CRITICAL LINK

John M. Colmers
Secretary

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The Laboratories Administration—Maryland's State Public Health Laboratory

Rapid Influenza Testing

What Local Health Department, Community Hospital, and Private Practice Health Care Staff Need to Know

Clinical staff and laboratorians who have not downloaded the Centers for Disease Control and Prevention's (CDC) guidelines on testing and management of patients with influenza-like illness may not be aware that a negative result from a rapid influenza diagnostic test (RIDT) does not exclude influenza virus infection,[1] and that a diagnosis of influenza should be based on a patient's clinical presentation when influenza is circulating in the community.[2]

While some new tests are in development, when asked about rapid testing, clinical staff should know current RIDT's on the market cannot distinguish between a novel (swine) influenza A virus and a seasonal influenza virus.[3] It is also important to know that treatment with either oseltamivir or zanamivir is recommended for all hospitalized patients with confirmed, probable, or suspected novel H1N1 influenza, and for non-hospitalized patients who are at higher risk for seasonal influenza complications.[2]

(Continued on page 2)

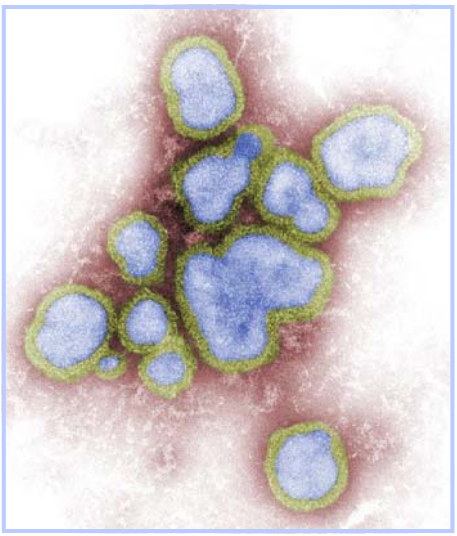

Photo 1. This digitally-colorized negative-stained transmission electron micrograph (TEM) depicts influenza A virions. There are three types of influenza viruses: A, B, and C. Human influenza A and B viruses cause seasonal epidemics almost every year. Influenza type C infections cause a mild respiratory illness and are not thought to cause epidemics. Source: CDC Image Library at http://phil.cdc.gov/phil/home.asp

Coronavirus Update

In 2003, a then-novel severe acute respiratory syndrome coronavirus (SARS-CoV) caused an international epidemic with over 8,000 infections and 800 deaths.[1] Since then, researchers have spent nearly seven years expanding our knowledge on the taxonomy, epidemiology, and clinical significance of this group of viruses.

Taxonomy

Coronaviruses (CoVs) are enveloped, pleomorphic, positive-strand RNA viruses that replicate in the cytoplasm and bud off the cytoplasmic membrane of infected cells. Before 2003, only two CoVs were known to infect humans, HCoV-OC43 and HCoV-229E. Three more have since been discovered,

(Continued on page 3)

Inside:

TB Sputum Specimen Collection Guidelines…..See Page 4

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Table 1. Tips for Health Care Workers Using Rapid Influenza Diagnostic Tests (RIDTs)[a]

1. The overall sensitivity of RIDTs to detect novel H1N1 influenza A was found to be: 69% for QuickVue A+B 49% for Directigen EZ Flu A+B 40% for BinaxNOW Influenza A&B
2. RIDT sensitivities decline substantially in respiratory specimens containing low virus titers such as those collected from patients more than four days after onset of symptoms
3. RIDTs may show higher sensitivity with young symptomatic children due to high titers of virus

[a] Source: CDC. MMWR. August 6, 2009, 58(30):826-829.

(Continued from page 1)

Rapid Influenza Testing

Uninformed use of RIDTs in hospitals could actually prove dangerous for patients, if a health care worker believes a nonreactive RIDT result represents a true negative and takes patients out of isolation, or off therapy where therapy is indicated. Likewise a negative RIDT result should not serve to send a symptomatic child back to school.

Diagnostic PCR for Influenza from our State Public Health Laboratory[4] is now limited to hospitalized patients and community outbreaks. In addition, reference laboratories charge hundreds of dollars for PCR or viral culture. So what is a health care worker in a community hospital emergency room or private practice to do? Although RIDTs are unlikely to influence patient management decisions, the public health issues and testing demands of frightened patients will keep RIDTs in active use for the foreseeable future.

Where RIDTs are used, the user must be familiar with the RIDT tips in Table 1 and CDC interpretation guidelines in Table 2.

Some hospital and private practice clinicians worry that if they do not use RIDTs and there is a new influenza outbreak or rapid upsurge, they might never know there is a problem because their immune-competent patients would not meet the clinical criteria for PCR testing by the State Laboratory (i.e., hospitalization), and, without a cluster of patients with positive RIDT results, would not know if influenza is circulating in the community. However, clinicians can readily learn what influenza strains are circulating each week in the State by checking the Maryland Laboratories Administration's website.[5]

Material for this article compiled
by Jack DeBoy

References

[1] CDC H1N1 Flu.Interim Recommendations for Clinical Use of Influenza Diagnostic Tests. www.cdc.gov/h1n1flu/guidance/diagnostic_tests.htm
[2] www.cdc.gov/h1n1flu/recommendations.htm
[3] www.cdc.gov/h1n1flu/guidance/rapid_testing.htm
[4] http://dhmh.state.md.us/swineflu/pdf/Lab_testing_guidance_08-04-2009_ALL.pdf
[5] http://dhmh.state.md.us/labs/

Table 2. Correct Interpretations for Rapid Influenza Diagnostic Tests (RIDTs)[a]

RIDT (+) for Flu B = Interpretation: Influenza B virus infection likely = Treat with antiviral agents, if appropriate
RIDT (+) for Flu A = Interpretation: Influenza A virus infection likely; could be novel H1N1, seasonal H1N1, H3N2, or, rarely, an influenza virus of animal origin = Treat with antiviral agents, if appropriate
RIDT (-) for Flu A and B = Interpretation: Can not rule out influenza virus infection = Use clinical symptoms, severity, and underlying disease to decide if antiviral treatment is appropriate

[a] Adapted from:
http://dhmh.state.md.us/swineflu/pdf/Lab_testing_guidance_08-05-2009_ALL.pdf

(Continued from page 1)

Coronavirus Update

SARS-CoV, HCoV-NL63, and HCoV-HKU1.[2] Genotypic and serologic characterization has been used to place pathogenic CoVs into three groups (see Table 1).

CoV has a very high mutation due to discontinuous transcription and polymerase jumping, high frequency of homologous RNA recombination, and a large genome. This high mutation rate results in altered properties of the virus, a broad host range, and various disease manifestations in infected animals.[2] CoVs have been identified in many animals, including mice, rats, chickens, turkeys, swine, dogs, cats, bats, rabbits, horses, cattle, white-tailed deer, elk, whales and humans.

Table 1. Coronaviruses (CoVs) pathogenic for humans and other species grouped into genotypically and serologically distinct groups.[a]

Group 1: Canine CoV, Feline infectious peritonitis virus (FIPV), **Human CoV-229E and HNL63**, Porcine epidemic diarrhea virus (PEDV), Porcine transmissible gastroenteritis virus (TGEV), Rabbit CoV
Group 2: Bovine CoV, Canine respiratory CoV, **HCoV-OC43 and HCoV-HKU1, SARS-CoV**, Mouse hepatitis virus (MHV), Porcine hemagglutining encephalomyelitis virus (HEV), Rat coronavirus (RCV), Turkey CoV
Group 3: Avian (chicken) infectious bronchitis virus (IBV)

[a] Adapted from references 2 and 9.

