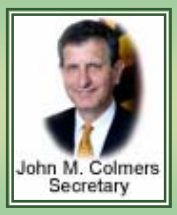

Maryland Department of
Health & Mental Hygiene
John M. Colmers, Secretary

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March 2008 Volume 12, Number 3

Antibiograms: 2005-2007

Testing a particular bacterial isolate against a number of antibiotics and compiling the resulting susceptibility data provides a microbial susceptibility pattern known as the isolate's antibiogram. Testing bacterial isolates for antibiotic susceptibility serves a number of important purposes. The most common reason to test clinically significant isolates of bacteria is to guide the selection of empirical therapy for various infectious diseases.

Another purpose for susceptibility testing of individual isolates is to assist in identifying the isolate. The antibiogram of an isolate can be compared to the antibiograms of previously identified isolates. When the identification and antibiogram are incompatible (e.g., a strain of Klebsiella that is susceptible to ampicillin), the culture of the isolate should be streaked and checked for purity. In such a case, where there may be a mixed culture or an anitbiogram, both the identification and the susceptibility should be repeated.

A third reason to conduct susceptibility testing is to compile and follow antibiograms over time. When the selective ecological pressure on antibiotics changes, the susceptibility patterns (antibiograms) of endemic or epidemic strains may also change. For public health this makes the

(Continued on page 3)

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Introduction to the Laboratories Administration's New Test Request Forms

The DHMH Laboratories Administration has designed new state of the art forms to be used with specimen/ sample submission: "Serological Testing" and "Infectious Agents: Culture/Detection." The new forms are presented on page 6 and page 7 (figures 1 and 2). These are for preview only. Do not copy or attempt to use these images.

On Wednesday, March 12, 2008, Sheila DeLaquil, the Laboratories Administration's Quality Assurance Officer, Denise Shackleford, Office of Laboratory Support Services, and A. J. Brown, Laboratory Specialist, conducted two teleconferences which introduced, trained, and answered questions on the new test request forms. The teleconferences covered clinic and specimen codes, required patient and specimen information, how to use the form to order tests, and how to use the bar codes included on the new forms.

Ms. DeLaquil will also be available to come to individual county health departments in Maryland to teach health care providers how to use the new forms.

For further information, or to schedule a visit for instruction, please contact Sheila DeLaquil at 410-767-5426, or email DelaquilS@dhmh.state.md.us.

Table 1. Antibiogram of select bacterial pathogens in Maryland susceptible to various antibiotics for CY 2005, Public Health Microbiology Division, Laboratories Administration, Maryland DHMH.

ORGANISMS \ DRUGS	AN	AMC	AM	AZM	CZ	FEP	CTE	TAZ	CTR	CIP	ESBL	GM	IMI	LEV	FD	TZP	TOB	SXT
*Acinetobacter baumannii (37)**	100	N/A	N/A	21	N/A	53	N/A	51	32	51	N/A	62	73	57	N/A	68	78	59
Acinetobacter lwoffii (11)	NT	N/A	N/A	45	N/A	55	N/A	64	73	73	N/A	100	100	73	N/A	73	100	100
Enterobacter aerogenes (16)	100	0	0	100	25	100	94	94	94	94	N/A	94	100	94	50	88	94	94
Enterobacter cloacae (25)	100	20	4	87	0	100	72	84	84	96	N/A	100	100	96	40	80	100	100
Escherichia coli (532)	100	82	55	89	95	96	100	98	98	90	1	92	100	90	99	98	94	75
Klebsiella oxytoca (8)	100	100	0	100	50	100	100	100	100	100	0	100	100	100	100	100	100	100
Klebsiella pneumoniae (71)	98	88	4	95	92	95	100	96	96	97	4	93	100	97	75	93	94	83
Proteus mirabilis (133)	99	100	65	100	66	100	100	100	100	79	N/A	92	100	80	6	99	87	71
Pseudomonas aeruginosa (94)	89	N/A	N/A	64	N/A	74	N/A	66	15	53	N/A	63	80	52	N/A	90	70	1
Serratia marcescens (49)	100	0	0	100	0	100	98	98	100	76	N/A	98	100	82	0	100	92	96

AN=Amikacin; AMC=Amoxicillin/CA; AM=Ampicillin;AZM=Aztreonam; CZ=Cefazolin;FEP=Cefipime;CTE=Cefotetan; TAZ=Ceftazidime; CTR=Ceftriaxone; CIP=Ciprofloxacin; ESBL=Extended Spectrum Beta Lactamase; GM=Gentamicin; IMI=Imipenem; LEV=Levofloxacin; FD=Nitrofurantoin; TZP=Pipercillin/Tazobactam; TOB=Tobramycin; SXT=Trimethoprim/Sulfa.

ORGANISMS \ DRUGS	AM	AMS	CZ	CIP	CC	E	GM	GM500	FD	OX	PEN	RIF	ST2000	TET	SXT	VA
Enterococcus faecalis (82)	100	N/A	N/A	43	N/A	N/A	N/A	50	100	N/A	99	N/A	55	35	N/A	98
Enterococcus faecium (21)	14	N/A	N/A	5	N/A	N/A	N/A	90	76	N/A	10	N/A	62	67	N/A	19
Staphylococcus aureus (209)	8	52	52	54	79	36	93	N/A	100	52	8	98	N/A	89	97	100
Staphylococcus epidermidis (15)	19	56	56	56	75	62	88	N/A	100	56	19	100	N/A	94	50	100

AM=Ampicillin; AMS=Ampicillin/Sulbactam; CZ=Cefazolin; E=Erythromycin; GM=Gentamicin; GM500=Gentamicin500;
FD=Nitrofurantoin; OX=Oxacillin; PEN=Penicillin; RIF=Rifampin; ST2000=Streptomycin2000; TET=Tetracycline; SXT=Trimethoprim/Sulfa; VA=Vancomycin.

** Total No. of Isolates* 1,303

Table 2. Antibiogram of select bacterial pathogens in Maryland susceptible to various antibiotics for CY 2005, Public Health Microbiology Division, Laboratories Administration, Maryland DHMH.

ORGANISMS \ DRUGS	AN	AMC	AM	AZM	CZ	FEP	CTE	TAZ	CTR	CIP	ESBL	GM	IMI	LEV	FD	TZP	TOB	SXT
*Acinetobacter baumannii (34)**	50	N/A	N/A	20	N/A	50	N/A	47	18	65	N/A	56	94	65	N/A	82	68	65
Acinetobacter lwoffii (6)	100	N/A	N/A	50	N/A	75	N/A	50	50	83	N/A	83	83	83	N/A	67	100	100
Enterobacter aerogenes (12)	100	0	0	NT	17	NT	100	100	100	100	N/A	100	100	100	58	100	100	100
Enterobacter cloacae (17)	100	0	0	100	0	100	100	100	100	100	N/A	100	100	100	38	100	100	100
Escherichia coli (558)	100	88	62	74	92	77	100	97	97	93	4	92	100	93	100	99	95	78
Klebsiella oxytoca (15)	100	100	0	100	87	100	100	100	100	100	0	100	100	100	100	100	100	93
Klebsiella pneumoniae (83)	95	93	1	85	89	85	100	89	89	90	8	89	100	90	84	88	90	73
Proteus mirabilis (107)	100	98	63	98	65	93	100	100	91	73	N/A	82	100	75	1	97	81	65
Pseudomonas aeruginosa (68)	100	N/A	N/A	59	N/A	77	N/A	75	9	54	N/A	59	90	53	N/A	87	72	3
Serratia marcescens (40)	100	0	10	97	0	100	97	98	98	82	N/A	98	100	92	0	100	85	100

AN=Amikacin; AMC=Amoxicillin/CA; AM=Ampicillin;AZM=Aztreonam; CZ=Cefazolin;FEP=Cefipime; CTE=Cefotetan; TAZ=Ceftazidime; CTR=Ceftriaxone; CIP=Ciprofloxacin; ESBL=Extended Spectrum Beta Lactamase; GM=Gentamicin; IMI=Imipenem; LEV=Levofloxacin; FD=Nitrofurantoin; TZP=Pipercillin/Tazobactam; TOB=Tobramycin; SXT=Trimethoprim/Sulfa.

