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CRITICAL LINK

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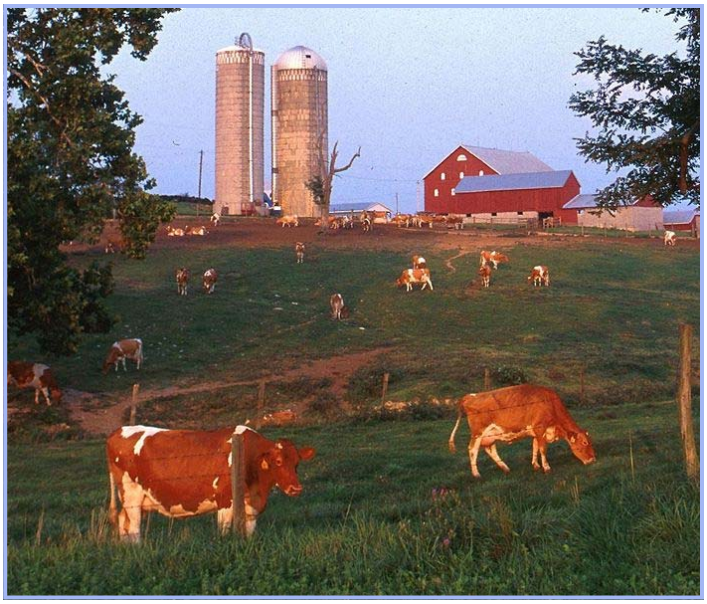
Antibiotic Testing of Bovine Milk

Many people are consumers of milk. Yet few of us are faced with the possibility of consuming antibiotic-contaminated milk. Antibiotic contamination of our milk supply could have serious consequences for consumers, processors, producers, and the economy. One of the goals of the federal government is that our milk supply is free of antibiotic residue. The quality of milk needs to be consistent for good business but most importantly to protect the health of the consumer.[1] To guarantee a good quality milk supply, the dairy industry must be supplied with quality tools and methods to meet this challenge.

Understanding Milk Production

The process of milk production begins with the cow in her first pregnancy. Shortly before calving, the cow will begin to produce milk. The initial milk is called colostrum and within 72 hours after calving, the colostrum is replaced by fresh milk. Fresh milk is the milk dairy farmers sell. This fresh milk production continues for approximately 305 days. Ninety days after giving birth, the cow will again be impregnated, and approximately 60 days before birthing, the cow will be allowed to dry (no milk production) in preparation for the next birth and lactating cycle. Generally, a cow will be cycled through five or six lactation cycles before being culled from the milking herd.[2]



Dairy cattle on a farm in Maryland. Photo source: Scott Bauer, USDA, ARS

Use of Antibiotics in Agriculture

The emergence of antibiotic resistance of human pathogens has been blamed in part on the antibiotic use in dairy farms and other agricultural productions.[3] An antibiotic used in high doses over a short period of time for treating sick animals is generally considered the method least

(Continued on page 2)

Inside this issue:

Antibiotic Testing of Bovine Milk *Page 1*

LABORATORY STATISTICS *Page 5*

(Continued from page 1)

likely to cause bacterial resistance. The prophylactic use of antibiotics is administering antibiotics used over long periods of time, with the whole herd being treated to prevent illness. Both applications could result in antibiotic residues (also known as milk inhibitors) in the consumers' milk supply, if the treatment regimens are not regulated and enforced.[3] It is very important that the recommendations for antibiotic dosage, duration of treatment, and the milk withhold/discard period be strictly followed.[4]

Studies conducted by the Food and Drug Administration (FDA) indicate that the major source of antibiotic residues in milk is due to the improper use of antibiotics in the control of mastitis. Mastitis is the inflammation of the mammary gland caused by microorganisms, usually bacteria that invade the udder, multiply, and produce toxins that are harmful to the mammary gland.[5]

A dairy cow with mastitis. Source: ACInvestigations.org

Milk from cows with mastitis cannot be added to the normal milk bulk tank and sold. Therefore, a farmer wants to cure those cows as quickly as possible. Numerous practices to control this problem include intramuscular and/or intravenous injection, oral administration, feed supplementation, and intramammary infusions of antibiotics. Other bovine health problems that require antimicrobial treatment can also lead to antibiotic residues.

In addition to extended use or excessive dosage of an antibiotic, suspected causes of antibiotic residues in milk may also result from:

- Improper treatment regimens because of incomplete record keeping
- Milker/producer "accidental" addition of tainted milk to the bulk tank
- Failure to follow scheduled antibiotic withdrawal times
- Prolonged drug clearance
- Misidentification of treated animals
- Multiple dosing
- Products not used according to label directions
- Withholding milk from treated udder quarters only
- Contaminated equipment
- Early calving or short dry period
- Purchase of treated cows
- Use of dry cow treatment on lactating cows

Antibiotics cleared for use in dairy cows include tetracycline, dihydrostreptomycin, oxytetracyline, sulfamethazine, and combiotic.[5] Five antibiotics approved and widely used for treating mastitis in dairy cows are beta-lactam antibiotics that can cause hypersensitivity reactions in some individuals. These five include penicillin, ampicillin, cephapirin, hetacillin (metabolized to ampicillin) and amoxicillin.[6] Milk is generally tested for the presence of beta-lactam antibiotics since they pose a great threat to humans.[6,7]

Health Risks for Humans

One of the potential health threats by exposure to antibiotic residues in milk is allergic reactions.[8,1] Allergic reactions range from skin rashes to life threatening anaphylactic shock. It only takes a small amount of these antibiotic residues to cause a reaction in susceptible individuals.

Another human health threat is the emergence of drug-resistant bacteria.[8,1] Bacterial resistance can be induced when bacteria are exposed to low-level antibiotics over a long or inconsistent period of time.[9] The inappropriate or prophylactic use of antimicrobial agents in animals must be minimized to ensure that antibiotic resistance does not develop in animal pathogens, and that humans are not exposed to the residual substances that could cause resistance in human pathogens. However, resistance to beta-lactams is increasing in human pathogens, and further exposure to these antibiotics will only compound the problem.[10] Fortunately, there are safeguards in place to reduce risks of exposure to antibiotic residues in milk.

Controlling Antibiotic Residues in Milk

To control antibiotic residues from entering the consumers' milk supply, the United States Public Health Service/ FDA, a division of the Department of Health and Human Services, has developed a policy, the "Pasteurized Milk Ordinance of 1978," which contains the standards for milk quality for the states, counties, and municipalities.[11] Another surveillance group, the FDA Center for Veterinary Medicine, helps prevent antibiotic residues by regulating the manufacture of drugs that are administered to food source animals.[12] The FDA also has a guidance plan,

(Continued on page 3)

(Continued from page 2)

Antibiotic Testing of Bovine Milk

"Guidance for Industry," that promotes drug sponsors to perform risk analysis on antibiotics used in food producing animals. This is to prove that the antibiotic will not create antimicrobial resistance that will affect human pathogens.[13] Additionally, preventative measures are practiced by the private dairies.