Before 2003, there were complete genomes for only 10 CoVs. Through December 2008, 16 additional CoVs had their complete genomes sequenced, including the human strains HNL63 and HKU1, and others from bats, a horse, a whale, and four avian species.[3] This genomic work has led to a proposal to establish taxonomic subgroups of CoVs in groups 2 and 3. Among all hosts, the diversity of CoVs is most apparent in bats and birds, possibly due to their species diversity, ability to fly, and roosting and flocking habits. Current evidence supports that bat CoVs are the gene pools of CoV groups 1 and 2, while bird CoVs are the gene pools of CoV group 3.[3]

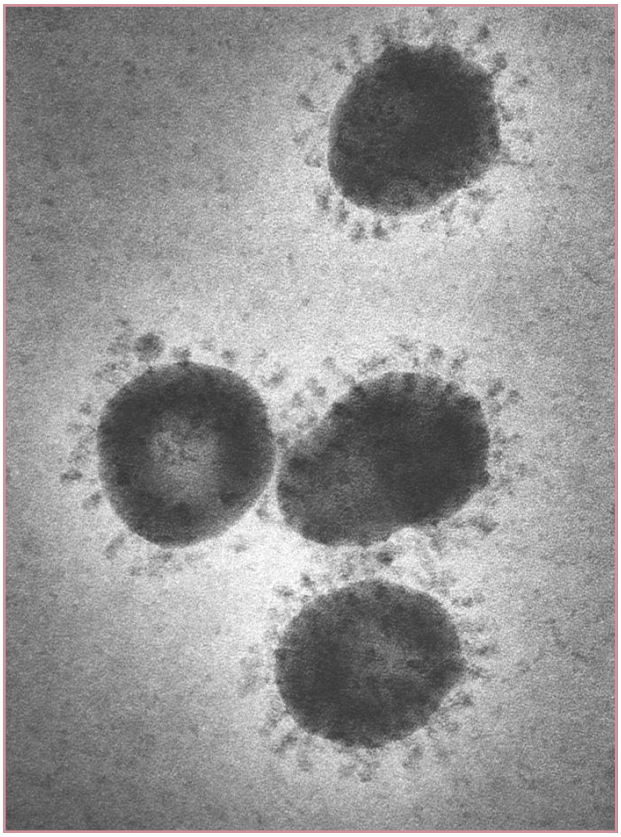

Photo 1: This 1975 transmission electron micrograph (TEM) reveals the presence of infectious bronchitis virus (IBV) virions, members of the genus *Coronavirus*. The coronavirus derives its name from the fact that under electron microscopic examination, each virion is surrounded by a "corona" or halo due to the presence of viral spike peplomers emanating from its proteinaceous capsid. Source: CDC Image Library http://phil.cdc.gov/phil/home.asp

Epidemiology

As more CoVs have been identified, more and more closely related CoVs from distantly related animals are being observed. This supports findings of recent interspecies jumping, such as that believed to have resulted in February 2003, when a CoV appears to have jumped from palm civets to humans at live-game markets in Guangdong, China. It also supports the need to remain vigilant for possible future zoonotic outbreaks of CoV that could lead to another disastrous outbreak in humans. However, studies of the 2003 SARS outbreak in humans clearly showed exposure to infected individuals was the driving force behind the outbreak's horizontal transmission.

Studies conducted in China after the SARS epidemic identified CoVs in bats and implicated the many species of this mammalian order as the likely reservoir of all known CoVs. More recently, tests for CoVs in bat species in Ghana showed that the diversified group 1 CoVs from these bats shared a common ancestor with the human common cold virus, HCoV-229E that existed around 1686-1800 CE.[4]

Human CoV infection is very common and occurs worldwide. It is spread primarily by infectious airborne droplets produced by coughing and sneezing. The incidence of infection is definitely seasonal, with the greatest incidence in children in winter. Adult infections are less common. Re-infection appears to occur throughout life. This is probably due to the presence of multiple serotypes and antigenic variants

Clinical Significance

CoVs cause respiratory infections in most infected species including humans, enteric infections in many infected

(Continued on page 4)

Update for TB Specimen Collection

To better serve our patients and health care providers, the Evaluation Team Program, of the State TB Control (with representation from the State Public Health TB Laboratory) has updated the specimen collection guidelines for laboratory diagnosis of tuberculosis (see accompanying chart from Maryland Department of Health and Mental Hygiene, Division of TB Control, Refugee and Migrant Health.) These guidelines were developed as part of recommendations coming out of the Department of Health and Mental Hygiene's TB program evaluation on sputum culture conversion, to improve two aspects of specimen collection: timely collection to document conversion within 60 days of treatment start, and to decrease the number of unnecessary specimens.

(Continued from page 3)

Coronavirus Update

species, and hepatitis and neurologic disorders in a few species. CoV-like particles have been identified in human feces, but no strong link to gastroenteritis in humans has been established.
In the mid-1960's human CoV-OC43 and HCoV-229E were the first HCoVs discovered. They were isolated from adults with respiratory illness who exhibited a mild, self-limiting infection with cold-like symptoms. HCoV-OC43 and HCoV-229E are responsible for 5-30% of respiratory tract infections, with outbreaks occurring at three to four-year intervals.[5]

HCoV-NL63 was discovered in the Netherlands in a 7-month-old with coryza, conjunctivitis, fever, and bronchiolitis.[6] That same year, HCoV-NL63 was also discovered in five additional children and three adults, two of whom were immunocompromised.[2] This CoV has since been detected in 2% of prospectively studied patients with respiratory tract infections in Brisbane.

Also in 2004, HCoV-HKU1 was discovered in Hong Kong in a 71-year-old man returning from Shenzhen, China. He presented with fever, a productive cough with purulent sputum, and had a chest x-ray showing patchy infiltrates.[7] A second case was later identified in a 35-year-old woman with unknown etiology. These recent discoveries of new HCoVs from the upper respiratory tracts of symptomatic patients suggest more novel HCoVs will be identified in the future.

CoV Detection

The growing number of HCoV serotypes and antigenic variants being discovered makes a reliable serological or molecular screening test for HCoVs difficult to develop. In 2006, in light of the probability that any new human epidemic involving an HCoV would be antigenically distinct from, and, therefore, not detectable using the test developed for SARS-CoV, CDC

(Continued on page 5)

Sputum Specimen Collection Guidelines

⇒ Collect specimens in sets of 3

- At least 8 hours apart, but no more than 24 hours apart
- At least one collected in early morning
- At least one observed by a HCW
- Include date AND time collected on lab slip
- Refrigerate specimens as soon as possible after collection
- Submit to lab within 24 hours after collection

⇒ Collect first set of 3 specimens prior to treatment, or as close as possible

⇒ Indicate treatment start-date on lab slip

⇒ Collect a set of 3 specimens every 2 wks until all specimens in a set are AFB smear-negative

⇒ Collect more frequently only if needed for return to work or school

⇒ Once all 3 specimens in a set are AFB "smear-negative," collect a set every 4 weeks until all 3 in a set are "culture-negative"

⇒ Assure specimens are collected just prior to completion of 60 days on treatment

⇒ If patient is able, collect one sputum specimen at end of treatment

Exceptions:

- If clinically indicated (recurrent symptoms or treatment interruption), specimens may need to be collected after the culture is negative
- MDR and XDR-TB patients may require additional specimens for monitoring

(Continued from page 4)

Coronavirus Update

withdrew the SARS-CoV test from use by all state public health laboratories. Commercial tests for SARS-CoV remain on the market but their current need is questionable.

Some researchers are attempting to develop multiplex PCR assays that will detect dozens of human viral pathogens including HCoVs.[8] However, current molecular methods have evolved to a point where any new epidemic CoV, once isolated, could be used to develop, validate, and distribute a new and specific PCR to detect the new CoV in only a few weeks. So it is questionable whether screening for known HCoVs is either medically useful or cost effective.

This article compiled by Jack DeBoy.

References

[1] Li, Fang., et al. 2005. *Science*, 309:1864-1868.
[2] *Manual of Clinical Microbiology*. 2007. 9th ed., ASM Press, p. 1414-1423.
[3] Woo, P.C., et al. 2009. *Exp. Biol. Med.*, June 22, PubMed ahead of print (PMID: 19546349).
[4] Pfefferie, S., et al. 2009. *Emerg. Infect. Dis.*, 15 (9):1377-1384.
[5] Vallet, S, et al. 2004. *Mol. Cell. Probes*, 18:75-80.
[6] Vad der Hoek, L. 2004. *Nat. Med.*, 10:368-373.
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[8] Marshall, D.J., et al. 2007. *J. Clin. Micro.*, 45 (12):3875-3882.
[9] *Fields Virology*. 2001. 4th ed., Lippincott Williams & Wilkins, p. 1164.