ORGANISMS \ DRUGS	AM	AMS	CZ	CIP	CC	E	GM	GM500	FD	OX	PEN	RIF	ST2000	TET	SXT	VA
Enterococcus faecalis (59)	100	N/A	N/A	58	N/A	N/A	N/A	73	100	N/A	100	N/A	70	30	N/A	92
Enterococcus faecium (13)	13	N/A	N/A	0	N/A	N/A	N/A	69	23	N/A	15	N/A	77	77	N/A	38
Staphylococcus aureus (295)	7	40	49	40	86	28	98	N/A	100	40	7	100	N/A	91	97	100
Staphylococcus epidermidis (11)	0	45	73	45	73	45	82	N/A	100	45	0	100	N/A	82	55	100

AM=Ampicillin; AMS=Ampicillin/Sulbactam; CZ=Cefazolin; E=Erythromycin; GM=Gentamicin;GM500=Gentamicin500; FD=Nitrofurantoin; OX=Oxacillin; PEN=Penicillin;RIF=Rifampin; ST2000=Streptomycin2000; TET=Tetracycline; SXT=Trimethoprim/Sulfa;VA=Vancomycin.

** Total No. of Isolates* 1,318

Table 3. Antibiogram of select bacterial pathogens in Maryland susceptible to various antibiotics for CY 2005, Public Health Microbiology Division, Laboratories Administration, Maryland DHMH.

ORGANISMS \ DRUGS	AN	AMC	AM	AZM	CZ	FEP	CTE	TAZ	CTR	CIP	ESBL	GM	IMI	LEV	FD	TZP	TOB	SXT
*Acinetobacter baumannii (26)**	44	N/A	N/A	9	N/A	41	N/A	29	11	34	N/A	32	34	34	N/A	32	84	45
Acinetobacter lwoffii (10)	100	N/A	N/A	83	N/A	100	N/A	80	80	100	N/A	100	100	100	N/A	100	100	100
Enterobacter aerogenes (20)	100	0	0	100	15	100	94	100	100	100	N/A	100	100	100	35	100	100	100
Enterobacter cloacae (29)	100	15	0	94	7	100	100	97	97	100	N/A	100	100	100	62	97	100	100
Escherichia coli (654)	100	84	63	96	96	96	100	99	99	92	3	96	100	92	100	100	96	80
Klebsiella oxytoca (20)	100	93	0	100	80	100	100	100	100	100	0	100	100	100	95	100	100	100
Klebsiella pneumoniae (79)	96	93	3	80	91	90	100	92	92	92	0	96	99	92	68	94	94	92
Proteus mirabilis (68)	100	98	84	100	87	100	100	100	100	93	N/A	93	100	93	0	100	94	87
Pseudomonas aeruginosa (33)	50	N/A	N/A	67	N/A	88	N/A	83	11	80	N/A	80	83	77	N/A	94	83	6
Serratia marcescens (3)	100	0	0	100	100	100	100	100	100	100	N/A	100	100	100	0	100	100	100

AN=Amikacin; AMC=Amoxicillin/CA; AM=Ampicillin; AZM=Aztreonam; CZ=Cefazolin; FEP=Cefipime;CTE=Cefotetan; TAZ=Ceftazidime; CTR=Ceftriaxone; CIP=Ciprofloxacin; ESBL=Extended Spectrum Beta Lactamase; GM=Gentamicin; IMI=Imipenem; LEV=Levofloxacin; FD=Nitrofurantoin; TZP=Pipercillin/Tazobactam; TOB=Tobramycin; SXT=Trimethoprim/Sulfa.

ORGANISMS \ DRUGS	AM	AMS	CZ	CIP	CC	E	GM	GM500	FD	OX	PEN	RIF	ST2000	TET	SXT	VA
Enterococcus faecalis (90)	99	N/A	N/A	93	N/A	N/A	N/A	92	100	N/A	98	N/A	80	13	N/A	96
Enterococcus faecium (2)	0	N/A	N/A	0	N/A	N/A	N/A	100	0	N/A	0	N/A	50	100	N/A	0
Staphylococcus aureus (205)	4	49	49	50	84	29	98	N/A	100	49	4	97	N/A	84	95	100
Staphylococcus sp. Coag. Neg. (68)	7	21	21	90	90	49	99	N/A	100	21	9	100	N/A	72	90	100

AM=Ampicillin;AMS=Ampicillin/Sulbactam;CZ=Cefazolin;E=Erythromycin;GM=Gentamicin; GM500=Gentamicin500;FD=Nitrofurantoin;OX=Oxacillin;PEN=Penicillin;RIF=Rifampin; ST2000=Streptomycin2000;TET=Tetracycline;SXT=Trimethoprim/Sulfa;VA=Vancomycin.

**** Total No. of Isolates* 1,307**

(Continued from page 1)

Antibiograms: 2005 - 2007

antibiogram a very useful laboratory marker to identify and compare outbreak strains. In addition, antibiograms compiled over longer periods, thus antibiograms based on isolates obtained from a broad human population, can be used to determine if changes in antibiotic susceptibilities call for changes in empirical treatment strategies.

The antibiograms [2005-2007] presented in this article reflect susceptibility patterns of community-acquired microorganisms because most of the isolates tested by the Laboratories Administration come from specimens submitted by Maryland county and local health department clinics. Pathogens acquired in hospital settings are often less susceptible to the same antibiotics than those in community settings. Therefore, the antibiograms presented in this article may show higher rates of susceptibility for various microorganisms when compared to hospital antibiograms.

(Continued on page 4)

Table 4. Antibiogram of 69 *Neisseria gonorrhoeae* isolates for CY 2005 showing numbers of isolates resistant (R) and intermediate (I) to six antibiotics, Laboratories Administration, MD DHMH.

2005	Throat		Urethra		Rectum		Cervix		Other		Totals	
	I	R	I	R	I	R	I	R	I	R	I	R
Tetracycline	13	2	15	2	0	0	7	3	2	1	37	8
Ceftriaxone	0	0	0	0	0	0	0	0	0	0	0	0
Penicillin	14	1	24	0	1	0	15	0	3	1	57	2
Spectinomycin	0	0	0	0	0	0	0	0	0	0	0	0
Cefixime	0	0	0	0	0	0	0	0	0	0	0	0
Ciprofloxacin	0	0	0	0	0	0	0	0	0	0	0	0

Table 5. Antibiogram of 133 *Neisseria gonorrhoeae* isolates for CY 2006 showing numbers of isolates resistant (R) and intermediate (I) to six antibiotics, Laboratories Administration, MD DHMH.

2006	Throat		Urethra		Rectum		Cervix		Other		Totals	
	I	R	I	R	I	R	I	R	I	R	I	R
Tetracycline	6	2	35	6	3	0	42	9	4	1	90	18
Ceftriaxone	0	0	0	0	0	0	0	0	0	0	0	0
Penicillin	8	0	53	0	3	0	61	0	5	0	130	0
Spectinomycin	0	0	0	0	0	0	0	0	0	0	0	0
Cefixime	0	0	0	0	0	0	0	0	0	0	0	0
Ciprofloxacin	0	0	0	1	0	0	1	0	0	0	1	1

Table 6. Antibiogram of 256 *Neisseria gonorrhoeae* isolates for CY 2007 showing numbers of isolates resistant (R) and intermediate (I) to six antibiotics, Laboratories Administration, MD DHMH.