Above: Tanker truck picking up milk from a farm. Tank construction must comply with applicable 3-A Standards, the Pasteurized Milk Ordinance (PMO) and the Code of Maryland Regulations 10.15.06.

Below: A milk truck driver taking a sample of a farm's bulk tank. Source: Hauler's School, Louisiana Department of Health and Hospitals.

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The federal government and industry regulations require that a sample be collected from the farm's bulk tank prior to shipping to the processing plant. This sample is collected by the milk truck driver at every farm that puts milk into the truck's bulk tank.

The truck tanker is tested when it arrives at the processing plant, prior to the milk processing.[14] This sample to be tested is raw, commingled milk. This milk is regularly tested for beta-lactams.[15,14,16] Additionally, random testing for other antibiotics is performed. A certified laboratory with certified analysts will perform the testing on these samples. Prior to 1991, only one official test, the *Bacillus stearothermophilus* disk assay, was used for detecting antibiotic residues in milk. Today, other tests have been evaluated and accepted by the FDA for detecting antibiotic residues in milk.[11]

If a certified laboratory tests the truck bulk tank and gets an initial positive result with a screening test, the confirmatory test is performed. Confirmation testing will determine if the initial screening test is positive due to the presence of

(Continued on page 4)

(Continued from page 3)

a natural inhibitor or an antibiotic residue. Some cows can produce a natural inhibitor that will yield a positive result with a screening test. A confirmatory test involves heating the sample, which will destroy the natural inhibitor. The initial screening test indicates that there is a presumptive positive result for antibiotic residue. The confirmatory test verifies. If the presence of an antibiotic residue is confirmed, the tanker truck is then rejected and the milk is dumped.[6] Individual samples collected by the truck driver are tested to determine the violative farm. That farm is financially responsible for the loss of the tanker milk.[8,14] The preventative plans implemented and enforced in a cooperative effort between farmers, producers, and the government, has decreased the incident of antibiotic residue presence by 40 percent[3] and has created an environment of collaborative effort where each farm depends on its neighboring farms to ensure consistent milk quality.

The Western Maryland Regional Laboratory (WMRL) and Central Laboratory perform inhibitor testing on farm milk samples for governmental agencies in Maryland. The Central Laboratory uses Charm SL and Delvo P5 pack and the WMRL uses the SNAP Beta Lactam Test and Delvo P mini for testing milk samples. The Charm SL and SNAP are used for detecting beta lactam antibiotics. The Charm SL is based on a rapid, one-step assay system. The SNAP is an enzyme-linked, receptor–binding assay. Both tests detect penicillin G, amoxicillin, ampicillin, ceftiofur, and cephapirin residues in raw, commingled cow milk.

The Delvo P5 pack and Delvo P mini test for beta lactams and other inhibitors. The Delvo P tests are a microbial inhibition test for the detection of penicillin G, ampicillin, amoxicillin, and cepharin in raw commingled cow and goat milks. This test is based on the growth or inhibition of growth of *Bacillus stearothermophilus var. calidolactis* and its affect on a pH indicator.[9]

There has been an increase in public concern about regulatory agencies properly implementing plans to monitor and prevent antibiotic residues in milk.[8,16] Due to the precautionary measures taken by dairy farmers and the federal and state agencies, data indicates a decrease in antibacterial residues in milk.

By formulating standards and enforcing regulations, only good quality milk will reach market shelves. It is imperative that milk producers utilize all safety precautions and the government implement regulatory programs to improve the use of antibiotics and continue to build public confidence concerning the quality of milk. The concern of milk quality lies not only with the consumer but also with the dairymen, milk processors, government agencies, distributors, and veterinarians.[11] At the present time, although antibiotic residues do not appear to be a significant health risk, individual dairies, in partnership with regulatory agencies, must remain diligent to their investigative methods.

This article was written by JoAnne Flynn of the Western Maryland Regional Laboratory in Cumberland, Maryland.

References

[1] Quinn, C., Preventing Antibiotic Residues in Milk, *Farmnote, 1999:18*.

[2] Goff, Douglas, Dairy Science and Technology Education, University of Guelph, Canada, Dairy Science and Technology, Milk Production and Biosynthesis, http://www.foodsci.uoguelph.ca/dairyedu/biosynthesis.html (accessed 24 November 2005 at 2000 EST).

[3] Ruegg, P. L., Practical Food Safety Interventions for Dairy Production, *J Dairy Sci*. 2003; 86:E1-E9.

[4] Jones, G.M, Virginia Cooperative Extension, On-farm Tests for Drug Residues in Milk, Publication Number 404-401, May 1999.

[5] Schroeder, J.W., Extension Dairy Specialist, NDSU Extension Service, Mastitis Control Programs: Bovine Mastitis and Milking Management, http://www.ext.nodak.edu/extpubs/ansci/dairy/as1129w.htm, April 1997, AS-1129.

[6] Department of Health and Human Services, Food and Drug Administration, Center for Veterinary Medicine, Milk Monitoring with Antimicrobial Drug Tests, CMV Update, http://www.cfsan.fda.gov/~ear/MI96-1.html, January 25, 1996 (accessed 24 November 2005 at 2100 EST).

[7] Rushing, J.E., Wesen, D.P., Preventing Antibiotic Residues In Milk, North Carolina University, Department of Food Science, http://www.ces.ncsu.edu/depts/foodsci/ext/pubs/antibioticresidues.html, Food Safety, FSE95-2, January 1995.

[8] Bagley, C. V., Utah State University, Extension Veterinarian, Food Fact Safety Sheet: Drug Residues and Food Safety, call number AH/General/01, http://extension.usu.edu/files/agpubs/other01.pdf, July 1997

[9] Western Maryland Regional Laboratory, Certified Maryland Milk Testing Laboratory, Maryland Department of Health and Mental Hygiene, Reviewed Procedural Manual present in-use inhibitor testing methods, October 27, 2005.

[10] Holten, K. B., Onusko, E. M., Appropriate Prescribing of Oral Beta-Lactam Antibiotics, *American Family Physicians, 2000; 62.*

[11] Shearer, J.K., Bachman, K.C., and Boosinger J., University of Florida, Institute of Food and Agricultural Sciences, The Production of Quality Milk, http://edis.ifas.ufl.edu/DS112, 1992.