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Laboratory Statistics

Reported from the
Laboratories Administration
during the month of
July 2009

ENTERIC BACTERIOLOGY

GENUS SEROVAR	SEX	AGE	#	JURISDICTION
CAMPYLOBACTER				
	M	13	1	WICOMICO
CAMPYLOBACTER JEJUNI				
	F	86	1	ANNE ARUNDEL
	F	56	1	ANNE ARUNDEL
	M	29	1	ANNE ARUNDEL
	M	26	1	ANNE ARUNDEL
	U	43	1	BALTIMORE
	F	59	1	BALTIMORE
	F	16	1	BALTIMORE
	F	16	1	BALTIMORE
	F	4	1	BALTIMORE
	F	4	1	BALTIMORE
	F	0	1	BALTIMORE
	M	66	1	BALTIMORE
	M	49	1	BALTIMORE
	M	40	1	BALTIMORE
	M	36	1	BALTIMORE
	M	35	1	BALTIMORE
	M	30	1	BALTIMORE
	M	17	1	BALTIMORE
	M	11	1	BALTIMORE
	M	6	2	BALTIMORE
	F	96	1	BALTIMORE CITY
	U	8	1	CECIL
	M	1	1	CHARLES
	F	29	1	FREDERICK
	U	3	1	HARFORD
	F	11	1	HARFORD
	M	39	1	HARFORD
	F	78	1	MONTGOMERY
	F	19	1	MONTGOMERY
	F	2	1	MONTGOMERY
	M	88	1	MONTGOMERY
	M	56	1	MONTGOMERY
	F	16	2	OUT OF STATE
	M	24	1	PRINCE GEORGE'S
	M	47	1	TALBOT
CAMPYLOBACTER JEJUNI SS DOYLEI				
	U	53	1	BALTIMORE
	F	38	1	BALTIMORE
CAMPYLOBACTER SP.				
	F	37	1	ALLEGANY
	F	59	1	BALTIMORE
	M	6	1	BALTIMORE
CAMPYLOBACTER SPECIES				
	M	88	1	MONTGOMERY
ESCHERICHIA COLI O111:NON-MOTILE				
	U	5	2	OUT OF STATE
	M	41	1	OUT OF STATE
	U	51	1	OUT OF STATE
ESCHERICHIA COLI, SEROTYPE O157:NON-MOTILE				
	U	11	1	BALTIMORE
SALMONELLA				
	F	21	1	ALLEGANY
	F	68	1	BALTIMORE
	M	1	1	PRINCE GEORGE'S
SALMONELLA ENTERITIDIS				
	F	58	2	BALTIMORE CITY
SALMONELLA HEIDELBERG				
	M	53	1	BALTIMORE
SALMONELLA HINDMARSH				
	M	34	1	FREDERICK
SALMONELLA HVITTINGFOSS				
	M	0	1	ALLEGANY
SALMONELLA JAVIANA				
	U	0	1	BALTIMORE CITY
	M	11	1	BALTIMORE CITY
	M	0	1	HARFORD
	M	57	1	OUT OF STATE
SALMONELLA LITCHFIELD				
	M	67	1	CALVERT
SALMONELLA MUENCHEN				
	U	0	1	ALLEGANY
	F	82	1	WASHINGTON
SALMONELLA ORANIENBURG				
	F	23	1	OUT OF STATE
	M	5	1	PRINCE GEORGE'S
SALMONELLA PANAMA				
	U	0	1	BALTIMORE CITY
	F	0	2	BALTIMORE CITY
	F	2	1	BALTIMORE CITY
	M	51	1	BALTIMORE CITY
	M	3	1	BALTIMORE CITY
SALMONELLA SER ENTERITIDIS				
	F	55	1	CHARLES
	F	49	1	OUT OF STATE
	F	10	1	OUT OF STATE
	M	77	1	OUT OF STATE
	M	38	1	OUT OF STATE
	M	9	1	OUT OF STATE
SALMONELLA SER HEIDELBERG				
	M	0	1	BALTIMORE CITY
	F	62	1	FREDERICK
	F	39	1	PRINCE GEORGE'S
SALMONELLA SER TYPHI				
	F	38	1	CECIL
	U	9	1	OUT OF STATE
	M	33	2	PRINCE GEORGE'S
SALMONELLA SER TYPHIMURIUM				
	F	3	1	BALTIMORE CITY
SALMONELLA TYPHIMURIUM VAR COPENHAGEN				
	M	66	1	HARFORD

SHIGELLA FLEXNERI

M	24	1	ANNE ARUNDEL

SHIGELLA SONNEI

U	8	1	BALTIMORE
M	32	3	BALTIMORE
U	0	2	BALTIMORE CITY
F	0	1	BALTIMORE CITY
F	56	1	BALTIMORE CITY
F	29	1	BALTIMORE CITY
F	9	1	BALTIMORE CITY
F	2	1	BALTIMORE CITY
M	0	1	BALTIMORE CITY
M	29	2	BALTIMORE CITY
M	16	1	BALTIMORE CITY
M	3	1	BALTIMORE CITY
M	2	1	BALTIMORE CITY
U	25	1	CARROLL
F	27	1	CECIL
M	5	1	CHARLES
F	48	1	OUT OF STATE
F	33	1	OUT OF STATE
F	9	1	OUT OF STATE
F	7	1	OUT OF STATE
F	6	1	OUT OF STATE
F	6	1	OUT OF STATE
F	5	1	OUT OF STATE
F	3	1	OUT OF STATE
F	2	1	OUT OF STATE
M	14	1	OUT OF STATE
M	12	1	OUT OF STATE
M	7	1	OUT OF STATE
M	2	1	OUT OF STATE
M	2	1	OUT OF STATE
F	16	1	UNKNOWN

VIBRIO FLUVIALIS

F	69	1	HARFORD

VIBRIO VULNIFICUS

F	54	1	BALTIMORE CITY
M	0	1	BALTIMORE CITY

TOTAL 126

ISOLATES - REFERENCE

GENUS SPECIES

SOURCE	#	JURISDICTION
BACILLUS CEREUS		
TISSUE	1	BALTIMORE CITY
CELLULOMONAS SPECIES		
BLOOD	1	BALTIMORE CITY
CLOSTRIDIUM DIFFICILE		
TISSUE	1	BALTIMORE CITY
ENTEROCOCCUS FAECIUM		
URINE	1	WICOMICO
ESCHERICHIA COLI		
BLOOD	1	ALLEGANY
KLEBSIELLA PNEUMONIAE		
URINE	2	BALTIMORE
OTHER	1	CHARLES
BLOOD	3	PRINCE GEORGE'S
SPUTUM	1	PRINCE GEORGE'S
URINE	3	PRINCE GEORGE'S
MORGANELLA MORGANII		
URINE	1	CARROLL
WOUND	1	CARROLL
OLIGELLA URETHRALIS		
BLOOD	1	ANNE ARUNDEL
PROTEUS MIRABILIS		
HODGE	3	CARROLL
URINE	1	CARROLL
STAPHYLOCOCCUS AUREUS		
SPUTUM	1	WICOMICO
WOUND	1	WICOMICO
STREPTOCOCCUS, VIRIDANS GROUP		
BLOOD	2	ANNE ARUNDEL
VIBRIO VULNIFICUS		
BLOOD	1	CALVERT