2007	Throat		Urethra		Rectum		Cervix		Other		Totals	
	I	R	I	R	I	R	I	R	I	R	I	R
Tetracycline	2	6	53	63	0	8	52	45	1	5	98	127
Ceftriaxone	0	0	0	0	0	0	0	0	0	0	0	0
Penicillin	8	0	100	5	8	0	88	1	5	0	209	6
Spectinomycin	0	0	0	0	0	0	0	0	0	0	0	0
Cefixime	0	0	0	0	0	0	0	0	0	0	0	0
Ciprofloxacin	0	0	0	5	0	0	0	2	0	0	0	7

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(Phone 410-767-6909)

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(Continued from page 3)

Antibiograms: 2005-2007

Antibiograms presented in this article are based on minimal inhibitory concentration (MIC) results generated by an automated system (Biomerieux Vitek, Hazelwood, MO). In some cases the Clinical Laboratory Standards Institute (formerly NCCLS) recommends that certain unusual susceptibility results for certain isolates be verified using another method.[1] Examples requiring verification include: isolates of *Enterobacter* species, *Serratia marcescens*, *Acinetobacter baumannii*, or *Pseudomonas aeruginosa* susceptible to ampicillin, cefazolin, or cephalothin; and Enterobacteriaceae resistant or intermediate to imipenem or multiple aminoglycosides. Where these unusual susceptibility or resistance patterns occurred, results were verified before being included in an antibiogram.

Isolates that required special susceptibility testing methods are not included in our antibiograms. Also, the data may have included a low number of duplicates due to software limitations. However, these factors would not effect the overall interpretation of the antibiogram pattern presented in this article.

Tables 1, 2, and 3 antibiograms compiled for calendar years 2005-2007 cover select Gram-negative microorganisms and Gram positive cocci.

Tables 4, 5, and 6 present antibiograms for the same years covering isolates of *Neisseria gonorrhoeae*. These tables show a marked decrease in susceptibility of *N. gonorrhoeae* to tetracycline.

Tables 7a, 7b, and 7c depict marked drops in susceptibility between 2006 and 2007 of *Acinetobacter baumannii* to six antibiotics. This organism has long been associated in the hospital environment as an opportunistic, multi-drug-resistant pathogen that is hard to treat.[2] Over the past four to five years, multi-drug resistant strains of this microorganism in Maryland have been responsible for several hospital outbreaks. This organism's capacity for long-term survival in the hospital environment make it difficult to be permanently eliminated.

Table 8 shows that susceptibility of *Enterobacter faecium* to vancomycin may be continuing to decrease. However, the small number of isolates available in 2007 prevents conclusive interpretation.

Table 9 shows an increase in ESBL (extended spectrum beta-Lactamase) producing *Klebsiella pneumonia.*

Table 10 depicts a marked drop in susceptibility of *Pseudomonas aeruginosa* to amikacin. We do not know if this is a single-year variation associated with a smaller number of isolates or represents a significant change.

(Continued on page 5)

Table 7a. Susceptibility in % of *Acinetobacter baumannii* to Aztreonam and Ceftriaxone for CYs 2005-2007,
Laboratories Administration, MD DHMH

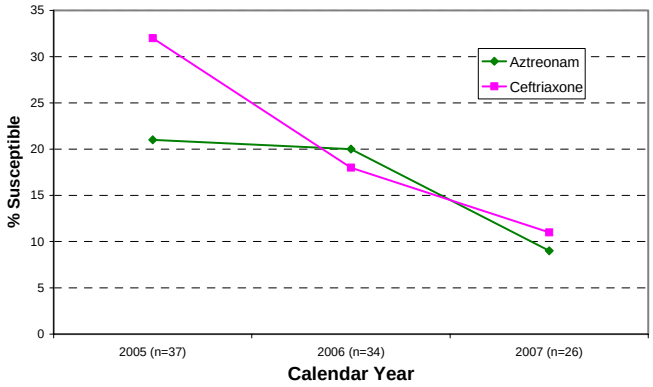


Table 7b. Susceptibility of *Acinetobacter baumannii* to Amikacin and Ceftazidime for CYs 2005-2007,
Laboratories Administration, MD DHMH

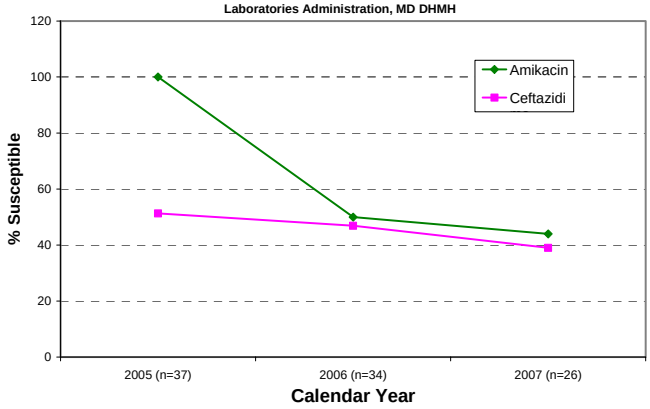


Table 7c. Susceptibility of *Acinetobacter baumannii* to Ciprofloxacin and Pipercillin/Tazobactam for CYs 2005-2007,
Laboratories Administration, MD DHMH

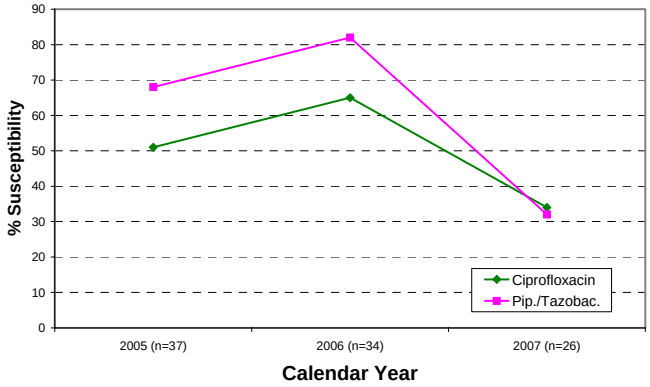
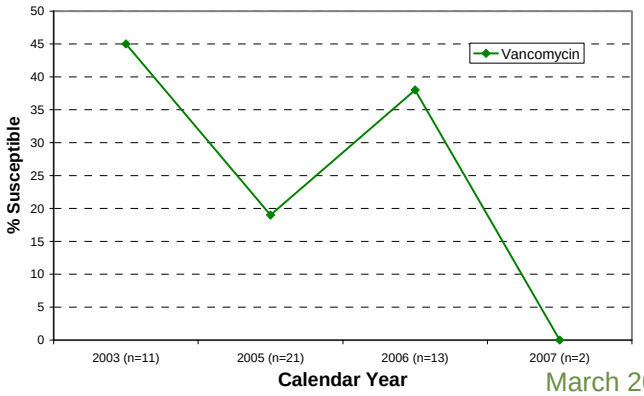


Table 8. Susceptibility of *Enterococcus faecium* to Vancomycin, 2003 and 2005-2007,
Laboratories Administration, MD DHMH



(Continued from page 4)

Antibiograms: 2005-2007

Table 11 shows that susceptibility of *Staphylococus aureus* to oxacillin (traditionally used to predict the results of other penicillinase-stable penicillins, including methicillin) has remained between 40% and 52% over the past three years. This data is in agreement with findings reported elsewhere[3] that methicillin-resistant *S. aureus* (MRSA) has now become a common community pathogen.

Table 12 shows decreases in susceptibility to tetracycline and ciprofloxacin by isolates of *Neisseria gonorrhoeae*. Over the last three years susceptibility to tetracycline drops from 35% in 2005 to 12% in 2007. Likewise, we have seen a drop in susceptibility to ciprofloxacin from 100% in 2005 to 97.3% in 2007.

