY
M	77	1	BALTIMORE CITY
PHIALOPHORA SP			
F	36	1	TALBOT
RHODOTORULA PILMANAE			
F	56	1	WICOMICO
SACCHAROMYCES CEREVISIAE			
M	78	1	MONTGOMERY
SCOPULARIOPSIS SP			
F	85	1	TALBOT
STREPTOMYCES ANULATUS			
M	68	1	ALLEGANY
TRICHOPHYTON RUBRUM			
F	46	1	ALLEGANY
F	47	1	TALBOT
F	74	1	TALBOT
M	75	1	TALBOT
F	1	1	BALTIMORE CITY
F	31	1	OUT OF STATE
TRICHOPHYTON SP			
M	69	1	CARROLL
TRICHOPHYTON TONSURANS			
M	6	1	ALLEGANY
F	5	1	BALTIMORE
F	6	1	TALBOT
M	3	1	BALTIMORE CITY
TRICHOSPORON INKIN			
F	20	1	SOMERSET
TSUKAMURELLA TYROSINOSOLVENS			
F	5	1	QUEEN ANNE'S
TOTAL		**153**	

PARASITOLOGY

GENUS SPECIES	#	JURISDICTION
PROTOZOA		
BLASTOCYSTIS HOMINIS	1	BALTIMORE CITY
	3	MONTGOMERY
	3	PRINCE GEORGE'S
ENDOLIMAX NANA	2	HOWARD
	4	MONTGOMERY
	2	PRINCE GEORGE'S
ENTAMOEBA COLI	1	ANNE ARUNDEL
	3	MONTGOMERY
	4	PRINCE GEORGE'S
GIARDIA LAMBLIA	2	HOWARD
	1	PRINCE GEORGE'S
	1	WICOMICO
TOTAL	**27**	
NEMATODES		
NO SPECIMENS SUBMITTED		
SPOROZOA		
PLASMODIUM FALCIPARUM		
BLOOD	1	ANNE ARUNDEL
BLOOD	2	BALTIMORE CITY
TOTAL	**3**	

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 applies 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.

TICK IDENTIFICATION

NONE

ARTHROPOD IDENTIFICATION

NONE

WATER MICROBIOLOGY

	# TESTED	# NON-COMPLIANT
COMMUNITY	0	0
NON-COMMUNITY	225	53
TOTAL	**225**	**53**

VIRUS ISOLATION

ISOLATE	SEX	AGE	#	JURISDICTION
INFLUENZA A				
	M	46	1	QUEEN ANNE'S
	F	82	1	SOMERSET
	M		1	BALTIMORE CITY
SUBTOTAL			**3**	
ADENOVIRUS				
	M	19	2	PRINCE GEORGE'S
	M	20	1	PRINCE GEORGE'S
	F		1	BALTIMORE CITY
SUBTOTAL			**4**	
HERPES SIMPLEX UNTYPABLE				
	M	20	1	BALTIMORE
	F	34	1	CHARLES
	F	2	1	PRINCE GEORGE'S
	U		1	PRINCE GEORGE'S
	M	15	1	TALBOT
	F	27	1	BALTIMORE CITY
SUBTOTAL			**6**	
VARICELLA				
	F	21	1	BALTIMORE CITY
SUBTOTAL			**1**	
HERPES SIMPLEX I				
	F	18	1	ALLEGANY
	F	20	1	ANNE ARUNDEL
	F	51	1	ANNE ARUNDEL
	F	19	1	BALTIMORE
	F	23	1	BALTIMORE
	M	19	1	CALVERT
	F	33	1	CECIL
	F	20	1	FREDERICK
	F	19	1	PRINCE GEORGE'S
	F	20	1	PRINCE GEORGE'S
	F	26	1	PRINCE GEORGE'S
	F	20	1	QUEEN ANNE'S
	F		1	BALTIMORE CITY
	F	20	1	BALTIMORE CITY
	F	21	1	BALTIMORE CITY
	M	19	2	BALTIMORE CITY
	U	17	1	BALTIMORE CITY
SUBTOTAL			**18**	
HERPES SIMPLEX II				
	M	20	1	ALLEGANY
	F	27	1	ANNE ARUNDEL
	F	33	1	ANNE ARUNDEL
	F	21	1	BALTIMORE
	F	22	1	BALTIMORE
	F	23	1	BALTIMORE
	F	28	1	BALTIMORE
	M	25	1	BALTIMORE
	M	29	1	BALTIMORE
	F	41	1	CALVERT
	M	20	1	CHARLES
	M	40	1	FREDERICK
	F	18	1	HARFORD
	M	24	1	HARFORD
	M	39	1	KENT
	M	24	1	MONTGOMERY
	M	30	1	MONTGOMERY
	M	35	1	MONTGOMERY
	F	20	2	PRINCE GEORGE'S
	F	23	1	PRINCE GEORGE'S
	F	24	1	PRINCE GEORGE'S
	F	25	1	PRINCE GEORGE'S
	F	26	1	PRINCE GEORGE'S
	F	31	1	PRINCE GEORGE'S
	F	33	1	PRINCE GEORGE'S
	F	34	1	PRINCE GEORGE'S
	F	37	1	PRINCE GEORGE'S
	F	46	1	PRINCE GEORGE'S
	M	21	1	PRINCE GEORGE'S
	M	22	1	PRINCE GEORGE'S
	M	23	1	PRINCE GEORGE'S
	M	24	1	PRINCE GEORGE'S
	F	24	1	ST. MARY'S
	M	20	1	ST. MARY'S
	F	20	1	SOMERSET
	M	21	1	SOMERSET
	F	26	1	WASHINGTON