TOTAL 27

ISOLATES - MISCELLANEOUS

GENUS SPECIES

SOURCE	#	JURISDICTION
ALCALIGENES FAECALIS		
WOUND	1	FREDERICK
BACILLUS		
WOUND	2	FREDERICK
BACILLUS SPECIES		
CSF	1	BALTIMORE CITY
BREVIBACTERIUM CASEI		
WOUND	1	FREDERICK
ENTEROBACTER CLOACAE		
WOUND	1	FREDERICK
ENTEROCOCCUS FAECALIS		
WOUND	1	FREDERICK
ENTEROCOCCUS FAECIUM		
BLOOD	1	BALTIMORE CITY
ESCHERICHIA COLI		
BLOOD	1	BALTIMORE CITY
CSF	1	BALTIMORE CITY
GARDNERELLA VAGINALIS		
VAGINAL	3	PRINCE GEORGE'S
LACTOBACILLUS MINUTUS		
CSF	1	BALTIMORE CITY
LACTOBACILLUS SPECIES		
URINE	1	FREDERICK
PANTOEA AGGLOMERANS		
WOUND	1	FREDERICK
URINE	1	PRINCE GEORGE'S
PROTEUS MIRABILIS		
WOUND	2	FREDERICK
PSEUDOMONAS AERUGINOSA		
WOUND	2	FREDERICK
SPUTUM	1	WASHINGTON
STAPHYLOCOCCUS AUREUS		
ABSCESS	1	BALTIMORE CITY
BLOOD	3	BALTIMORE CITY
WOUND	1	CARROLL
WOUND	1	FREDERICK
WOUND	1	PRINCE GEORGE'S
STAPHYLOCOCCUS, COAGULASE NEGATIVE		
BREAST	1	ALLEGANY
BLOOD	2	BALTIMORE CITY
WOUND	1	BALTIMORE CITY
WOUND	1	FREDERICK
STAPHYLOCOCCUS SPECIES COAGULASE		
BLOOD	1	BALTIMORE CITY
STREPTOCOCCUS, ALPHA-HEMOLYTIC		
BLOOD	1	BALTIMORE CITY
STREPTOCOCCUS, BETA HEMOLYTIC GROUP B		
CERVIX	1	ANNE ARUNDEL
BLOOD	2	BALTIMORE CITY
URINE	1	CARROLL
CERVIX	1	FREDERICK
VAGINAL	1	HOWARD
CERVIX	1	PRINCE GEORGE'S
VAGINAL	4	PRINCE GEORGE'S
VAGINAL	6	PRINCE GEORGE'S

TOTAL 53

SEXUALLY TRANSMITTED DISEASES

GENUS SPECIES

SEX	#	JURISDICTION
SYPHILIS SEROLOGY;		
M	1	ALLEGANY
F	2	ANNE ARUNDEL
M	2	ANNE ARUNDEL
F	1	BALTIMORE
M	5	BALTIMORE
U	1	BALTIMORE
F	10	BALTIMORE CITY
M	31	BALTIMORE CITY
M	1	CALVERT
M	2	CHARLES
F	1	DORCHESTER
M	1	FREDERICK
M	2	HOWARD
F	3	MONTGOMERY
M	4	MONTGOMERY
U	1	MONTGOMERY
F	2	PRINCE GEORGE'S
M	24	PRINCE GEORGE'S
U	2	PRINCE GEORGE'S
F	1	SOMERSET
U	1	UNKNOWN
M	1	WASHINGTON
F	1	WICOMICO
M	2	WICOMICO

TOTAL 102

CHLAMYDIA TRACHOMATIS

F	1	ALLEGANY
F	24	ANNE ARUNDEL
M	25	ANNE ARUNDEL
F	23	BALTIMORE
M	14	BALTIMORE
F	15	BALTIMORE CITY
M	15	BALTIMORE CITY
U	2	BALTIMORE CITY
F	2	CALVERT
M	2	CALVERT
F	3	CARROLL
F	1	CECIL
M	1	CECIL
F	7	CHARLES
M	4	CHARLES
F	1	DORCHESTER
U	1	DORCHESTER
F	11	FREDERICK
M	6	FREDERICK
U	1	FREDERICK
F	2	GARRETT
F	8	HARFORD
F	4	HOWARD
M	2	HOWARD
F	12	MONTGOMERY
M	7	MONTGOMERY

F	45	PRINCE GEORGE'S
M	48	PRINCE GEORGE'S
U	2	PRINCE GEORGE'S
F	4	SAINT MARY'S
F	7	SOMERSET
M	8	SOMERSET
M	2	TALBOT
F	1	WASHINGTON
M	4	WASHINGTON
F	20	WICOMICO
M	15	WICOMICO
F	2	WORCESTER
M	3	WORCESTER

TOTAL 355

NEISSERIA GONORRHOEAE

F	2	ALLEGANY
F	2	ANNE ARUNDEL
F	2	BALTIMORE
M	4	BALTIMORE
M	1	BALTIMORE CITY
M	5	CHARLES
M	1	DORCHESTER
F	2	FREDERICK
M	1	FREDERICK
F	1	HOWARD
F	1	MONTGOMERY
F	5	PRINCE GEORGE'S
M	21	PRINCE GEORGE'S
F	1	SAINT MARY'S
M	1	SAINT MARY'S
F	1	SOMERSET
F	5	WICOMICO
M	4	WICOMICO
M	1	WORCESTER

TOTAL 61

MYCOBACTERIOLOGY

ISOLATE

SEX	AGE	#	JURISDICTION
AEROBIC ACTINOMYCETE			
F	74	1	WICOMICO
MYCOBACTERIUM ABSCESSUS			
M	31	1	OUT OF STATE
M	58	1	QUEEN ANNE'S
MYCOBACTERIUM AVIUM COMPLEX			
M	67	1	ANNE ARUNDEL
F	68	2	BALTIMORE
M	34	1	BALTIMORE
M	45	1	BALTIMORE
M	62	1	BALTIMORE
M	66	2	BALTIMORE
M	36	1	BALTIMORE CITY
M	40	1	BALTIMORE CITY
F	74	1	CARROLL
U	0	5	FREDERICK
M	72	1	FREDERICK
F	40	2	HOWARD
M	36	1	MONTGOMERY
M	65	1	MONTGOMERY
M	34	1	PRINCE GEORGE'S
F	79	1	WICOMICO
M	67	1	WICOMICO
MYCOBACTERIUM BOVIS			
M	72	1	ANNE ARUNDEL
MYCOBACTERIUM CHELONAE			
M	58	1	QUEEN ANNE'S
MYCOBACTERIUM FORTUITUM			
F	71	2	BALTIMORE
F	32	1	MONTGOMERY
M	55	1	MONTGOMERY
M	53	2	WASHINGTON
MYCOBACTERIUM FORTUITUM COMPLEX			
F	48	1	MONTGOMERY
U	28	1	MONTGOMERY
M	87	1	OUT OF STATE
F	30	1	PRINCE GEORGE'S
MYCOBACTERIUM GORDONAE			
M	95	1	BALTIMORE
M	75	1	BALTIMORE CITY
M	54	1	CALVERT
M	76	1	FREDERICK
M	77	1	FREDERICK
F	48	1	MONTGOMERY
F	52	1	OUT OF STATE
M	58	1	QUEEN ANNE'S
M	23	1	WICOMICO
MYCOBACTERIUM KANSASII			
M	65	1	MONTGOMERY
MYCOBACTERIUM MARINUM			
F	28	1	BALTIMORE CITY
M	72	1	BALTIMORE CITY
MYCOBACTERIUM TUBERCULOSIS			
F	53	1	BALTIMORE
M	81	1	BALTIMORE
M	22	1	BALTIMORE CITY
M	21	1	CHARLES
F	32	1	OUT OF STATE
F	33	1	OUT OF STATE
F	41	1	OUT OF STATE
F	64	1	OUT OF STATE
M	26	1	OUT OF STATE
F	17	1	PRINCE GEORGE'S
F	29	1	PRINCE GEORGE'S
M	23	1	PRINCE GEORGE'S
F	32	1	WORCESTER
MYCOBACTERIUM TUBERCULOSIS COMPLEX			
M	72	1	ANNE ARUNDEL
M	80	1	BALTIMORE
F	0	1	BALTIMORE CITY
M	55	2	BALTIMORE CITY
F	34	2	HOWARD
M	72	5	HOWARD
F	32	1	MONTGOMERY
F	87	5	MONTGOMERY
M	33	1	MONTGOMERY
M	35	3	MONTGOMERY
M	44	1	MONTGOMERY
M	26	3	OUT OF STATE
M	31	7	OUT OF STATE
M	53	2	OUT OF STATE
M	65	1	OUT OF STATE
F	17	4	PRINCE GEORGE'S
F	29	2	PRINCE GEORGE'S
F	32	4	PRINCE GEORGE'S
F	60	3	PRINCE GEORGE'S
M	22	1	PRINCE GEORGE'S
M	23	2	PRINCE GEORGE'S
M	25	2	PRINCE GEORGE'S
M	72	6	PRINCE GEORGE'S
M	90	2	WASHINGTON
SCOTOCHROMOGENIC MYCOBACTERIA			
F	57	1	BALTIMORE