This article was prepared by Damini Jain and Jack DeBoy.

References

[1] National Committee for Clinical Laboratory Standards. Performance Standards for Antimicrobial Susceptibility Testing; Fourteenth Informational Supplement. NCCLS document M100-S14. NCCLS, Wayne PA, 2004.

[2] Aygun, G., et al. 2002. J. Hosp. Infect., 52:259-262.

[3] Weber, J.T. 2005. *Clin. Infect. Dis.*, 41s (Suppl. 4:S269-272.)

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Table 9. *Klebsiella pneumoniae* producing Extended Spectrum Beta Lactamase, 2003 and 2005-2007,
Laboratories Administration, MD DHMH

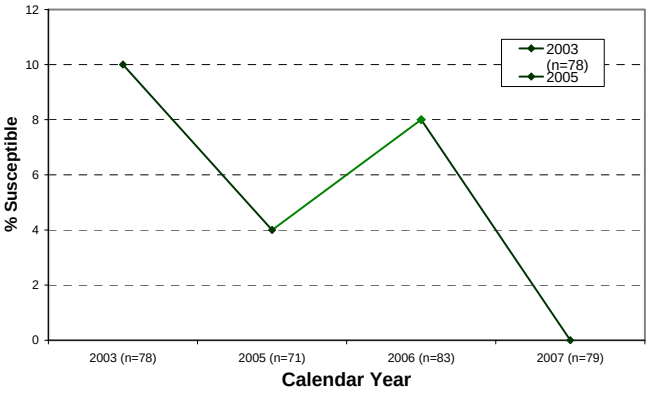


Table 10. Susceptibility of *Pseudomonas aeruginosa* to Amikacin, CYs 2003 and 2005-2007,
Laboratories Administration, MD DHMH

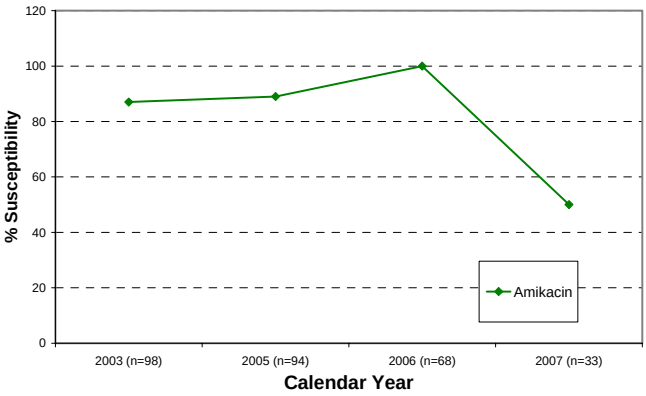


Table 11. Susceptibility of *Staphylococcus aureus* to Oxacillin, 2003 and 2005-2007,
Laboratories Administration, MD DHMH

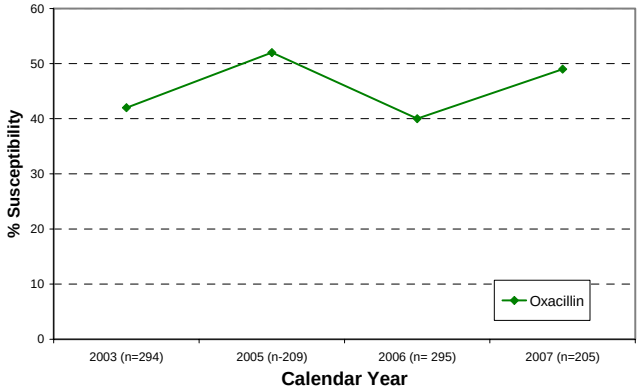
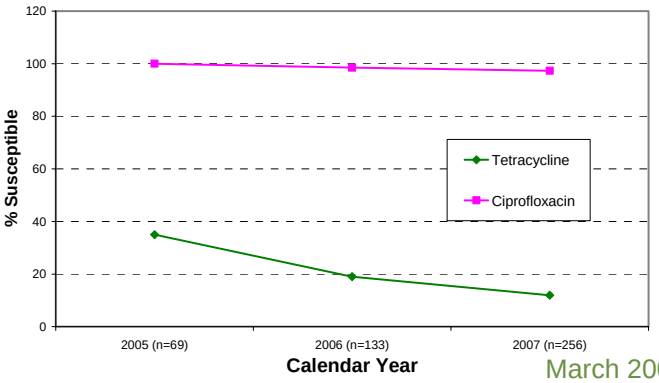


Table 12. Susceptibility of *Neisseria gonorrhoeae* to Tetracycline and Ciprofloxacin fro CYs 2005-2007, Laboratories Admin., MD DHMH



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Laboratories Administration MD DHMH
201 W. Preston St. • Baltimore, MD 21201
P.O. Box 2355 • Baltimore MD, 21203-2355
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Case # DOC# Outbreak # Submitter Lab #
Collect Date: Collect Time: ☐am ☐pm *Rabies Vaccination Dates:
Previous Test Done? ☐no ☐yes Name of Test_____ Date _____ ☐1st ☐2nd ☐3rd State Lab Number:
Name of Test_____ Date _____ ☐1st ☐2nd ☐3rd State Lab Number:
Onset Date: _____ Exposure Date: _____ ☐Clinical Illness:

SEROLOGY: SERUM (1ml/test) or WHOLE BLOOD (5ml) REQUIRED

☐ Arbovirus / West Nile Virus Panel
(Serum or CSF)
Provide dates of onset & collection (see above)
Required information, check all that apply:
DIAGNOSIS:☐aseptic meningitis ☐encephalitis
☐fever ☐other_____
SYMPTOMS: ☐headache ☐fever ☐stiff neck
☐altered mental status ☐muscle weakness
☐rash ☐other_____
ILLNESS FATAL? ☐yes ☐no
TRAVEL HISTORY (dates and places)
_____
IMMUNIZATIONS: Yellow fever? ☐yes ☐no
Flavivirus? ☐yes ☐no
IMMUNOCOMPROMISED? ☐yes ☐no

☐ Aspergillus
☐ Brucella
☐ Chlamydia (group antigen, IgG)
☐ Cryptococcal antigen
☐ Cytomegalovirus (CMV)
☐ Diphtheria anti-toxin
☐ *E. histolytica*
☐ Ehrlichia
☐ Epstein-Barr Virus (EBV)
☐ Hepatitis A Screen (IgM Ab only, acute infection)
Call lab (410-767-6169) prior to submitting
☐ Hepatitis B Screen (HBs antigen only)
Prenatal patient? ☐yes ☐no
☐ Hepatitis B Panel: (HBsAg, HBsAb)
Reflex Testing: HBsAb Neg ➢ HB Total Core
HBsAg Pos: ➢HB Core IgM, HBeAg, HBeAb
☐ Hepatitis B post vaccine
☐ Hepatitis C screen (HCV Ab only)

☐ Herpes Simplex Virus (HSV) Types 1&2
☐ Legionella
☐ Leptospira
☐ Lyme Disease
☐ MMRV Immunity Screen: [Measles (Rubeola), Mumps, Rubella, Varicella (Chickenpox) IgG Ab only]
☐ Mononucleosis - Infectious
☐ Mumps Immunity Screen
☐ Mycoplasma
☐ Rocky Mountain Spotted Fever (RMSF)
☐ Rabies (RFFIT) (*List vaccination dates above)
☐ Rubella Immunity Screen
☐ Rubeola (Measles) Immunity Screen
☐ Syphilis - Previously treated? ☐yes ☐no
☐ Tetanus anti-toxin
☐ Toxoplasma
☐ Tularemia
☐ Varicella Immunity Screen
☐ VDRL **(CSF only)**
☐ CDC test request
Call lab (410-767-6162) prior to submitting
Test requested: _____
☐ Other test request: _____
_____
_____
_____
_____
_____
Prior arrangements have been made with the following DHMH Labs Administration employee: _____