F	20	1	WICOMICO
F	22	1	WICOMICO
F	23	1	WICOMICO
F	27	1	WICOMICO
F	29	1	WICOMICO
M	21	1	WICOMICO
F	18	1	BALTIMORE CITY
F	19	2	BALTIMORE CITY
F	21	2	BALTIMORE CITY
F	23	1	BALTIMORE CITY
F	25	1	BALTIMORE CITY
F	27	1	BALTIMORE CITY
F	28	3	BALTIMORE CITY
F	38	1	BALTIMORE CITY
F	40	1	BALTIMORE CITY
F	57	1	BALTIMORE CITY
M		1	BALTIMORE CITY
M	19	1	BALTIMORE CITY
M	20	2	BALTIMORE CITY
M	23	3	BALTIMORE CITY
M	24	1	BALTIMORE CITY
M	25	1	BALTIMORE CITY
M	26	2	BALTIMORE CITY
M	28	1	BALTIMORE CITY
M	31	1	BALTIMORE CITY
M	37	1	BALTIMORE CITY

This is a close-up of a *Mycobacterium tuberculosis* culture revealing this organism's colonial morphology.

M	40	1	BALTIMORE CITY
M	55	1	BALTIMORE CITY
M	67	1	BALTIMORE CITY
U		1	BALTIMORE CITY
U	20	1	BALTIMORE CITY
F	49	1	UNKNOWN
SUBTOTAL		**78**	
ROTAVIRUS			
F	28	1	BALTIMORE CITY
SUBTOTAL		**1**	
TOTAL		**111**	

VIRAL HEPATITIS

ORGANISM # OF SPECIMENS	POSITIVES	JURISDICTION
HEPATITIS A		
4	0	ANNE ARUNDEL
6	0	BALTIMORE
1	0	CARROLL
1	0	CHARLES
1	0	HOWARD
5	0	PRINCE GEORGE'S
1	0	SOMERSET
17	0	BALTIMORE CITY
SUBTOTAL 36	**0**	
HEPATITIS B		
19	0	ALLEGANY
136	4	ANNE ARUNDEL
102	3	BALTIMORE
8	0	CALVERT
10	0	CAROLINE
34	0	CARROLL
140	3	CECIL
15	0	CHARLES
2	0	DORCHESTER
89	1	FREDERICK
15	0	GARRETT
67	1	HARFORD
57	0	HOWARD
1	0	KENT
202	11	MONTGOMERY
452	11	PRINCE GEORGE'S
5	0	QUEEN ANNE'S
3	0	ST. MARY'S
18	1	SOMERSET
3	0	TALBOT
29	0	WASHINGTON
118	0	WICOMICO
5	0	WORCESTER
397	14	BALTIMORE CITY
43	0	OUT OF STATE
1	0	UNKNOWN
SUBTOTAL 1,971	**49**	
HEPATITIS C		
18	2	ALLEGANY
215	46	ANNE ARUNDEL
86	13	BALTIMORE
9	1	CALVERT
9	0	CAROLINE
30	7	CARROLL
37	4	CECIL
5	0	CHARLES
3	1	DORCHESTER