TOTAL 127

MYCOBACTERIUM SUSCEPTIBILITY RESULTS

18 ISOLATES IDENTIFIED
8 DRUG RESISTANT STRAINS FOUND

#	JURISDICTION	DRUG(S)
1	WASHINGTON DC	ISONIAZID
1	PRINCE GEORGE'S	STREPTOMYCIN
1	WICOMICO	ISONIAZID
1[B]	BALTIMORE	PYRAZINAMIDE
1	MONTGOMERY	STREPTOMYCIN
1	MONTGOMERY	STREPTOMYCIN
1	WICOMICO	ISONIAZID
1[B]	WICOMICO	PYRAZINAMIDE

[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
ABSIDIA SPECIES			
M	66	1	TALBOT
ALTERNARIA SPECIES			
F	17	1	CECIL
ASPERGILLUS FLAVUS			
M	59	1	ANNE ARUNDEL
M	57	1	BALTIMORE CITY
ASPERGILLUS FUMIGATUS			
F	43	1	ANNE ARUNDEL
F	85	1	ANNE ARUNDEL
F	59	1	BALTIMORE
U	59	1	BALTIMORE CITY
F	49	1	CHARLES
F	89	1	CHARLES
F	79	1	MONTGOMERY
M	51	1	MONTGOMERY
M	77	1	MONTGOMERY
F	72	1	PRINCE GEORGE'S
M	0	1	PRINCE GEORGE'S
ASPERGILLUS GLAUCUS GROUP			
F	77	1	ANNE ARUNDEL
ASPERGILLUS NIGER			
M	68	1	PRINCE GEORGE'S
ASPERGILLUS OCHRACEUS			
F	77	1	ANNE ARUNDEL
ASPERGILLUS SPECIES			
F	80	1	ANNE ARUNDEL
CANDIDA ALBICANS			
M	61	2	BALTIMORE
U	0	1	BALTIMORE CITY
F	38	2	BALTIMORE CITY
F	55	1	BALTIMORE CITY
M	0	1	BALTIMORE CITY
M	45	1	BALTIMORE CITY
M	47	1	BALTIMORE CITY
M	52	4	BALTIMORE CITY
M	59	1	BALTIMORE CITY
M	62	1	BALTIMORE CITY
M	64	1	BALTIMORE CITY

M	66	1	BALTIMORE CITY
M	77	1	BALTIMORE CITY
M	78	1	BALTIMORE CITY
M	84	1	BALTIMORE CITY
F	30	1	MONTGOMERY
F	48	1	MONTGOMERY
F	62	1	MONTGOMERY
F	79	1	MONTGOMERY
F	85	1	MONTGOMERY
M	52	1	MONTGOMERY
M	55	1	MONTGOMERY
U	0	1	PRINCE GEORGE'S
F	0	1	PRINCE GEORGE'S
F	20	1	PRINCE GEORGE'S
F	21	1	PRINCE GEORGE'S
F	23	1	PRINCE GEORGE'S
F	26	1	PRINCE GEORGE'S
F	31	1	PRINCE GEORGE'S
F	38	1	PRINCE GEORGE'S
F	45	1	PRINCE GEORGE'S
F	56	1	PRINCE GEORGE'S
F	57	1	PRINCE GEORGE'S
F	60	1	PRINCE GEORGE'S
F	74	1	PRINCE GEORGE'S
F	76	1	PRINCE GEORGE'S
M	0	1	PRINCE GEORGE'S
M	36	1	PRINCE GEORGE'S
M	40	1	PRINCE GEORGE'S
M	48	1	PRINCE GEORGE'S
M	53	1	PRINCE GEORGE'S
M	57	1	PRINCE GEORGE'S
M	66	1	PRINCE GEORGE'S
M	72	1	PRINCE GEORGE'S
M	84	1	PRINCE GEORGE'S
CANDIDA GLABRATA			
F	33	1	BALTIMORE
M	0	1	BALTIMORE CITY
M	63	1	BALTIMORE CITY
M	75	1	BALTIMORE CITY
M	77	1	BALTIMORE CITY
M	84	1	BALTIMORE CITY
F	0	1	PRINCE GEORGE'S
F	56	1	PRINCE GEORGE'S
CANDIDA GUILLIERMONDII			
F	85	1	MONTGOMERY
CANDIDA KRUSEI			
F	56	1	PRINCE GEORGE'S
CANDIDA LUSITANIAE			
M	58	1	BALTIMORE CITY
F	0	1	PRINCE GEORGE'S
F	49	1	PRINCE GEORGE'S
CANDIDA PARAPSILOSIS			
F	84	1	BALTIMORE
M	27	1	PRINCE GEORGE'S
M	90	1	PRINCE GEORGE'S
CANDIDA PELLICULOSA			
M	62	1	BALTIMORE CITY
CANDIDA SPECIES			
U	45	1	BALTIMORE CITY
U	60	1	PRINCE GEORGE'S
CANDIDA TROPICALIS			
M	15	1	MONTGOMERY
F	43	1	PRINCE GEORGE'S
F	61	1	PRINCE GEORGE'S
M	95	1	PRINCE GEORGE'S
CLADOSPORIUM SPECIES			
F	50	1	ALLEGANY
F	9	1	ANNE ARUNDEL
M	58	1	BALTIMORE CITY
U	0	1	PRINCE GEORGE'S
M	68	1	TALBOT
CRYPTOCOCCUS NEOFORMANS			
F	0	1	BALTIMORE CITY
CUNNINGHAMELLA			
M	67	1	CALVERT
CURVULARIA SPECIES			
F	77	1	ANNE ARUNDEL
FUSARIUM SPECIES			
U	55	1	FREDERICK
HORMONEMA DEMATIOIDES			
M	60	1	CALVERT
F	35	1	CECIL
MYCELIA STERILIA			
F	52	1	ANNE ARUNDEL
F	59	1	ANNE ARUNDEL
F	38	1	BALTIMORE CITY
M	44	1	BALTIMORE CITY
M	78	1	BALTIMORE CITY
F	81	1	CARROLL
NOCARDIA ASTEROIDES COMPLEX			
F	57	1	BALTIMORE CITY
NOCARDIA FARCINICA			
F	81	3	TALBOT
NOCARDIA NOVA			
M	70	1	BALTIMORE CITY
NOCARDIA SPECIES			
U	74	1	CARROLL
F	49	1	CECIL
PENICILLIUM SPECIES			
F	51	1	ANNE ARUNDEL
F	77	2	ANNE ARUNDEL
M	0	1	ANNE ARUNDEL
F	48	1	CECIL
F	72	1	FREDERICK
F	62	1	MONTGOMERY
F	70	1	PRINCE GEORGE'S
M	49	1	PRINCE GEORGE'S
M	68	1	PRINCE GEORGE'S
M	75	1	PRINCE GEORGE'S
F	91	1	TALBOT
PITHOMYCES SPECIES			
F	35	1	CECIL
RHODOTORULA SPECIES			
M	66	1	MONTGOMERY
SCEDOSPORIUM APIOSPERMUM			
M	66	1	BALTIMORE CITY
SYNCEPHALASTRUM SPECIES			
F	87	1	TALBOT
M	78	1	TALBOT
TRICHOPHYTON MENTAGROPHYTES			
F	90	1	ANNE ARUNDEL
U	45	1	BALTIMORE CITY
TRICHOPHYTON RUBRUM			
F	27	1	FREDERICK
M	66	1	MONTGOMERY
F	48	1	TALBOT
M	0	1	WICOMICO
M	17	1	WICOMICO
TRICHOPHYTON SPECIES			
F	47	1	MONTGOMERY
TRICHOPHYTON TONSURANS			
F	59	1	BALTIMORE
M	1	1	BALTIMORE
F	2	1	TALBOT
F	33	1	TALBOT
F	9	1	TALBOT
M	10	1	TALBOT
M	2	1	TALBOT
M	3	1	TALBOT
TRICHOSPORON ASAHII			
M	75	1	FREDERICK
TOTAL	**151**		