LAVENDER TOP TUBE REQUIRED

☐ Hemoglobin Disorders
Blood transfusion? (last 4 months) ☐yes ☐no
Prenatal screen? ☐yes ☐no
Father of baby screen? ☐yes ☐no
Guardian's name if patient is a minor: _____
Name of father of "at risk" baby:
_____

☐ Lead, Blood
Patient hospitalized? ☐yes ☐no
Chelation therapy? ☐yes ☐no
Guardian's name if patient is a minor:
_____
Patient's phone number:
_____

SPECIMEN CODE:
PLACE CODE IN BOX NEXT TO TEST
B Blood
C Cerebrospinal Fluid
L Lavender Top Tube
P Plasma
S Serum

770000001

DHMH 4677 Revised 1/08

ORIGINAL

770000001 770000001 770000001 770000001 770000001 770000001
770000001 770000001 770000001 770000001 770000001 770000001

SAMPLE

Figure 1: This is a sample copy of the front of the Laboratories Administration's new test request form 4677 "SEROLOGICAL TESTING." Do not reproduce.

61686

Laboratories Administration MD DHMH
201 W. Preston St. • Baltimore, MD 21201
P.O. Box 2355 • Baltimore MD, 21203-2355
410-767-6100 www.dhmh.state.md.us/labs
John M. DeBoy, Dr. P. H., Director

STATE LAB
Use Only

INFECTIOUS AGENTS: CULTURE/DETECTION

TYPE OR PRINT REQUIRED INFORMATION OR PLACE LABELS ON ALL FOUR COPIES

☐EH ☐FP ☐MTY/PN ☐NOD ☐STD ☐TB ☐CD ☐COR
Submitter
Address
City County
State Zip Code
Contact Name
Phone # Fax #

Patient SS# (last 4 digits):
Last Name ☐SR ☐JR ☐Other____
First Name M.I. Maiden:
Date of Birth (mm/dd/yyyy) / /
Address
City County
State Zip Code

Ethnicity: ☐Hispanic/Latino ☐Not Hispanic/Latino ☐Unknown
Sex: ☐Male ☐Female ☐Transgender
Race: ☐White ☐African American ☐Asian/Pacific ☐American Indian/Alaska Native ☐Multiracial ☐Not Specified ☐Other _____
Case # DOC# Outbreak # Submitter Lab #
Collect Date: Collect Time: ☐am ☐pm Onset Date:
Reason for Test: ☐Screening ☐Diagnosis ☐Contact ☐Test of Cure ☐2-3 Months Post Rx ☐Suspected Carrier ☐Isolate for ID ☐Release
Therapy/Drug Treatment: ☐No ☐Yes Therapy/Drug Type:_____ Therapy/Drug Date:_____

SPECIMEN CODE

BACTERIOLOGY/MYCOLOGY
- Bacterial Culture - Routine
- Additional specimen codes: _____ _____
- *Bordetella pertussis*
- Group A Strep
- Group B Strep Screen
- *C. difficile* Toxin
- Diphtheria
- Foodborne Pathogens (*B. cereus*, *C. perfringens*, *S. aureus*)
- Fungus Culture:
- Fungus Smear:
- Gonorrhea Culture:Incubated?☐yes ☐no
- Hrs. Incubated:___ Add'l specimen codes:_____
- MRSA (rule out)
- VRE (rule out)

ENTERIC INFECTIONS
- Campylobacter
- *E. coli* O157 typing
- Enteric Culture - Routine (Salmonella, Shigella, *E. coli* O157, Campylobacter)
- Salmonella typing
- Shigella typing
- *V. parahaemolyticus*
- Yersinia

REFERENCE MICROBIOLOGY
- ABC'S (BIDS) #_____
- Organism: _____
- Aerobic Actinomycete for ID
- Bacteria Referred Culture for ID
- Specify: _____
- Mold for ID
- Yeast for ID

SPECIMEN CODE

SPECIAL BACTERIOLOGY
- Legionella Culture
- Leptospira
- Mycoplasma

MYCOBACTERIOLOGY/AFB/TB
- AFB/TB Culture and Smear
- AFB/TB Referred Culture for ID
- AFB/TB Referred Culture-Sensitivities
- *M. tuberculosis* Referred Culture for Genotyping
- Nucleic Acid Amplification Test for *M. tuberculosis* Complex (MTD)

PARASITOLOGY
- Blood Parasites:_____
- Country visited outside US:_____
- Ova & Parasites:Immigrant?☐yes☐no
- Cryptosporidium
- Cyclospora/Isospora
- Microsporidium
- Pinworm

VIRUS/CHLAMYDIA
- Adenovirus*
- Arbovirus Panel (WNV, EEEV, SLEV)
- *Chlamydia trachomatis*
- Cytomegalovirus (CMV)
- Enterovirus (Inc. Echo & Coxsackie)
- Herpes Simplex Virus (Types 1 & 2)
- Influenza (Types A & B)*
- Parainfluenza (Types 1, 2 & 3)*
- Respiratory Syncytial Virus (RSV)*
- Varicella (VZV)

*MAY INCLUDE RESPIRATORY SCREENING PANEL.

Comments:

SPECIMEN CODE

RESTRICTED TESTS
Pre-approved submitters only
- *Chlamydia trachomatis*/GC NAAT
- *Chlamydia trachomatis* only/NAAT
- Norovirus ** (see comment on back)

OTHER TESTS FOR INFECTIOUS AGENTS
- Test name:_____

Prior arrangements have been made with the following DHMH Laboratories Administration employee:

SPECIMEN CODE:
PLACE CODE IN BOX NEXT TO TEST

B	Blood
BW	Bronchial Washing
CSF	Cerebrospinal Fluid
CX	Cervix/Endocervix
E	Eye
F	Feces
N	Nasopharynx/Nasal
P	Penis
R	Rectum
SP	Sputum
T	Throat
URE	Urethra
UR	Urine
V	Vagina
W	Wound
O	Other:

760000001

DHMH 4676 Revised 1/08

ORIGINAL

760000001 760000001 760000001 760000001 760000001 760000001
760000001 760000001 760000001 760000001 760000001 760000001

SAMPLE

Figure 2: This is a sample copy of the front of the Laboratories Administration's new test request form 4677 "INFECTIOUS AGENTS: CULTURE/DETECTION." Do not reproduce.

CRITICAL LINK

If you prefer to receive your issues of *Critical Link* electronically, send your address to:

criticallink@dhmh.state.md.us

It is also available on line at

http://www.dhmh.state.md.us/labs/html/critical-link.html

Damini Jain and Mohammed (Sid) Siddiqui examine a susceptibility plate in the Clinical Microbiology Section, part of the Division of Clinical Microbiology.