	84	4	FREDERICK
	16	1	GARRETT
	22	4	HARFORD
	24	3	HOWARD
	1	0	KENT
	60	6	MONTGOMERY
	213	5	PRINCE GEORGE'S
	5	0	QUEEN ANNE'S
	10	0	ST. MARY'S
	36	14	SOMERSET
	2	0	TALBOT
	35	16	WASHINGTON
	19	4	WICOMICO
	4	2	WORCESTER
	444	111	BALTIMORE CITY
	23	1	OUT OF STATE
	2	2	UNKNOWN
SUBTOTAL	**1,412**	**247**	
TOTAL	**3,419**	**296**	

RABIES

SOURCE	#	JURISDICTION
BAT	2	BALTIMORE
	1	HARFORD
	1	PRINCE GEORGE'S
CAT	2	ST. MARY'S
	1	WORCESTER
COW	1	CAROLINE
FOX	1	CARROLL
	1	DORCHESTER
	2	MONTGOMERY
	1	WASHINGTON
GROUNDHOG	1	FREDERICK
	1	PRINCE GEORGE'S
	1	WORCESTER
HORSE	1	QUEEN ANNE'S
	1	ST. MARY'S
RACCOON	3	ALLEGANY
	1	CECIL
	1	DORCHESTER
	2	FREDERICK
	2	GARRETT
	2	HOWARD
	1	KENT
	1	MONTGOMERY
	2	SOMERSET
	1	WASHINGTON
	1	WORCESTER
	2	BALTIMORE CITY
	1	UNKNOWN
TOTAL POSITIVES	**38**	
TOTAL SPECIMENS	**373**	

CHLAMYDOPHILIA (CHLAMYDIA) PSITTACI

NO SPECIMENS RECEIVED

CD4 FLOW CYTOMETRY WORKLOAD

REPORTED QUARTERLY - NO REPORT THIS MONTH

NEWBORN & CHILDHOOD SCREENING

STATISTICS FOR MAY 2006

PRESUMPTIVE POSITIVES

DISORDERS	#
PHENYLKETONURIA	3
MAPLE SYRUP URINE DISEASE	7
HOMOCYSTINURIA	8
TYROSINEMIA	6
ARGININEMIA	1
CITRULLINEMIA	1
GALACTOSEMIA	3
BIOTINIDASE DEFICIENCY	1
HYPOTHYROIDISM	79
HEMOGLOBIN -DISEASE	11
HEMOGLOBIN -BENIGN	257
CONGENITAL ADRENAL HYPERPLASIA (CAH)	35
CYSTIC FIBROSIS	0
FATTY ACID OXIDATIONS	18
ORGANIC ACIDEMIAS	16
ACYLCARNITINE - BORDERLINE	5
ACYLCARNITINE - OTHERS	26

MONTHLY TOTALS

# OF SPECIMENS SCREENED	11,419
NUMBER OF TESTS	63,840
% OF UNSATISFACTORY SPECIMENS	5.8

YEAR-TO-DATE CONFIRMED CASES

CONDITIONS	# CON-FIRMED
MCAD	2
3MCC	1
SCAD	2
MAPLE SYRUP URINE DISEASE	1
PKU- CLINICALLY SIGNIFICANT VARIANT	1
GALACTOSEMIA- CLASSICAL GALT DEFICIENCY	1
GALACTOSEMIA - VARIANT	1
CAH- CLASSICAL SALT WASTING	1
HYPOTHYROIDISM - PRIMARY	7
SICKLE CELL DISEASE -SS	3
SICKLE CELL DISEASE -SC	4
SICKLE CELL DISEASE -S BETA THALASSEMIA	1

VIRAL LOAD SPECIMENS (MAY 2006)