PARASITOLOGY

GENUS/SPECIES	#	JURISDICTION
AMBLYOMMA AMERICANUM		
	1	MONTGOMERY
BLASTOCYSTIS HOMINIS		
	1	BALTIMORE CITY
	1	WASHINGTON
	2	PRINCE GEORGE'S
	1	MONTGOMERY
	1	BALTIMORE CITY
	1	MONTGOMERY
	2	HARFORD
	1	MONTGOMERY
	3	HOWARD
	3	MONTGOMERY
CHILOMASTIX MESNILI		
	1	BALTIMORE CITY
DERMATOBIA HOMINIS		
	1	MONTGOMERY
DIENTAMOEBA FRAGILIS		
	1	PRINCE GEORGE'S
	1	BALTIMORE CITY
ENDOLIMAX NANA		
	1	MONTGOMERY
	1	PRINCE GEORGE'S
	3	MONTGOMERY
	2	HARFORD
	1	MONTGOMERY
	4	HOWARD
	1	MONTGOMERY
ENTAMEBA COLI		
	1	MONTGOMERY
ENTAMOEBA COLI		
	2	PRINCE GEORGE'S
	2	PRINCE GEORGE'S
ENTAMOEBA HARTMANNI		
	1	ANNE ARUNDEL
	2	MONTGOMERY
	2	CARROLL
ENTEROBIUS VERMICULARIS		
	5	HOWARD
GIARDIA LAMBLIA		
	3	ANNE ARUNDEL
	3	BALTIMORE CITY
	1	HOWARD
HOOKWORM		
	2	PRINCE GEORGE'S
HYMENOLEPIS NANA		
	1	MONTGOMERY
PLASMODIUM FALCIPARUM		
	1	ANNE ARUNDEL
	1	MONTGOMERY
	1	BALTIMORE CITY
TRICHURIS TRICHIURA		
	1	HOWARD
	2	HOWARD
TOTAL	**65**	

WATER MICROBIOLOGY

	# TESTED	# NON-COMPLIANT
COMMUNITY	2	0
NON-COMMUNITY	305	93
TOTAL	**307**	**93**

FOOD PROTECTION

	TOTALS
FOOD	
SAMPLES	42
NOTABLE PATHOGENS:	
CAMPYLOBACTER SP.	3
LISTERIA SP.	0
SALMONELLA SP.	3
CRABMEAT	
SAMPLES	7
EXCEEDING STANDARDS[1]	0
NOTABLE PATHOGENS:	
LISTERIA INNOCUA	1
SHELLFISH	
SAMPLES	0
EXCEEDING STANDARDS[2]	0
SHELLFISH GROWING WATERS	
SAMPLES	408
TOTAL SAMPLES	**457**
TOTAL STANDARDS EXCEEDED	**6**

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			
M	79	1	BALTIMORE
M	0	1	BALTIMORE
F	37	1	CALVERT
F	47	1	CALVERT
M	0	1	BALTIMORE CITY
HERPES SIMPLEX VIRUS TYPE 1			
F	30	1	BALTIMORE CITY
M	51	1	BALTIMORE CITY
HERPES SIMPLEX VIRUS TYPE 2			
F	18	1	SOMERSET
INFLUENZA B VIRUS			
F	20	1	BALTIMORE
PARAINFLUENZA VIRUS 1			
F	55	1	BALTIMORE
PARAINFLUENZA VIRUS 3			
M	0	1	ALLEGANY
M	0	1	ANNE ARUNDEL
F	47	1	BALTIMORE
M	95	1	BALTIMORE
TOTAL		**14**	

VIRAL POLYMERASE CHAIN REACTION (PCR)

ISOLATE SEX	AGE	#	JURISDICTION
HERPES SIMPLEX VIRUS TYPE 1			
F	22	1	ALLEGANY
F	24	1	ALLEGANY
F	16	1	BALTIMORE
F	21	1	BALTIMORE
F	16	1	BALTIMORE CITY
F	20	1	CALVERT
F	21	1	CARROLL
F	48	1	CARROLL
F	18	1	CHARLES
F	20	1	FREDERICK
F	24	1	FREDERICK
F	0	1	HOWARD
F	18	1	PRINCE GEORGE'S
M	26	1	PRINCE GEORGE'S
F	18	1	WASHINGTON
F	32	1	WICOMICO
HERPES SIMPLEX VIRUS TYPE 2			
F	20	1	ALLEGANY
F	22	1	ANNE ARUNDEL
M	24	1	ANNE ARUNDEL
M	32	1	ANNE ARUNDEL
F	20	1	BALTIMORE
F	34	1	BALTIMORE
F	37	1	BALTIMORE
U	0	1	BALTIMORE CITY
F	0	1	BALTIMORE CITY
F	16	1	BALTIMORE CITY
F	17	1	BALTIMORE CITY
F	20	3	BALTIMORE CITY
F	21	3	BALTIMORE CITY
F	22	1	BALTIMORE CITY
F	23	2	BALTIMORE CITY
F	30	1	BALTIMORE CITY
F	32	1	BALTIMORE CITY
F	43	1	BALTIMORE CITY
F	45	1	BALTIMORE CITY
F	48	1	BALTIMORE CITY
F	53	1	BALTIMORE CITY
M	0	2	BALTIMORE CITY
M	24	1	BALTIMORE CITY
M	25	1	BALTIMORE CITY
M	27	2	BALTIMORE CITY
M	30	1	BALTIMORE CITY
M	31	1	BALTIMORE CITY
M	37	1	BALTIMORE CITY
M	38	1	BALTIMORE CITY
M	21	1	CECIL
M	49	1	CECIL
F	22	1	CHARLES
F	25	1	FREDERICK
F	27	1	FREDERICK
M	19	1	FREDERICK
M	41	2	MONTGOMERY
F	18	1	PRINCE GEORGE'S
F	20	1	PRINCE GEORGE'S
F	21	1	PRINCE GEORGE'S
F	22	1	PRINCE GEORGE'S
F	23	1	PRINCE GEORGE'S
F	25	1	PRINCE GEORGE'S
F	27	1	PRINCE GEORGE'S
F	31	1	PRINCE GEORGE'S
F	34	1	PRINCE GEORGE'S
F	47	1	PRINCE GEORGE'S
M	29	1	PRINCE GEORGE'S
M	31	1	PRINCE GEORGE'S
M	49	1	PRINCE GEORGE'S
F	18	1	SOMERSET
F	17	1	TALBOT
F	20	1	WASHINGTON
F	46	1	WASHINGTON
F	25	2	WICOMICO
INFLUENZA A (H1/N1) NOVEL A			
F	29	1	ALLEGANY
M	26	1	ALLEGANY
M	40	1	ALLEGANY
M	66	1	ALLEGANY
U	44	1	ANNE ARUNDEL
F	22	1	ANNE ARUNDEL
F	25	1	BALTIMORE
F	50	1	BALTIMORE
M	36	1	BALTIMORE
M	38	1	BALTIMORE
M	49	1	BALTIMORE
M	96	1	BALTIMORE
U	0	1	BALTIMORE CITY
U	22	1	BALTIMORE CITY
U	32	1	BALTIMORE CITY
U	55	1	BALTIMORE CITY
F	1	1	BALTIMORE CITY
F	11	1	BALTIMORE CITY
F	16	1	BALTIMORE CITY
F	17	1	BALTIMORE CITY
F	18	2	BALTIMORE CITY
F	19	3	BALTIMORE CITY
F	21	3	BALTIMORE CITY
F	22	1	BALTIMORE CITY
F	24	2	BALTIMORE CITY
F	27	1	BALTIMORE CITY
F	29	2	BALTIMORE CITY
F	3	1	BALTIMORE CITY
F	30	1	BALTIMORE CITY
F	42	1	BALTIMORE CITY
F	46	1	BALTIMORE CITY
F	5	1	BALTIMORE CITY
F	51	1	BALTIMORE CITY
F	56	1	BALTIMORE CITY
F	78	1	BALTIMORE CITY
M	0	3	BALTIMORE CITY
M	1	4	BALTIMORE CITY
M	11	1	BALTIMORE CITY
M	12	1	BALTIMORE CITY
M	15	1	BALTIMORE CITY
M	16	3	BALTIMORE CITY
M	17	1	BALTIMORE CITY
M	18	2	BALTIMORE CITY
M	2	1	BALTIMORE CITY
M	21	2	BALTIMORE CITY
M	24	1	BALTIMORE CITY
M	25	3	BALTIMORE CITY
M	26	2	BALTIMORE CITY
M	27	2	BALTIMORE CITY
M	28	1	BALTIMORE CITY
M	30	1	BALTIMORE CITY
M	31	2	BALTIMORE CITY
M	39	1	BALTIMORE CITY
M	4	1	BALTIMORE CITY
M	41	1	BALTIMORE CITY
M	44	1	BALTIMORE CITY
M	45	1	BALTIMORE CITY