[12] Department of Health and Human Services, Food and Drug Administration, Center for Veterinary Medicine, http://www.fda.gov/cvm/aboutcvm.html, May 6, 2005.

[13] Department of Health and Human Services, Food and Drug Administration, FDA News, P03-85, http://www.fda.gov/bbs/topics/NEWS/2003/NEW00964.html, October 23, 2003.

[14] Eifert, M., Registered Maryland Milk Sanitarian, Maryland Department of Health and Mental Hygiene, Personal Interview, On-Farm and Industry Inhibitor Testing and Consequences of Positive Results, 1500 EST December 2, 2005 at Western Maryland Regional Laboratory.

[15] Department of Health and Human Services, Milk Safety Branch, Beta Lactam Test Methods For Use Under Appendix N and Section 6 Of The Grade "A" Pasteurized Milk Ordinance (PMO), coded memorandum M-a-85, Revision #10, March 10, 2004.

[16] Nawaz, M. S., et al. Human Health Impact and Regulatory Issues Involving Antimicrobial Resistance in the Food Animal Production Environment, U.S. Food and Drug Administration, *Regulatory Research Prospectives, July 2001, Volume 1, Issue 1*.

Laboratory Statistics

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

* 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*

REPORTED 7/01/08 - 7/31/08

ENTERIC BACTERIOLOGY

GENUS SEROVAR	SEX	AGE	#	JURISDICTION
CAMPYLOBACTER FETUS				
	M	77	1	BALTIMORE CITY
CAMPYLOBACTER JEJUNI				
	F	0	1	ALLEGANY
	M	0	2	ALLEGANY
	F	7	1	BALTIMORE
	F	1	1	BALTIMORE
	M	54	1	BALTIMORE
	F	57	1	BALTIMORE CITY
	F	38	1	CHARLES
	M	40	1	FREDERICK
	M	21	1	KENT
	M	76	1	MONTGOMERY
	F	58	1	OUT OF STATE
	M	20	1	OUT OF STATE
ESCHERICHIA COLI, SEROTYPE O157:H7				
	M	18	1	ANNE ARUNDEL
	U	8	1	ANNE ARUNDEL
	M	0	1	BALTIMORE
	U	35	1	BALTIMORE CITY
	F	71	1	HARFORD
	U	0	1	MONTGOMERY
ESCHERICHIA COLI, SEROTYPE O103:H2				
	F	0	1	BALTIMORE
	M	1	1	OUT OF STATE
	U	2	1	OUT OF STATE
SALMONELLA				
	M	91	1	FREDERICK
SALMONELLA ANATUM				
	F	0	1	BALTIMORE
SALMONELLA BAILDON				
	M	0	1	HARFORD
SALMONELLA BARDO				
	F	0	1	BALTIMORE
	M	0	1	BALTIMORE
SALMONELLA BERTA				
	F	56	1	KENT
SALMONELLA BRANDENBURG				
	F	0	2	BALTIMORE
SALMONELLA EALING				
	M	0	1	TALBOT
SALMONELLA ENTERITIDIS				
	U	0	1	ANNE ARUNDEL
	M	17	1	ANNE ARUNDEL
	F	0	3	BALTIMORE
	F	20	1	BALTIMORE
	F	3	1	BALTIMORE
	U	0	2	BALTIMORE CITY
	F	0	4	BALTIMORE CITY
	F	50	1	BALTIMORE CITY
	F	47	1	BALTIMORE CITY
	F	39	1	BALTIMORE CITY
	F	34	1	BALTIMORE CITY
	F	32	2	BALTIMORE CITY
	F	28	1	BALTIMORE CITY
	F	18	1	BALTIMORE CITY
	F	8	1	BALTIMORE CITY
	F	4	1	BALTIMORE CITY
	M	0	3	BALTIMORE CITY
	M	75	1	BALTIMORE CITY
	M	73	2	BALTIMORE CITY
	M	58	1	BALTIMORE CITY
	M	25	1	BALTIMORE CITY
	M	4	1	BALTIMORE CITY
	M	1	1	BALTIMORE CITY
	M	33	1	CALVERT
	F	40	1	CHARLES
	M	0	1	HARFORD
	F	0	2	MONTGOMERY
	M	5	1	MONTGOMERY
	U	53	1	OUT OF STATE
	U	22	1	OUT OF STATE
	U	13	1	OUT OF STATE
	U	3	1	OUT OF STATE
	U	3	1	OUT OF STATE
	U	0	1	OUT OF STATE
	F	38	1	OUT OF STATE
	F	33	1	OUT OF STATE
	M	25	1	OUT OF STATE
	M	10	1	OUT OF STATE
	M	52	1	WASHINGTON
SALMONELLA GIVE				
	F	0	1	BALTIMORE
SALMONELLA HADAR				
	U	3	1	OUT OF STATE
SALMONELLA HARTFORD				
	U	0	2	UNKNOWN
	F	0	1	WASHINGTON
SALMONELLA HEIDELBERG				
	U	28	1	OUT OF STATE
	M	73	1	TALBOT
	F	20	1	TALBOT
SALMONELLA INFANTIS				
	M	2	1	MONTGOMERY
	F	42	1	OUT OF STATE
SALMONELLA JAVIANA				
	M	3	1	BALTIMORE CITY
	U	1	1	OUT OF STATE
	U	1	1	OUT OF STATE
	M	0	1	WICOMICO
SALMONELLA LITCHFIELD				
	F	0	1	UNKNOWN
SALMONELLA MISSISSIPPI				
	U	0	1	ALLEGANY
SALMONELLA MONTEVIDEO				
	F	25	1	MONTGOMERY
SALMONELLA MUENCHEN				
	F	0	1	BALTIMORE
	M	0	1	BALTIMORE
	F	69	1	OUT OF STATE