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 12/01/07 - 12/31/07

ENTERIC BACTERIOLOGY

GENUS SEROVAR	SEX	AGE	#	JURISDICTION
CAMPYLOBACTER COLI				
	M	44	1	PRINCE GEORGE'S
	M		1	BALTIMORE CITY
CAMPYLOBACTER JEJUNI				
	F	30	1	ALLEGANY
	F	19	1	BALTIMORE
	F	26	1	BALTIMORE
	F	52	1	CECIL
	M	41	1	MONTGOMERY
	F	86	1	BALTIMORE CITY
	M		1	BALTIMORE CITY
	F	63	1	OUT OF STATE
	M	11	1	OUT OF STATE
ESCHERICHIA COLI O157:H7				
	U	1	1	OUT OF STATE
SALMONELLA ANATUM				
	M	33	1	HARFORD
SALMONELLA BARDO				
	M		1	ANNE ARUNDEL
SALMONELLA ENTERITIDIS				
	F	38	1	ALLEGANY
	M		1	ANNE ARUNDEL
	M	34	1	CARROLL
	F	61	1	CHARLES
	F		1	BALTIMORE CITY
	F	3	1	BALTIMORE CITY
	M	2	1	BALTIMORE CITY
	M	48	1	BALTIMORE CITY
	M	98	1	BALTIMORE CITY
SALMONELLA JAVA				
	F	47	1	OUT OF STATE
SALMONELLA NEWPORT				
	F	36	1	ANNE ARUNDEL
	F	27	1	KENT
	F	24	1	MONTGOMERY
SALMONELLA TYPHIMURIUM VAR COPENHAGEN				
	M	15	1	HOWARD
	U	32	1	PRINCE GEORGE'S
SHIGELLA FLEXNERI I:4,6				
	M	70	1	BALTIMORE
SHIGELLA FLEXNERI VAR Y -:3,4				
	U	35	1	WICOMICO
SHIGELLA SONNEI				
	U	4	1	ANNE ARUNDEL
	M	11	1	CHARLES
	U	5	1	MONTGOMERY

M	66	1	WASHINGTON
M	35	1	OUT OF STATE
U	3	1	OUT OF STATE
U	76	1	OUT OF STATE
SHIGELLA UNTYPABLE.			
F	55	1	BALTIMORE CITY
TOTAL		**39**	

ISOLATES – THROAT CULTURES

COUNTY	GROUP A[1]	NON-GROUP A
ALLEGANY	1	9
ANNE ARUNDEL	1	0
MONTGOMERY	2	0
PRINCE GEORGE'S	1	0
SOMERSET	0	4
WICOMICO	2	6
BALTIMORE CITY	0	1
TOTAL	**7**	**20**

[1] *Streptococcus pyogenes*

BACTERIOLOGY IDENTIFICATIONS
Referrals

GENUS SPECIES		
SOURCE	#	JURISDICTION
ACINETOBACTER LWOFFII		
WOUND	1	ANNE ARUNDEL
SPUTUM	1	BALTIMORE CITY
BACILLUS SPECIES		
BLOOD	1	BALTIMORE CITY
DELFTIA ACIDOVORANS		
BLOOD	1	BALTIMORE
WOUND	1	WASHINGTON
ESCHERICHIA COLI		
URINE	5	WASHINGTON
STAPHYLOCOCCUS AUREUS		
BLOOD	4	WICOMICO
STAPHYLOCOCCUS HAEMOLYTICUS		
BLOOD	1	ANNE ARUNDEL
STAPHYLOCOCCUS SCIURI		
BLOOD	1	ANNE ARUNDEL
STENTROPHOMONAS MALTOPHILIA		
SPUTUM	1	WASHINGTON
STREPTOCOCCUS SPEICES (VIRIDANS GROUP)		
CYST	3	WASHINGTON
TOTAL	**20**	

ISOLATES – MISCELLANEOUS

GENUS SPECIES		
SOURCE	#	JURISDICTION
ACINETOBACTER LWOFFII		
TOE	1	FREDERICK
BACILLUS SPECIES		
BOIL	1	BALTIMORE
TOE	1	FREDERICK
SKIN	1	MONTGOMERY
CLOSTRIDIUM SPECIES		
TOE	1	FREDERICK
CORYNEBACTERIUM SPECIES		
BOIL	1	BALTIMORE
WOUND	1	FREDERICK
THUMB	1	MONTGOMERY
ENTEROBACTER CLOACAE		
TOE	1	FREDERICK
ENTEROCOCCUS FAECALIS		
WOUND	1	WASHINGTON
ESCHERICHIA COLI		
ABCESS	1	BALTIMORE CITY
LUNG	2	BALTIMORE CITY
SKIN	1	CECIL
VULVA	1	SOMERSET
GARDNERELLA VAGINALIS		
VAGINA	1	CECIL
VAGINA	1	CECIL
VAGINA	4	SOMERSET
KLEBSIELLA PNEUMONAIE		
WOUND	1	WASHINGTON
WOUND	1	ALLEGANY
MORGANELLA MORGANII		
FOOT	1	FREDERICK
STAPHYLOCOCCUS AUREUS		
TOE	1	FREDERICK
VAGINA	1	SOMERSET
STAPHYLOCOCCUS AUREUS BETA LACTAMASE		
WOUND	1	ANNE ARUNDEL
ABCESS	1	BALTIMORE
SKIN	1	BALTIMORE
VAGINA	1	BALTIMORE
WOUND	2	BALTIMORE
ABCESS	1	BALTIMORE CITY
LEG	1	BALTIMORE CITY
SKIN	1	BALTIMORE CITY
WOUND	1	CARROLL
FOOT	1	FREDERICK
TOE	1	FREDERICK
ABCESS	1	MONTGOMERY
CERVIX	1	PRINCE GEORGE'S
WOUND	1	WASHINGTON
STAPHYLOCOCCUS SPECIES CONGULASE NEGATIVE		
BOIL	1	BALTIMORE
LESION	1	BALTIMORE
ABCESS	1	BALTIMORE CITY
CSF	2	BALTIMORE CITY
SKIN	1	CARROLL
FOOT	1	FREDERICK
LEG	1	FREDERICK
TOE	2	FREDERICK
WOUND	3	FREDERICK
SKIN	1	MONTGOMERY
THUMB	1	MONTGOMERY
STENTROPHOMONAS MALTOPHILIA		
TOE	1	FREDERICK
STREPTOCOCCI ALPHA HEMOLYTIC		
LUNG	1	BALTIMORE CITY
STREPTOCOCCI BETA HEMOLYTIC GROUP B		
VAGINA	2	HOWARD
CERVIX	3	PRINCE GEORGE'S
VAGINA	5	PRINCE GEORGE'S
	1	PRINCE GEORGE'S
STREPTOCOCCI BETA HEMOLYTIC GROUP G		
WOUND	1	FREDERICK
STREPTOCOCCI BETA HEMOLYTIC NON-GROUPABLE		
CERVIX	1	ANNE ARUNDEL
TOTAL	**71**	

SEXUALLY TRANSMITTED DISEASES

GENUS SPECIES		
SEX	#	JURISDICTION
SYPHILIS SEROLOGY		
F	1	ALLEGANY
M	1	ALLEGANY
F	6	ANNE ARUNDEL
M	5	ANNE ARUNDEL
F	4	BALTIMORE

M	14	BALTIMORE
F	12	BALTIMORE CITY
M	21	BALTIMORE CITY
F	2	CHARLES
M	2	CHARLES
M	2	DORCHESTER
M	2	FREDERICK
F	2	MONTGOMERY
M	6	MONTGOMERY
U	3	MONTGOMERY
F	1	OUT OF STATE
F	5	PRINCE GEORGE'S
M	23	PRINCE GEORGE'S
M	2	WASHINGTON
F	4	WICOMICO
M	5	WICOMICO
F	1	WORCESTER
TOTAL	**124**	

NEISSERIA GONORRHEAE

F	1	ALLEGANY
F	4	ANNE ARUNDEL
F	5	BALTIMORE
M	2	BALTIMORE
M	1	CAROLINE
F	1	CECIL
M	2	CECIL
F	3	CHARLES
M	1	CHARLES
M	4	DORCHESTER
F	1	HARFORD
F	2	MONTGOMERY
F	9	PRINCE GEORGE'S
M	19	PRINCE GEORGE'S
M	2	ST. MARY'S
M	1	SOMERSET
F	1	WASHINGTON CO
M	2	WICOMICO
F	3	BALTIMORE CITY
M	3	BALTIMORE CITY
TOTAL	**67**	