HIV–1 RNA COPIES/ML	<10^3	10^3 – 10^4	10^4 – 10^5	>10^5	TOTALS
ALLEGANY	6	2	0	1	9
FREDERICK	3	1	3	0	7
MONTGOMERY	83	18	23	8	132
PRINCE GEORGE'S	61	10	9	8	88
WASHINGTON	2	0	0	2	4
WICOMICO	4	2	3	1	10
SUBTOTAL	**159**	**33**	**38**	**20**	**250**
DEPARTMENT OF CORRECTIONS	131	35	48	18	232
GRAND TOTAL	**290**	**68**	**86**	**38**	**482**

ENVIRONMENTAL CHEMISTRY

SAMPLES	# NON-COMPLIANT	# TESTED
ASBESTOS		
AIR	0	0
BULK	2	14
AIR QUALITY		
$PM_{2.5}$	0	369
PM_{10}	0	0
RADIATION		
AIR/CHARCOAL FILTERS	0	80
MILK	0	4
WIPES	0	39
RAW WATER	0	11
VEGETATION	0	0
OTHER	0	0
DRINKING WATER		
METALS		
COMMUNITY	1	3
NON-COMMUNITY	5	10
PRIVATE WELLS	41	227
PESTICIDES & PCBs		
COMMUNITY	0	106
NON-COMMUNITY	0	32
PRIVATE WELLS	0	16
VOLATILE ORGANIC COMPOUNDS		
COMMUNITY	1	263
NON-COMMUNITY	0	44
PRIVATE WELLS	0	196
RADIATION		
COMMUNITY	23	93
NON-COMMUNITY	0	0
PRIVATE WELLS	0	0
INORGANICS		
COMMUNITY	0	13
NON-COMMUNITY	3	58
PRIVATE WELLS	3	264
FOOD CHEMISTRY		
SUSPECTED TAMPERING	0	0
MICROSCOPIC FILTH	0	1
LABELING	0	0
SURVEILLANCE	0	3
CHEMICAL CONTAMINATION	0	4
TOTAL	**79**	**1,850**

LEAD ENVIRONMENTAL

TEST	#	ELEV	BRL	UNSAT
TOTAL PAINT	9	5	0	0
TOTAL SOIL	3	2	0	0
DUST				
FLOOR	406	26	355	1
SILL	753	26	616	2
WELL	267	22	143	0
OTHER	24	4	16	0
TOTAL DUST	1,450	78	1,130	3
GRAND TOTAL	**1,462**	**85**	**1,130**	**3**

INTERPRETATION OF RESULTS:
# = Number of Samples Received
ELEV= Elevated
BRL= Below Reporting Limit
UNSAT = Unsatisfactory
PAINT Positive in excess of 0.5%
SOIL Action level 400 - 5,000 ppm
DUST Clearance limits: Floor/Other 40 ug/sq ft
Window Sill 250 ug/sq ft
Window Well 400 ug/sq ft

LEAD SCREENING - BLOOD LEAD

CLASS		RANGE ug/dl	TESTS # of
MARYLAND			
	I	<10	213
	IIA	10-14	22
	IIB	15-19	13
	III	20-44	11
	IV	45-69	0
	V	>69	0
TOTAL			**259**
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**

HIV ANTIBODY SCREENING – BLOOD (MAY 2006)

SPECIMEN SOURCES	TOTAL	POSITIVE EIA	%	POSITIVE WB	%
HEALTH DEPARTMENTS AND CLINICS	2,716	118	4.34%	111	94.07%
HOSPITALS	110	7	6.36%	7	100.00%
DETENTION CENTERS	743	18	2.42%	15	83.33%
PRIVATE PHYSICIANS	82	2	2.44%	2	100.00%
STUDENT HEALTH CLINICS	309	0	0.00%	0	0.00%
EMPLOYEE HEALTH CLINICS	10	0	0.00%	0	0.00%
AUTOPSIES	342	30	8.77%	13	43.33%
ORGAN/TISSUE DONORS	69	2	2.90%	1	50.00%
TOTAL	**4,381**	**177**	**4.04%**	**149**	**84.18%**

MAILING LABEL

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