SALMONELLA NEWPORT			
M	0	1	BALTIMORE
M	37	1	CARROLL
M	0	1	HARFORD
U	52	1	OUT OF STATE
U	0	1	OUT OF STATE
F	68	1	WICOMICO
M	3	1	WICOMICO
SALMONELLA ORANIENBURG			
M	0	2	BALTIMORE CITY
F	6	1	FREDERICK
F	6	1	OUT OF STATE
M	41	1	PRINCE GEORGE'S
SALMONELLA SAINTPAUL			
F	0	2	BALTIMORE
M	0	2	BALTIMORE
M	28	1	FREDERICK
U	42	1	OUT OF STATE
U	37	1	OUT OF STATE
U	31	1	OUT OF STATE
U	29	1	OUT OF STATE
U	28	1	OUT OF STATE
U	5	1	OUT OF STATE
U	3	1	OUT OF STATE
U	0	1	OUT OF STATE
U	25	1	OUT OF STATE
SALMONELLA SER 4,12:I:-			
M	21	1	ANNE ARUNDEL
F	85	1	BALTIMORE
M	40	1	FREDERICK
M	65	2	WICOMICO
SALMONELLA SER 4,5,12:I:-			
M	0	2	ANNE ARUNDEL
M	1	1	BALTIMORE CITY
U	14	1	OUT OF STATE
SALMONELLA TYPHI			
M	22	1	PRINCE GEORGE'S
SALMONELLA TYPHIMURIUM			
M	0	1	BALTIMORE
M	6	1	BALTIMORE CITY
M	1	1	BALTIMORE CITY
M	80	1	CHARLES
F	25	1	KENT
F	29	1	MONTGOMERY
M	44	1	MONTGOMERY
U	23	1	OUT OF STATE
U	0	1	OUT OF STATE
F	9	1	OUT OF STATE
M	66	1	TALBOT
F	10	1	WICOMICO
SALMONELLA TYPHIMURIUM VAR COPENHAGEN			
M	0	1	BALTIMORE CITY
M	3	1	BALTIMORE CITY
M	56	1	CALVERT
M	0	1	WICOMICO
SALMONELLA UNTYPEABLE			
F	73	1	BALTIMORE CITY
U	60	1	OUT OF STATE
SHIGELLA FLEXNERI II:3,4			
F	54	2	BALTIMORE CITY
M	25	1	BALTIMORE CITY
SHIGELLA FLEXNERI IV:3,4			
M	0	1	MONTGOMERY
SHIGELLA SONNEI			
F	17	1	BALTIMORE CITY
M	7	1	BALTIMORE CITY
M	37	1	OUT OF STATE
VIBRIO PARAHAEMOLYTICUS			
M	0	1	BALTIMORE CITY
F	14	1	CALVERT
TOTAL		**165**	

ISOLATES – THROAT CULTURES

COUNTY	GROUP A[1]	NON-GROUP A
ALLEGANY	0	2
FREDERICK	0	1
WICOMICO	0	1
WORCESTER	2	1
TOTAL	**2**	**5**

[1] *Streptococcus pyogenes*

BACTERIOLOGY IDENTIFICATIONS
Referrals

GENUS SPECIES SOURCE	#	JURISDICTION
CITROBACTER FREUNDII		
URINE	1	BALTIMORE CITY
ESCHERICHIA COLI		
TRACHEAL	1	WICOMICO
URINE	1	WICOMICO
WOUND	1	WICOMICO
KLEBSIELLA PNEUMONIAE		
UNKNOWN	2	WICOMICO
URINE	1	WICOMICO
STAPHYLOCOCCUS AUREUS		
UNKNOWN	1	WICOMICO
BLOOD	1	BALTIMORE CITY
OTHER	2	WICOMICO
SPUTUM	1	WICOMICO
URINE	2	WICOMICO
WOUND	1	WICOMICO
TOTAL	**15**	

ISOLATES – MISCELLANEOUS

GENUS SPECIES SOURCE	#	JURISDICTION
ACHROMOBACTER		
EAR	1	WASHINGTON
ACTINOMYCES ODONTOLYTICUS		
BLOOD	1	BALTIMORE CITY
BACILLUS SPECIES		
OTHER	1	CARROLL
ENTEROBACTER AEROGENES		
WOUND	1	MONTGOMERY
ENTEROBACTER CLOACAE		
WOUND	1	FREDERICK

ESCHERICHIA COLI		
WOUND	1	FREDERICK
GARDNERELLA VAGINALIS		
VAGINAL	1	BALTIMORE
INFLUENZAE HAEMOPHILUS		
BLOOD	1	BALTIMORE CITY
KLEBSIELLA OXYTOCA		
WOUND	1	FREDERICK
PROTEUS MIRABILIS		
OTHER	1	CARROLL
WOUND	1	FREDERICK
PSEUDOMONAS AERUGINOSA		
PENILE LESION	1	CECIL
WOUND	1	FREDERICK
PSEUDOMONAS PUTIDA		
WOUND	1	FREDERICK
SERRATIA MARCESCENS		
BLOOD	1	BALTIMORE CITY
STAPHYLOCOCCUS AUREUS		
VAGINAL	1	BALTIMORE
BLOOD	2	BALTIMORE CITY
CSF	1	BALTIMORE CITY
WOUND	1	BALTIMORE CITY
NASAL	2	CARROLL
OTHER	1	CARROLL
WOUND	3	CARROLL
PENIS	1	CECIL
OTHER	1	FREDERICK
WOUND	9	FREDERICK
WOUND	2	MONTGOMERY
STAPHYLOCOCCUS EPIDERMIDIS		
BLOOD	2	BALTIMORE CITY
WOUND	2	CARROLL
UNKNOWN	1	MONTGOMERY
STAPHYLOCOCCUS HAEMOLYTICUS		
BLOOD	1	BALTIMORE CITY
WOUND	1	FREDERICK
STAPHYLOCOCCUS HEMOLYTICUS		
WOUND	1	CARROLL
STREPTOCOCCUS ANGINOSUS		
BLOOD	1	BALTIMORE CITY
STREPTOCOCCUS BETA HEMOLYTIC GROUP A		
BLOOD	1	BALTIMORE CITY
STREPTOCOCCUS BETA HEMOLYTIC GROUP B		
VAGINAL	5	ANNE ARUNDEL
VAGINAL	6	HOWARD
UNKNOWN	1	PRINCE GEORGE'S
VAGINAL	24	PRINCE GEORGE'S
STREPTOCOCCUS MITIS		
BLOOD	1	BALTIMORE CITY
STREPTOCOCCUS VIRIDANS GROUP		
BLOOD	1	BALTIMORE CITY
TOTAL	**87**	