CHLAMYDIA TRACHOMATIS

F	1	ALLEGANY
M	2	ALLEGANY
F	27	ANNE ARUNDEL
M	16	ANNE ARUNDEL
U	1	ANNE ARUNDEL
F	24	BALTIMORE
M	12	BALTIMORE
F	12	BALTIMORE CITY
M	19	BALTIMORE CITY
U	1	BALTIMORE CITY
F	2	CALVERT
M	1	CALVERT
F	2	CAROLINE
M	1	CAROLINE
F	2	CARROLL
M	2	CARROLL
F	3	CECIL
M	1	CECIL
F	10	CHARLES
M	5	CHARLES
F	3	DORCHESTER
M	6	DORCHESTER
F	7	FREDERICK
M	2	FREDERICK
M	1	GARRETT
F	4	HARFORD
M	7	HARFORD
F	5	HOWARD
M	1	HOWARD
F	1	KENT
M	1	KENT
F	24	MONTGOMERY
M	18	MONTGOMERY
U	1	MONTGOMERY
F	31	PRINCE GEORGE'S
M	31	PRINCE GEORGE'S
U	1	PRINCE GEORGE'S
F	3	QUEEN ANNE'S
F	1	SAINT MARY'S
M	3	SAINT MARY'S
F	2	SOMERSET
M	4	SOMERSET
F	2	TALBOT
M	1	TALBOT
F	4	WASHINGTON
M	3	WASHINGTON
F	18	WICOMICO
M	6	WICOMICO
U	1	WICOMICO
F	3	WORCESTER
TOTAL	339	

PENICILLIN RESISTANT GONORRHEA STATISTICS

REPORTED QUARTERLY
FOR OCTOBER 2007 THROUGH DECEMBER 2007

NO PENICILLIN RESISTANT GONORRHEA REPORTED

MYCOBACTERIOLOGY

GENUS SPECIES	SEX	AGE	#	JURISDICTION
MYCOBACTERIUM ABSCESSUS				
	M	87	1	MONTGOMERY
MYCOBACTERIUM AVIUM COMPLEX				
	M	65	1	BALTIMORE
	M	68	1	BALTIMORE
	M	82	1	BALTIMORE
	F	56	1	CARROLL
	F	51	1	FREDERICK
	F	74	1	FREDERICK
	F	82	1	FREDERICK
	F	86	1	FREDERICK
	M	50	1	FREDERICK
	M	48	1	MONTGOMERY
	F	24	1	WICOMICO
	F	83	1	BALTIMORE CITY
	M	45	1	BALTIMORE CITY
	F	41	1	BALTIMORE CITY
	M	66	1	BALTIMORE CITY
	M	48	1	BALTIMORE CITY
	M	42	1	BALTIMORE CITY
	F	55	1	BALTIMORE CITY
	F	53	1	BALTIMORE CITY
	M	50	1	BALTIMORE CITY
MYCOBACTERIUM CHELONAE				
	M	60	1	OUT OF STATE
	F	67	1	OUT OF STATE
MYCOBACTERIUM FORTUITUM				
	M	24	1	PRINCE GEORGE'S
	M	42	1	WICOMICO
	F	56	1	OUT OF STATE
MYCOBACTERIUM GORDONAE				
	F	61	1	BALTIMORE
	M	51	1	BALTIMORE
	M	82	1	BALTIMORE
	M	48	1	BALTIMORE
	F	46	1	FREDERICK
	M	50	1	FREDERICK
	M	49	1	MONTGOMERY
	F	28	1	PRINCE GEORGE'S
	F	30	1	PRINCE GEORGE'S
	M	45	1	PRINCE GEORGE'S

F	64	1	OUT OF STATE
MYCOBACTERIUM MARINUM			
F	37	1	ANNE ARUNDEL
M	56	1	ANNE ARUNDEL
M	45	1	BALTIMORE CITY
MYCOBACTERIUM TUBERCULOSIS			
M	66	1	ANNE ARUNDEL
M	32	1	CARROLL
M	25	1	HARFORD
F	72	1	MONTGOMERY
F	67	1	MONTGOMERY
F	27	1	MONTGOMERY
M	37	1	MONTGOMERY
F	30	1	MONTGOMERY
M	20	1	MONTGOMERY
M	26	1	PRINCE GEORGE'S
M	18	1	SOMERSET
M	93	1	WICOMICO
F	23	1	BALTIMORE CITY
F	59	1	BALTIMORE CITY
M	42	1	BALTIMORE CITY
F	27	1	BALTIMORE CITY
M	75	1	OUT OF STATE
M	38	1	OUT OF STATE
MYCOBACTERIUM TUBERCULOSIS COMPLEX			
F	27	1	BALTIMORE
M	74	1	BALTIMORE
M	37	1	CHARLES
F	28	1	HOWARD
M	31	1	MONTGOMERY
F	67	1	MONTGOMERY
M	24	1	MONTGOMERY
M	45	1	MONTGOMERY
F	27	1	MONTGOMERY
M	20	1	MONTGOMERY
M	51	1	MONTGOMERY
M	22	1	MONTGOMERY
M	25	1	PRINCE GEORGE'S
M	45	1	PRINCE GEORGE'S
M	26	1	PRINCE GEORGE'S
M	48	1	PRINCE GEORGE'S
M	93	1	WICOMICO
M	55	1	BALTIMORE CITY
F	22	1	OUT OF STATE
F	23	1	OUT OF STATE
M	22	1	OUT OF STATE
TOTAL		**79**	

MYCOBACTERIUM SUSCEPTIBILITY RESULTS

DURING DECEMBER, 2007, SUSCEPTIBILITY RESULTS ON 25 ISOLATES OF *M. TUBERCULOSIS* COMPLEX * WERE IDENTIFIED.

TOTAL: 8 DRUG RESISTANT STRAINS FOUND

#	COUNTY	DRUG
1[A]	BALTIMORE	® to PYRAZINAMIDE
1	CALVERT	® to STREPTOMYCIN
1	HOWARD	® to STREPTOMYCIN
2	MONTGOMERY	® to STREPTOMYCIN
1	MONTGOMERY	® to RIFAMPIN and RIFABUTIN
1	PRINCE GEORGE'S	® to ISONIAZID and STREPTOMYCIN
1	WASHINGTON DC	® to ISONIAZID

[A] Probable *M. bovis*

® 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
ABSIDIA SPECIES				
	M	66	1	ALLEGANY
	M	20	1	BALTIMORE CITY
ASPERGILLUS FLAVUS				
	U	0	1	ANNE ARUNDEL
	M	78	1	MONTGOMERY
ASPERGILLUS FUMIGATUS				
	U	0	1	ANNE ARUNDEL
	M	82	1	ANNE ARUNDEL
	M	89	1	ANNE ARUNDEL
	M	78	1	MONTGOMERY
	M	62	1	PRINCE GEORGE'S
	U	57	1	PRINCE GEORGE'S
	M	65	1	TALBOT
	F	66	1	BALTIMORE CITY
	M	64	1	BALTIMORE CITY
ASPERGILLUS NIGER				
	M	13	1	HARFORD
	F	48	1	MONTGOMERY
	F	77	1	MONTGOMERY
	M	60	1	TALBOT
	M	84	1	BALTIMORE CITY
AUREOBASIDIUM				
	U	0	1	WASHINGTON
CANDIDA ALBICANS				
	F	26	1	BALTIMORE
	F	17	1	CECIL
	F	37	1	FREDERICK
	F	30	1	FREDERICK
	U	43	1	MONTGOMERY
	F	48	1	MONTGOMERY
	F	59	1	MONTGOMERY
	F	79	1	MONTGOMERY
	F	83	1	MONTGOMERY
	M	44	1	MONTGOMERY
	M	54	1	MONTGOMERY
	M	83	1	MONTGOMERY
	F	44	1	PRINCE GEORGE'S
	F	57	1	PRINCE GEORGE'S
	F	67	1	PRINCE GEORGE'S
	U	36	1	PRINCE GEORGE'S
	U	42	1	PRINCE GEORGE'S
	F	17	1	PRINCE GEORGE'S
	F	19	1	PRINCE GEORGE'S
	F	18	1	PRINCE GEORGE'S
	F	19	1	PRINCE GEORGE'S
	U	0	1	SOMERSET
	U	18	1	SOMERSET
	F	19	1	SOMERSET
	F	20	1	SOMERSET
	F	21	1	SOMERSET
	F	22	1	SOMERSET
	M	28	1	BALTIMORE CITY
	F	48	1	BALTIMORE CITY
	M	55	1	BALTIMORE CITY
	M	58	1	BALTIMORE CITY
	M	59	1	BALTIMORE CITY
	M	60	1	BALTIMORE CITY
	M	65	1	BALTIMORE CITY
	M	68	1	BALTIMORE CITY
	F	23	1	BALTIMORE CITY
	M	60	1	BALTIMORE CITY
CANDIDA GLABRATA				
	U	30	1	BALTIMORE
	F	26	1	BALTIMORE
	F	59	1	CALVERT
	F	45	1	CECIL