M	46	2	BALTIMORE CITY
M	47	1	BALTIMORE CITY
M	5	1	BALTIMORE CITY
M	54	1	BALTIMORE CITY
M	55	1	BALTIMORE CITY
M	58	1	BALTIMORE CITY
M	6	1	BALTIMORE CITY
M	7	1	BALTIMORE CITY
M	78	1	BALTIMORE CITY
M	8	2	BALTIMORE CITY
U	20	1	CALVERT
U	55	1	CALVERT
F	10	2	CALVERT
F	19	1	CALVERT
F	29	1	CALVERT
M	10	2	CALVERT
M	33	1	CALVERT
M	49	1	CALVERT
M	57	1	CALVERT
F	53	1	CECIL
M	12	1	CECIL
U	11	1	CHARLES
F	0	1	CHARLES
F	51	1	CHARLES
M	0	1	CHARLES
M	27	1	CHARLES
F	30	1	DORCHESTER
M	0	1	FREDERICK
M	15	1	FREDERICK
M	41	1	FREDERICK
M	16	1	GARRETT
F	14	1	HARFORD
M	15	1	HARFORD
M	56	1	HARFORD
M	11	1	KENT
U	18	1	MONTGOMERY
F	31	1	MONTGOMERY
M	1	1	MONTGOMERY
U	0	2	OUT OF STATE
U	1	3	OUT OF STATE
U	11	2	OUT OF STATE
U	12	1	OUT OF STATE
U	15	1	OUT OF STATE
U	16	2	OUT OF STATE
U	17	2	OUT OF STATE
U	18	1	OUT OF STATE
U	2	2	OUT OF STATE
U	20	1	OUT OF STATE
U	29	1	OUT OF STATE
U	3	1	OUT OF STATE
U	47	1	OUT OF STATE
U	5	2	OUT OF STATE
U	50	1	OUT OF STATE
U	6	4	OUT OF STATE
U	7	1	OUT OF STATE
U	9	1	OUT OF STATE
F	0	2	OUT OF STATE
F	1	1	OUT OF STATE
F	16	1	OUT OF STATE
F	25	1	OUT OF STATE
F	37	1	OUT OF STATE
F	41	1	OUT OF STATE
F	54	1	OUT OF STATE
F	77	1	OUT OF STATE
M	1	1	OUT OF STATE
M	17	1	OUT OF STATE
M	30	1	OUT OF STATE
M	40	1	OUT OF STATE
M	44	1	OUT OF STATE
M	45	1	OUT OF STATE
U	20	1	PRINCE GEORGE'S
U	23	1	PRINCE GEORGE'S
U	4	1	PRINCE GEORGE'S
F	0	3	PRINCE GEORGE'S
F	1	1	PRINCE GEORGE'S
F	10	2	PRINCE GEORGE'S
F	15	1	PRINCE GEORGE'S
F	16	1	PRINCE GEORGE'S
F	17	1	PRINCE GEORGE'S
F	18	1	PRINCE GEORGE'S
F	2	2	PRINCE GEORGE'S
F	20	1	PRINCE GEORGE'S
F	21	2	PRINCE GEORGE'S
F	23	1	PRINCE GEORGE'S
F	25	2	PRINCE GEORGE'S
F	29	1	PRINCE GEORGE'S
F	32	1	PRINCE GEORGE'S
F	33	1	PRINCE GEORGE'S
F	35	1	PRINCE GEORGE'S
F	36	1	PRINCE GEORGE'S
F	38	1	PRINCE GEORGE'S
F	39	1	PRINCE GEORGE'S
F	4	2	PRINCE GEORGE'S
F	47	2	PRINCE GEORGE'S
F	5	1	PRINCE GEORGE'S
F	55	1	PRINCE GEORGE'S
F	8	1	PRINCE GEORGE'S
M	0	3	PRINCE GEORGE'S
M	1	7	PRINCE GEORGE'S
M	11	1	PRINCE GEORGE'S
M	12	1	PRINCE GEORGE'S
M	15	2	PRINCE GEORGE'S
M	16	5	PRINCE GEORGE'S
M	17	1	PRINCE GEORGE'S
M	22	1	PRINCE GEORGE'S
M	23	1	PRINCE GEORGE'S
M	25	1	PRINCE GEORGE'S
M	26	2	PRINCE GEORGE'S
M	28	1	PRINCE GEORGE'S
M	3	2	PRINCE GEORGE'S
M	30	1	PRINCE GEORGE'S
M	35	1	PRINCE GEORGE'S
M	36	1	PRINCE GEORGE'S
M	4	1	PRINCE GEORGE'S
M	43	1	PRINCE GEORGE'S
M	5	1	PRINCE GEORGE'S
M	6	2	PRINCE GEORGE'S
M	60	1	PRINCE GEORGE'S
M	8	1	PRINCE GEORGE'S
M	13	1	SOMERSET
M	21	2	SOMERSET
F	22	1	UNKNOWN
M	4	1	WICOMICO
M	40	1	WICOMICO
F	25	1	WORCESTER
F	45	1	WORCESTER
F	55	1	WORCESTER
M	15	1	WORCESTER
M	18	1	WORCESTER
M	3	1	WORCESTER
INFLUENZA B VIRUS			
U	16	1	BALTIMORE CITY
F	37	1	BALTIMORE CITY
TOTAL		**330**	

VIRAL HEPATITIS

ORGANISM	# SPECIMENS	# POSITIVES	JURISDICTION
HEPATITIS A			
	1	0	BALTIMORE CITY
	1	0	CALVERT
	1	0	CARROLL
SUBTOTAL	**3**	**0**	
HEPATITIS B			
	52	0	ALLEGANY
	158	3	ANNE ARUNDEL
	46	2	BALTIMORE
	511	9	BALTIMORE CITY
	4	0	CALVERT
	1	0	CAROLINE
	11	0	CARROLL
	141	2	CECIL
	9	0	CHARLES
	70	1	FREDERICK
	20	0	GARRETT
	69	1	HARFORD
	29	0	HOWARD
	340	10	MONTGOMERY
	317	7	PRINCE GEORGE'S
	9	0	QUEEN ANNE'S
	2	0	SAINT MARY'S
	12	0	TALBOT
	43	0	WASHINGTON
	85	0	WICOMICO
SUBTOTAL	**1,929**	**35**	
HEPATITIS C			
	54	6	ALLEGANY
	226	47	ANNE ARUNDEL
	45	9	BALTIMORE
	158	39	BALTIMORE CITY
	6	0	CALVERT
	21	3	CARROLL
	80	10	CECIL
	10	2	CHARLES
	74	3	FREDERICK
	21	0	GARRETT
	28	0	HARFORD
	2	0	HOWARD
	32	1	MONTGOMERY
	155	7	PRINCE GEORGE'S
	11	0	QUEEN ANNE'S
	6	0	SAINT MARY'S
	1	0	SOMERSET
	11	0	TALBOT
	44	7	WASHINGTON
	9	1	WICOMICO
SUBTOTAL	**994**	**135**	
TOTALS	**2,926**	**170**	