SEXUALLY TRANSMITTED DISEASES

GENUS SPECIES		
SEX	#	JURISDICTION
SYPHILIS SEROLOGY		
F	5	ANNE ARUNDEL
M	3	ANNE ARUNDEL
F	3	BALTIMORE
M	12	BALTIMORE
U	1	BALTIMORE
F	9	BALTIMORE CITY
M	31	BALTIMORE CITY
U	3	BALTIMORE CITY
M	1	CARROLL
F	2	CHARLES
M	2	CHARLES
M	1	DORCHESTER
M	2	FREDERICK
M	1	HARFORD
F	1	HOWARD
F	5	MONTGOMERY
M	16	MONTGOMERY
U	2	MONTGOMERY
F	19	PRINCE GEORGE'S
M	36	PRINCE GEORGE'S
M	1	SAINT MARY'S
M	1	TALBOT
F	2	WICOMICO
TOTAL	**159**	
CHLAMYDIA TRACHOMATIS		
F	2	ALLEGANY
M	1	ALLEGANY
F	9	ANNE ARUNDEL
M	12	ANNE ARUNDEL
M	11	BALTIMORE
U	2	BALTIMORE
F	6	BALTIMORE CITY
M	55	BALTIMORE CITY
U	4	BALTIMORE CITY
F	2	HARFORD
M	16	HARFORD
F	2	HOWARD
M	4	HOWARD
F	23	MONTGOMERY
M	60	MONTGOMERY
U	2	MONTGOMERY
F	6	PRINCE GEORGE'S
M	30	PRINCE GEORGE'S
M	7	SOMERSET
M	2	WASHINGTON
M	4	WICOMICO
TOTAL	**260**	
NEISSERIA GONORRHOEAE		
F	1	ANNE ARUNDEL
F	2	BALTIMORE
M	5	BALTIMORE
M	1	BALTIMORE CITY
F	2	CALVERT
M	1	CARROLL
F	1	CECIL
M	1	DORCHESTER
F	1	FREDERICK
F	2	HARFORD
M	1	HOWARD
M	1	KENT
F	2	MONTGOMERY
M	1	MONTGOMERY
F	8	PRINCE GEORGE'S
M	27	PRINCE GEORGE'S
F	2	SAINT MARY'S
M	3	SAINT MARY'S
F	2	WICOMICO
TOTAL	**64**	

PENICILLIN RESISTANT GONORRHEA STATISTICS

REPORTED QUARTERLY
NO REPORT THIS MONTH

MYCOBACTERIOLOGY

GENUS SPECIES	SEX	AGE	#	JURISDICTION
MYCOBACTERIUM ABSCESSUS				
	F	73	1	BALTIMORE
	F	71	1	BALTIMORE
	M	24	1	BALTIMORE CITY
	F	42	1	MONTGOMERY
	F	36	1	MONTGOMERY
	M	27	1	MONTGOMERY
MYCOBACTERIUM AVIUM COMPLEX				
	M	63	1	ALLEGANY
	M	70	1	ANNE ARUNDEL
	F	82	1	ANNE ARUNDEL
	F	82	1	BALTIMORE
	M	79	1	BALTIMORE
	F	62	1	BALTIMORE CITY
	F	41	1	BALTIMORE CITY
	F	83	1	BALTIMORE CITY
	F	37	1	BALTIMORE CITY
	F	41	1	BALTIMORE CITY
	M	49	1	BALTIMORE CITY
	M	35	1	BALTIMORE CITY
	M	40	1	BALTIMORE CITY
	M	75	1	BALTIMORE CITY
	M	70	1	FREDERICK
	M	77	1	FREDERICK
	M	81	1	FREDERICK
	M	66	1	FREDERICK
	M	69	1	FREDERICK
	F	70	1	HARFORD
	M	66	1	HOWARD
	F	52	1	MONTGOMERY
	M	48	1	PRINCE GEORGE'S
	M	48	1	PRINCE GEORGE'S
	F	51	1	PRINCE GEORGE'S
	F	75	1	TALBOT
	F	64	1	TALBOT
	M	68	1	WICOMICO
	F	77	1	WICOMICO
	M	85	1	WICOMICO
MYCOBACTERIUM CHELONAE				
	M	77	1	FREDERICK
	F	30	1	PRINCE GEORGE'S
	F	79	1	WICOMICO
MYCOBACTERIUM FORTUITUM				
	F	47	1	OUT OF STATE
	F	66	1	OUT OF STATE
MYCOBACTERIUM FORTUITUM COMPLEX				
	M	70	1	ANNE ARUNDEL
	F	38	1	PRINCE GEORGE'S
	M	24	1	PRINCE GEORGE'S
MYCOBACTERIUM GORDONAE				
	M	40	1	ALLEGANY
	M	79	1	ALLEGANY
	F	59	1	ALLEGANY
	M	59	1	ANNE ARUNDEL
	M	55	1	BALTIMORE CITY
	F	78	1	CALVERT
	M	56	1	FREDERICK
	F	59	1	MONTGOMERY
	M	84	1	MONTGOMERY
	M	32	1	PRINCE GEORGE'S
	F	29	1	PRINCE GEORGE'S
	M	80	1	TALBOT
	F	76	1	WICOMICO
MYCOBACTERIUM KANSASII				
	F	57	1	BALTIMORE
	M	48	1	BALTIMORE
	M	47	1	BALTIMORE CITY
	M	73	1	MONTGOMERY
MYCOBACTERIUM MARINUM				
	M	64	1	TALBOT
	U	0	1	UNKNOWN
MYCOBACTERIUM MUCOGENICUM				
	F	20	1	MONTGOMERY
	M	78	1	MONTGOMERY
	M	75	1	OUT OF STATE
MYCOBACTERIUM TUBERCULOSIS				
	M	51	1	BALTIMORE
	M	50	1	BALTIMORE
	M	27	1	BALTIMORE CITY
	M	25	1	MONTGOMERY
	F	30	1	MONTGOMERY
	M	34	1	MONTGOMERY
	M	13	1	OUT OF STATE
	M	26	1	PRINCE GEORGE'S
	M	40	1	PRINCE GEORGE'S
	M	28	1	PRINCE GEORGE'S
	M	34	1	PRINCE GEORGE'S
	F	59	1	PRINCE GEORGE'S
MYCOBACTERIUM TUBERCULOSIS COMPLEX				
	M	34	1	ANNE ARUNDEL
	M	50	1	BALTIMORE
	M	51	1	BALTIMORE
	M	45	1	BALTIMORE CITY
	M	56	1	BALTIMORE CITY
	M	75	1	BALTIMORE CITY
	U	36	1	BALTIMORE CITY
	M	31	1	BALTIMORE CITY
	M	20	1	CHARLES
	F	29	1	HOWARD
	M	69	1	MONTGOMERY
	F	33	1	MONTGOMERY
	F	47	1	MONTGOMERY
	F	52	1	MONTGOMERY
	M	51	1	MONTGOMERY
	M	26	1	MONTGOMERY
	M	40	1	MONTGOMERY
	M	78	1	MONTGOMERY
	M	21	1	OUT OF STATE
	M	0	1	OUT OF STATE
	F	25	1	OUT OF STATE
	F	32	1	PRINCE GEORGE'S
	F	59	1	PRINCE GEORGE'S
	M	20	1	PRINCE GEORGE'S
	M	43	1	PRINCE GEORGE'S
	M	26	1	PRINCE GEORGE'S
	F	33	1	PRINCE GEORGE'S
	M	28	1	PRINCE GEORGE'S
	M	29	1	PRINCE GEORGE'S
	M	65	1	SAINT MARYS
	F	37	1	WICOMICO
	F	37	1	WICOMICO
	M	58	1	WICOMICO
	M	58	1	WICOMICO

	F	20	1	WORCESTER
MYCOBACTERIUM XENOPI				
	F	45	1	BALTIMORE
	F	53	1	BALTIMORE CITY
	F	47	1	MONTGOMERY
NON-PHOTOCHROMOGENIC MYCOBACTERIA				
	F	36	1	HOWARD
OTHER RAPID GROWER, NOT M. FORTUITUM COMPLEX FOUND.				
	F	83	1	MONTGOMERY
PHOTOCHROMOGENIC MYCOBACTERIA				
	M	75	1	OUT OF STATE
RAPIDLY GROWING MYCOBACTERIA				
	F	54	1	HOWARD
SCOTOCHROMOGENIC MYCOBACTERIA				
	M	22	1	ANNE ARUNDEL
	F	38	1	HARFORD
TOTAL			**125**	

MYCOBACTERIUM SUSCEPTIBILITY RESULTS

DURING JULY, 2008, SUSCEPTIBILITY RESULTS ON
25 ISOLATES OF *M. TUBERCULOSIS* COMPLEX * WERE IDENTIFIED.

TOTAL: 3 DRUG RESISTANT STRAINS FOUND

1	MONTGOMERY	® to ISONIAZID and STREPTOMYCIN
1	MONTGOMERY	® to STREPTOMYCIN
1	PRINCE GEORGE'S	® to STREPTOMYCIN, ISONIAZID, RIFAMPIN, and ETHAMBUTOL

® RESISTANT

**Mycobacterium tuberculosis* complex consists of:

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

MYCOLOGY

GENUS SPECIES	SEX	AGE	#	JURISDICTION
ALTERNARIA SPECIES				
	F	77	1	ALLEGANY
ARTHRINIUM SPECIES				
	F	73	1	ANNE ARUNDEL
	M	29	1	MONTGOMERY
	M	8	1	BALTIMORE CITY
ASPERGILLUS FUMIGATUS				
	M	41	1	ALLEGANY
	M	37	1	ANNE ARUNDEL
	F	55	1	PRINCE GEORGE'S
	M	60	1	BALTIMORE CITY
	M	65	1	BALTIMORE CITY
ASPERGILLUS NIDULANS				
	U	0	1	ALLEGANY
	U	0	1	UNKNOWN
ASPERGILLUS NIGER				
	F	57	1	ANNE ARUNDEL
	F	47	1	TALBOT
	U	0	1	UNKNOWN
ASPERGILLUS OCHRACEUS				
	M	80	1	ALLEGANY
ASPERGILLUS VERSICOLOR				
	F	67	1	CECIL
	M	86	1	BALTIMORE CITY
BIPOLARIS SPECIES				
	F	60	1	MONTGOMERY
CANDIDA ALBICANS				
	F	54	1	ALLEGANY
	M	26	1	BALTIMORE
	M	0	1	CALVERT
	M	60	1	CALVERT
	M	65	1	CALVERT
	M	37	1	CECIL
	F	30	1	MONTGOMERY
	F	31	1	MONTGOMERY
	F	36	1	MONTGOMERY
	F	47	1	MONTGOMERY
	F	55	1	MONTGOMERY
	F	72	1	MONTGOMERY
	F	74	1	MONTGOMERY
	M	53	1	MONTGOMERY
	M	58	1	MONTGOMERY
	M	59	1	MONTGOMERY
	M	61	1	MONTGOMERY
	M	66	1	MONTGOMERY
	M	69	1	MONTGOMERY
	F	28	1	MONTGOMERY
	M	39	1	MONTGOMERY
	F	33	1	PRINCE GEORGE'S
	F	37	1	PRINCE GEORGE'S
	F	52	1	PRINCE GEORGE'S
	F	54	1	PRINCE GEORGE'S
	F	56	1	PRINCE GEORGE'S
	M	57	1	PRINCE GEORGE'S
	M	87	1	PRINCE GEORGE'S
	F	64	2	PRINCE GEORGE'S
	F	31	1	PRINCE GEORGE'S
	F	54	1	PRINCE GEORGE'S
	F	83	1	PRINCE GEORGE'S
	M	35	1	PRINCE GEORGE'S
	F	25	1	PRINCE GEORGE'S
	F	41	1	PRINCE GEORGE'S
	F	17	1	PRINCE GEORGE'S
	F	18	1	PRINCE GEORGE'S
	F	23	1	PRINCE GEORGE'S
	F	24	1	PRINCE GEORGE'S
	F	22	1	PRINCE GEORGE'S
	F	57	1	BALTIMORE CITY
	M	20	1	BALTIMORE CITY
	M	50	1	BALTIMORE CITY
	F	40	1	BALTIMORE CITY
	M	59	2	BALTIMORE CITY
	M	65	1	BALTIMORE CITY
CANDIDA GLABRATA				
	U	84	1	ANNE ARUNDEL
	F	76	1	MONTGOMERY
	M	72	1	PRINCE GEORGE'S
	F	31	1	PRINCE GEORGE'S
	M	53	1	PRINCE GEORGE'S
	U	0	1	UNKNOWN
CANDIDA KRUSEI				
	M	69	1	MONTGOMERY
CANDIDA LAMBICA				
	M	66	1	ANNE ARUNDEL
CANDIDA PARAPSILOSIS				
	M	59	1	BALTIMORE CITY