RABIES

SOURCE	#	JURISDICTION
BAT	2	ANNE ARUNDEL
	1	CECIL
	4	MONTGOMERY
	1	TALBOT
FOX	1	FREDERICK
	1	MONTGOMERY
	1	SOMERSET
	1	WICOMICO
OPOSSUM	1	WORCESTER
RACCOON	1	CAROLINE
	1	CARROLL
	1	CECIL
	2	DORCHESTER
	1	FREDERICK
	1	HARFORD
	1	HOWARD
	4	MONTGOMERY
	2	SOMERSET
	1	TALBOT
	1	WICOMICO
	7	WORCESTER
SKUNK	1	BALTIMORE CITY
TOTAL POSITIVES	**37**	
TOTAL SPECIMENS	**527**	

CHLAMYDIOPHILIA PSITTACI
(CHLAMYDIA)

REPORTED QUARTERLY
NO REPORT THIS MONTH

CD4 FLOW CYTOMETRY WORKLOAD

REPORTED QUARTERLY
NO REPORT THIS MONTH

BLOOD LEAD

MARYLAND			
	I	<10	99
	IIA	10-14	11
	IIB	15-19	4
	III	20-44	4
	IV	45-69	0
	V	>69	1
TOTAL			**119**
WASHINGTON DC			
	I	<10	1
	IIA	10-14	0
	IIB	15-19	0
	III	20-44	0
	IV	45-69	0
	V	>69	0
TOTAL			**1**

NEWBORN & CHILDHOOD SCREENING

STATISTICS FOR JULY 2009

PRESUMPTIVE POSITIVES	
DISORDERS	**#**
PHENYLKETONURIA	2
MAPLE SYRUP URINE DISEASE	3
HOMOCYSTINURIA	10
TYROSINEMIA	4
ARGININEMIA	1
CITRULLINEMIA	0
GALACTOSEMIA	2
BIOTINIDASE DEFICIENCY	0
HYPOTHYROIDISM	89
HEMOGLOBIN -DISEASE	24
HEMOGLOBIN -BENIGN	515
CONGENITAL ADRENAL HYPERPLASIA (CAH)	37
CYSTIC FIBROSIS	5
FATTY ACID OXIDATIONS	8
ORGANIC ACIDEMIAS	8
ACYLCARNITINE - BORDERLINE	6
ACYLCARNITINE - OTHERS	0

MONTHLY TOTALS	
# OF SPECIMENS SCREENED	13,378
NUMBER OF TESTS	1,084,395
% UNSATISFACTORY SPECIMENS	2.1

YEAR-TO-DATE CONFIRMED CASES	
CONDITIONS	**# CONFIRMED**
MCAD	3
3MCC	1
SCAD	1
VLCAD	0
GA-I	0
IVA	1
PA	0
MAPLE SYRUP URINE DISEASE	0
PKU-CLINICALLY SIGNIFICANT VARIANT	0
CLINICALLY SIGNIFICANT VARIANT HYPERPHENYLALANINEMIA (NOT CLASSICAL PKU)	0
VARIANT HYPERPHENYLALANINEMIA (NOT CLINICALLY SIGNIFICANT)	0
CITRULINEMIA I (CIT-I)	1
GALACTOSEMIA-CLASSICAL GALT DEFICIENCY	1
GALACTOSEMIA - VARIANT	0
BIOTINIDASE DEFICIENCY	0
GALACTOSE EPIMERASE DEFICIENCY	0
PARTIAL BIOTINIDASE DEFICIENCY	0
CAH- CLASSICAL SALT WASTING	0
CAH-NON-CLASSICAL	0
HYPOTHYROIDISM - PRIMARY	11
OTHER HYPOTHYROIDISM	8
SECONFARY HYPOTHYROIDISM	1
SICKLE CELL DISEASE -SS	37
SICKLE CELL DISEASE -SC	24
SICKLE CELL DISEASE -SE	0
SICKLE CELL DISEASE - S BETA THALASSEMIA	0
CYSTIC FIBROSIS	8

ENVIRONMENTAL CHEMISTRY

SAMPLE TYPES	# NON-COMPLIANT	# TESTED
ASBESTOS		
AIR	0	0
BULK	2	26
AIR QUALITY		
$PM_{2.5}$	0	185
PM_{10}	0	0
RADIATION		
AIR/CHARCOAL FILTERS	0	62
MILK	0	3
WIPES	0	59
RAW WATER	0	6
VEGETATION	0	0
OTHER	0	2
DRINKING WATER		
METALS		
COMMUNITY	7	11
NON-COMMUNITY	2	8
PRIVATE WELLS	67	227
PESTICIDES & PCBs		
COMMUNITY	0	65
NON-COMMUNITY	0	0
PRIVATE WELLS	0	0
VOLATILE ORGANIC COMPOUNDS		
COMMUNITY	1	234
NON-COMMUNITY	0	62
PRIVATE WELLS	0	142
RADIATION		
COMMUNITY	3	48
NON-COMMUNITY	0	0
PRIVATE WELLS	0	14
INORGANICS		
COMMUNITY	0	9
NON-COMMUNITY	4	80
PRIVATE WELLS	2	158
FOOD CHEMISTRY		
SUSPECTED TAMPERING	0	0
MICROSCOPIC FILTH	0	0
LABELING	0	0
SURVEILLANCE	0	8
CHEMICAL CONTAMINATION	0	0
TOTAL	**88**	**1,409**

VIRAL LOAD SPECIMENS

HIV-1 RNA COPIES/ML	$<10^3$	10^3—10^4	10^4—10^5	$>10^5$	TOTALS
ALLEGANY	14	2	3	0	**19**
CECIL	0	0	0	1	**1**
FREDERICK	2	2	0	1	**5**
GARRETT	1	0	0	0	**1**
MONTGOMERY	95	18	15	4	**132**
PRINCE GEORGE'S	122	15	11	7	**155**
SOMERSET	1	0	0	0	**1**
WASHINGTON	5	0	2	0	**7**
WICOMICO	1	0	1	0	**2**
SUBTOTALS	241	37	32	13	**323**
DEPT. OF CORRECTIONS	18	6	6	3	**33**
TOTALS	**259**	**43**	**38**	**16**	**356**

HIV ANTIBODY SCREENING

SUBMITTER	TOTAL SPECIMENS	# EIA POSITIVE	% EIA POSITIVE	# WB POSITIVE	% WB POSITIVE
CORRECTIONAL INSTITUTIONS	107	3	2.80%	2	66.67%
FAMILY PLANNING (NON-GOVT)	86	1	1.16%	1	100.00%
HEALTH CENTERS (NON-GOVT)	654	57	8.72%	56	98.25%
HEALTH DEPT, NON-STD, FP	503	1	0.20%	0	0.00%
HEALTH DEPT, NON-STD, OB/GYN	32	0	0.00%	0	0.00%
HEALTH DEPT, NON-STD, OTHER	815	65	7.98%	58	89.23%
HEALTH DEPT, STD CLINICS	1,080	21	1.94%	16	76.19%
HOSPITAL, OTHER	138	7	5.07%	7	100.00%
HOSPITAL, PUBLIC	25	3	12.00%	3	100.00%
JUVENILE SERVICES	4	0	0.00%	0	0.00%
LABORATORIES (NON-HOSPITAL)	406	19	4.68%	10	52.63%
PEDIATRIC - CHILD HEALTH	7	0	0.00%	0	0.00%
PRIVATE PHYSICIANS	10	0	0.00%	0	0.00%
PRIVATE STUDENT HEALTH CTRS	13	0	0.00%	0	0.00%
PUBLIC STUDENT HEALTH CTRS	24	0	0.00%	0	0.00%
OTHER	1	0	0.00%	0	0.00%
TOTALS	**3,905**	**177**	**4.53%**	**153**	**86.44%**

MAILING LABEL

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