CANDIDA SPECIES				
	F	38	1	MONTGOMERY
	M	53	1	MONTGOMERY
CANDIDA TROPICALIS				
	F	79	1	PRINCE GEORGE'S
	M	65	1	BALTIMORE CITY
CRYPTOCOCCUS NEOFORMANS				
	M	43	1	PRINCE GEORGE'S
EPICOCCUM SPECIES				
	F	59	1	ALLEGANY
EXOPHIALA SPECIES				
	M	0	1	WICOMICO
FUSARIUM SPECIES				
	F	71	1	MONTGOMERY
	M	0	1	WICOMICO
	F	40	1	BALTIMORE CITY
GLIOCLADIUM SPECIES				
	M	11	1	ALLEGANY
HISTOPLASMA CAPSULATUM				
	M	56	1	CARROLL
MICROSPORUM GYPSEUM				
	U	0	1	UNKNOWN
MOULD				
	M	61	1	ALLEGANY
	M	63	1	ALLEGANY
	U	0	1	ANNE ARUNDEL
	F	46	1	BALTIMORE
	M	60	1	CALVERT
	M	66	1	MONTGOMERY
	M	55	1	BALTIMORE CITY
	F	52	1	BALTIMORE CITY
MYRIODONTIUM SPECIES				
	U	0	1	UNKNOWN
OCHROCONIS GALLOPAVA				
	F	60	1	BALTIMORE CITY
PAECILOMYCES VARIOTII				
	M	65	1	BALTIMORE
	F	70	1	BALTIMORE
PENICILLIUM SPECIES				
	F	55	1	MONTGOMERY
	M	53	1	PRINCE GEORGE'S
	F	60	1	TALBOT
	F	73	1	TALBOT
PHOMA SPECIES				
	F	31	1	PRINCE GEORGE'S
RHODOTORULA				
	F	69	1	ANNE ARUNDEL
SACCHAROMYCES CEREVISIAE				
	M	87	1	PRINCE GEORGE'S
SCOPULARIOPSIS BREVICAULIS				
	F	37	1	CARROLL
SCOPULARIOPSIS SPECIES				
	F	27	1	CALVERT
SPOROTHRIX SCHENKII				
	M	39	1	ANNE ARUNDEL
TRICHOPHYTON MENTAGROPHYTES				
	M	86	1	BALTIMORE CITY
TRICHOPHYTON RUBRUM				
	U	44	1	ALLEGANY
	M	58	1	BALTIMORE CITY
TRICHOPHYTON TONSURANS				
	F	2	1	MONTGOMERY
	M	5	1	TALBOT
	M	6	1	TALBOT
YEAST				
	F	41	1	BALTIMORE
TOTAL			**117**	

PARASITOLOGY

GENUS SPECIES	#	JURISDICTION
PROTOZOA		
BLASTOCYSTIS HOMINIS	4	PRINCE GEORGE'S
	1	MONTGOMERY
	2	PRINCE GEORGE'S
	2	MONTGOMERY
	2	PRINCE GEORGE'S
	1	WASHINGTON
	3	MONTGOMERY
	1	WASHINGTON
	2	FREDERICK
	1	HOWARD
	2	BALTIMORE CITY
	1	FREDERICK
DIENTAMEBA FRAGILIS	1	FREDERICK
ENDOLIMAX NANA	1	HOWARD
	4	MONTGOMERY
	1	PRINCE GEORGE'S
	5	HOWARD
ENTAMEBA COLI	2	PRINCE GEORGE'S
	2	MONTGOMERY
	3	PRINCE GEORGE'S
	1	MONTGOMERY
GIARDIA LAMBLIA	1	FREDERICK
	1	PRINCE GEORGE'S
	1	MONTGOMERY
	1	FREDERICK
IODAMEBA BÜTSCHLII	1	MONTGOMERY
	1	PRINCE GEORGE'S
	2	MONTGOMERY
	1	MONTGOMERY
SUBTOTAL	**51**	
HELMINTHS		
ENTEROBIUS VERMICULARIS	1	CARROLL
	2	SAINT MARY'S
	1	CARROLL
	4	WASHINGTON
	2	MONTGOMERY
SUBTOTAL	**10**	
TOTAL	**61**	

ARTHROPOD IDENTIFICATION

NONE

TICK IDENTIFICATION

NONE

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.

FOOD SAFETY

FOOD AND SHELLFISH MICROBIOLOGY

	# OF SAMPLES	NOTABLE PATHOGENS
FOOD	41	5 *SALMONELLA SP.*
		# STANDARDS EXCEEDED *
CRABMEAT	10	1 *LISTERIA INNOCUA* IN 2 CULTURES
		# STANDARDS EXCEEDED **
SHELLFISH	0	0
SHELLFISH GROWING WATERS	437	
ENVIRONMENTAL SAMPLES	24	
TOTAL	**512**	**6**

STANDARDS

* CRABMEAT-FRESH
ESCHERICHIA COLI = LESS THAN 36 MPN/100 GRAM
STANDARD PLATE COUNT = LESS THAN 100,000 PER GRAM

** SHELLFISH
FECAL COLIFORMS = LESS THAN 230 MPN/100 GRAM
STANDARD PLATE COUNT = LESS THAN 500,000 PER GRAM

WATER MICROBIOLOGY

	# TESTED	# NON-COMPLIANT
COMMUNITY	8	4
NON-COMMUNITY	647	189
TOTAL	**655**	**193**

VIRAL HEPATITIS

ORGANISM	# OF SPECIMENS	POSITIVES	JURISDICTION
HEPATITIS A			
	2	0	ANNE ARUNDEL
	5	0	BALTIMORE
	2	0	BALTIMORE CITY
	1	0	HARFORD
	1	0	MONTGOMERY
	1	0	PRINCE GEORGE'S
	1	0	WICOMICO
SUBTOTAL	13	0	
HEPATITIS B			
	50	1	ALLEGANY
	72	2	ANNE ARUNDEL
	73	4	BALTIMORE
	554	7	BALTIMORE CITY
	9	0	CALVERT
	40	0	CARROLL
	130	0	CECIL
	11	0	CHARLES
	1	0	DORCHESTER
	82	1	FREDERICK
	11	0	GARRETT
	59	0	HARFORD
	10	0	HOWARD
	346	8	MONTGOMERY
	363	10	PRINCE GEORGE'S
	2	0	QUEEN ANNE'S
	4	0	SOMERSET
	24	1	TALBOT
	3	0	UNKNOWN
	44	0	WASHINGTON
	125	0	WICOMICO
SUBTOTAL	**2013**	**34**	
HEPATITIS C			
	49	3	ALLEGANY
	89	35	ANNE ARUNDEL
	75	8	BALTIMORE
	242	73	BALTIMORE CITY
	12	0	CALVERT
	44	3	CARROLL
	78	7	CECIL

	12	2	CHARLES
	1	0	DORCHESTER
	97	2	FREDERICK
	10	0	GARRETT
	34	1	HARFORD
	1	0	HOWARD
	26	6	MONTGOMERY
	180	3	PRINCE GEORGE'S
	2	0	QUEEN ANNE'S
	2	0	SAINT MARY'S
	22	0	TALBOT
	1	0	UNKNOWN
	39	5	WASHINGTON
	22	2	WICOMICO
SUBTOTAL	**1,038**	**150**	
TOTALS	**3,064**	**184**	

RABIES

BAT	1	ALLEGANY
	1	ANNE ARUNDEL
	1	BALTIMORE
	1	FREDERICK
	1	MONTGOMERY
	1	BALTIMORE CITY
CAT	1	WASHINGTON
FOX	1	FREDERICK
	2	MONTGOMERY
	2	ST. MARY'S
	1	WORCESTER
RACCOON	1	ALLEGANY
	1	ANNE ARUNDEL
	1	BALTIMORE
	1	CAROLINE
	1	GARRETT
	1	HARFORD
	4	MONTGOMERY
	1	QUEEN ANNE'S
	3	ST. MARY'S
	2	TALBOT
	1	WORCESTER
SKUNK	1	CHARLES
	1	ST. MARY'S
TOTAL POSITIVES	**32**	
TOTAL SPECIMENS	**534**	

CHLAMYDOPHILIA (CHLAMYDIA) PSITTACI

REPORTED QUARTERLY
NO REPORT THIS MONTH

CD4 FLOW CYTOMETRY WORKLOAD

REPORTED QUARTERLY
NO REPORT THIS MONTH

NEWBORN & CHILDHOOD SCREENING

STATISTICS FOR JULY 2008

PRESUMPTIVE POSITIVES

DISORDERS	#
PHENYLKETONURIA	3
MAPLE SYRUP URINE DISEASE	4
HOMOCYSTINURIA	12
TYROSINEMIA	12
ARGININEMIA	1
CITRULLINEMIA	1
GALACTOSEMIA	0
BIOTINIDASE DEFICIENCY	2
HYPOTHYROIDISM	73
HEMOGLOBIN -DISEASE	11
HEMOGLOBIN -BENIGN	416
CONGENITAL ADRENAL HYPERPLASIA (CAH)	20
CYSTIC FIBROSIS	2
FATTY ACID OXIDATIONS	2
ORGANIC ACIDEMIAS	13
ACYLCARNITINE - BORDERLINE	5
ACYLCARNITINE - OTHERS	0

MONTHLY TOTALS

# OF SPECIMENS SCREENED	11,075
NUMBER OF TESTS	742,243
% OF UNSATISFACTORY SPECIMENS	2.5

YEAR-TO-DATE CONFIRMED CASES

CONDITIONS	# CONFIRMED
MCAD	2
3MCC	1
SCAD	0
VLCAD	0
GA-I	1
PA	1
MAPLE SYRUP URINE DISEASE	0
PKU- CLINICALLY SIGNIFICANT VARIANT	2
PKU- NOT CLINICALLY SIGNIFICANT VARIANT	1
GALACTOSEMIA- CLASSICAL GALT DEFICIENCY	2
GALACTOSEMIA - VARIANT	1
BIOTINIDASE DEFICIENCY	0
GALACTOSE EPIMERASE DEFICIENCY	0
PARTIAL BIOTINIDASE DEFICIENCY	0
CAH- CLASSICAL SALT WASTING	2
CAH-NON-CLASSICAL	0
HYPOTHYROIDISM - PRIMARY	8
OTHER HYPOTHYROIDISM	4
SECONDARY HYPOTHYROIDISM	1
SICKLE CELL DISEASE -SS	7
SICKLE CELL DISEASE -SE	1
SICKLE CELL DISEASE -SC	3
SICKLE CELL DISEASE -S BETA THALASSEMIA	4
CYSTIC FIBROSIS	3

ENVIRONMENTAL CHEMISTRY

SAMPLES	# NON-COMPLIANT	# TESTED
ASBESTOS		
AIR	0	0
BULK	3	15
AIR QUALITY		
$PM_{2.5}$	0	599
PM_{10}	0	0
RADIATION		
AIR/CHARCOAL FILTERS	0	74
MILK	0	4
WIPES	0	57
RAW WATER	0	10
VEGETATION	0	0
OTHER	0	0
DRINKING WATER		
METALS		
COMMUNITY	3	7
NON-COMMUNITY	2	4
PRIVATE WELLS	65	202
PESTICIDES & PCBs		
COMMUNITY	0	47
NON-COMMUNITY	0	20
PRIVATE WELLS	0	0
VOLATILE ORGANIC COMPOUNDS		
COMMUNITY	4	382
NON-COMMUNITY	0	135
PRIVATE WELLS	4	103
RADIATION		
COMMUNITY	7	74
NON-COMMUNITY	0	0
PRIVATE WELLS	3	11
INORGANICS		
COMMUNITY	0	12
NON-COMMUNITY	6	55
PRIVATE WELLS	6	236
FOOD CHEMISTRY		
SUSPECTED TAMPERING	0	0
MICROSCOPIC FILTH	0	0
LABELING	0	0
SURVEILLANCE	0	0
CHEMICAL CONTAMINATION	0	0
TOTAL	**103**	**2,047**

LEAD ENVIRONMENTAL

TEST	#	ELEV	BRL	UNSAT
TOTAL PAINT	**0**	**0**	**0**	**0**
TOTAL SOIL	**0**	**0**	**0**	**0**
DUST				
FLOOR	254	17	220	0
SILL	338	11	278	0
WELL	112	7	64	0
OTHER	22	2	19	0
TOTAL DUST	**726**	**37**	**581**	**0**
GRAND TOTAL	**726**	**37**	**581**	**0**

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	# TESTED
MARYLAND		
I	<10	107
IIA	10-14	5
IIB	15-19	1
III	20-44	9
IV	45-69	0
V	>69	0
TOTAL		**122**
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**

VIRAL LOAD SPECIMENS (JULY 2008)

HIV–1 RNA Copies/ml	$<10^3$	$10^3 – 10^4$	$10^4 – 10^5$	$>10^5$	Totals
ALLEGANY	16	3	1	1	21
CARROLL	3	1	0	0	4
FREDERICK	2	0	0	0	2
MONTGOMERY	99	18	10	6	133
PRINCE GEORGE'S	97	12	17	7	133
SOMERSET	1	0	0	0	1
WASHINGTON	4	2	2	0	8
WICOMICO	3	1	0	0	4
SUBTOTAL	**225**	**37**	**30**	**14**	**306**
DEPARTMENT OF CORRECTIONS	52	5	28	7	92
GRAND TOTAL	**277**	**42**	**58**	**21**	**398**

HIV ANTIBODY SCREENING – BLOOD (JULY 2008)

SPECIMEN SOURCES	TOTAL	POSITIVE EIA	%	POSITIVE WB	%
HEALTH DEPARTMENTS AND CLINICS	2,913	179	6.14%	170	94.97%
HOSPITALS	144	4	2.78%	4	100.00%
DETENTION CENTERS	324	5	1.54%	5	100.00%
PRIVATE PHYSICIANS	7	0	0.00%	0	0.00%
STUDENT HEALTH CLINICS	38	0	0.00%	0	0.00%
EMPLOYEE HEALTH CLINICS	12	0	0.00%	0	0.00%
AUTOPSIES	294	12	4.08%	8	66.67%
ORGAN/TISSUE DONORS	84	0	0.00%	0	0.00%
TOTAL	**3,816**	**200**	**5.24%**	**187**	**93.50%**

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