F	48	1	MONTGOMERY
M	75	1	MONTGOMERY
U	42	1	PRINCE GEORGE'S
U	76	1	PRINCE GEORGE'S
M	30	1	PRINCE GEORGE'S
M	62	1	BALTIMORE CITY
M	68	1	BALTIMORE CITY
CANDIDA KRUSEI			
M	60	1	CALVERT
F	85	1	PRINCE GEORGE'S
CANDIDA PARAPSILOSIS			
F	32	1	MONTGOMERY
M	53	1	PRINCE GEORGE'S
M	75	1	BALTIMORE CITY
CANDIDA TROPICALIS			
U	65	1	PRINCE GEORGE'S
U	85	1	PRINCE GEORGE'S
M	68	1	BALTIMORE CITY
CHRYSOSPORIUM SPECIES			
M	72	1	MONTGOMERY
CLADOSPORIUM SPECIES			
F	20	1	ALLEGANY
U	0	1	WASHINGTON
CRYPTOCOCCUS LAURENTII			
M	48	1	BALTIMORE CITY
CRYPTOCOCCUS NEOFORMANS			
F	60	1	PRINCE GEORGE'S
M	55	1	WICOMICO
M	39	1	BALTIMORE CITY
M	53	1	BALTIMORE CITY
FUSARIUM SPECIES			
M	37	1	MONTGOMERY
M	56	1	TALBOT
M	74	1	TALBOT
HISTOPLASMA CAPSULATUM			
M	29	1	BALTIMORE CITY
METARHIZIUM SPECIES			
U	0	1	ANNE ARUNDEL
MICROSPORUM CANIS			
F	4	1	ALLEGANY
M	62	1	ALLEGANY
MOULD			
U	0	1	ANNE ARUNDEL
F	78	1	BALTIMORE
M	31	1	BALTIMORE
M	63	1	BALTIMORE CITY
PAECILOMYCES SPECIES			
F	67	1	PRINCE GEORGE'S
PENICILLIUM SPECIES			
F	44	1	ALLEGANY
M	62	1	ALLEGANY
U	0	1	ANNE ARUNDEL
M	79	1	ANNE ARUNDEL
M	68	1	CECIL
M	72	1	MONTGOMERY
M	0	1	BALTIMORE CITY
PESTALOTIA SPECIES			
M	31	1	CECIL
PITHOMYCES SPECIES			
U	0	1	WASHINGTON
RHINOCLADIELLA			
M	55	1	BALTIMORE
F	40	1	CALVERT
M	66	1	WICOMICO
RHODOTORULA			
M	0	1	BALTIMORE CITY
RHODOTORULA MUCILAGINOSA			
F	42	1	BALTIMORE
SACCHAROMYCES CEREVISIAE			
M	60	1	CALVERT
STOOL SPECIMEN UNACCEPTABLE FOR FUNGAL CULTURE.			
F	80	1	SAINT MARY'S
STREPTOMYCES SPECIES			
F	80	1	TALBOT
TRICHOPHYTON MENTAGROPHYTES			
M	55	1	CARROLL
TRICHOPHYTON RUBRUM			
F	52	1	MONTGOMERY
M	26	1	BALTIMORE CITY
TRICHOPHYTON TONSURANS			
F	5	1	BALTIMORE
M	6	1	BALTIMORE
F	3	1	MONTGOMERY
U	2	1	TALBOT
F	3	1	TALBOT
TRICHOSPORON INKIN			
F	21	1	CECIL
TOTAL		**121**	

PARASITOLOGY

GENUS SPECIES	#	JURISDICTION
PROTOZOA		
BLASTOCYSTIS HOMINIS	1	BALTIMORE CITY
	2	MONTGOMERY
	3	FREDERICK
	3	HOWARD
	3	PRINCE GEORGE'S
ENDOLIMAX NANA	1	FREDERICK
	1	HOWARD
	3	MONTGOMERY
	4	PRINCE GEORGE'S
ENTAMOEBA COLI	4	MONTGOMERY
	6	PRINCE GEORGE'S
ENTAMOEBA HARTMANNI	1	BALTIMORE CITY
	1	MONTGOMERY
	1	PRINCE GEORGE'S
GIARDIA LAMBLIA	1	MONTGOMERY
	2	HOWARD
IODAMOEBA BUTSCHLII	3	PRINCE GEORGE'S
HELMINTHS		
HOOKWORM	1	FREDERICK
	9	HOWARD
TRICHURIS TRICHIURA	9	HOWARD
TOTAL	**59**	

ARTHROPOD IDENTIFICATION

NONE

TICK IDENTIFICATION

NONE

WATER MICROBIOLOGY

	# TESTED	**# NON-COMPLIANT**
COMMUNITY	2	0
NON-COMMUNITY	148	34
TOTAL	**150**	**34**

FOOD SAFETY

FOOD AND SHELLFISH MICROBIOLOGY

	# OF SAMPLES	NOTABLE PATHOGENS
FOOD	13	0
		# STANDARDS EXCEEDED *
CRABMEAT	0	0
		# STANDARDS EXCEEDED **
SHELLFISH	0	0
SHELLFISH GROWING WATERS	172	
OTHER†	1	0
TOTAL	**186**	**0**

†**CLOSTRIDIUM** BOTULINUM TOXIN / TYPE B INFANT BOTULISM

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

VIRUS ISOLATION

ISOLATE	SEX	AGE	#	JURISDICTION
ADENOVIRUS				
	M	1	1	BALTIMORE CITY
SUBTOTAL			**1**	
COXSACKIE VIRUS B1				
	M	6	2	BALTIMORE CITY
SUBTOTAL			**2**	
HERPES SIMPLEX 1				
	M		1	BALTIMORE
	F	18	1	TALBOT
	M	21	1	WICOMICO
	F	17	1	BALTIMORE CITY
	F	19	1	BALTIMORE CITY
SUBTOTAL			**5**	
HERPES SIMPLEX 2				
	F	26	1	BALTIMORE
	F	41	1	BALTIMORE
	F	30	1	HARFORD
	F	21	1	PRINCE GEORGE'S
	U	17	1	PRINCE GEORGE'S
	M	33	1	ST. MARY'S
	F	19	1	SOMERSET
	F	18	1	BALTIMORE CITY
	F	34	1	BALTIMORE CITY
	M	24	1	BALTIMORE CITY
	M	25	1	BALTIMORE CITY
	U	22	1	BALTIMORE CITY
SUBTOTAL			**12**	
INFLUENZA A				
	F	22	1	BALTIMORE CITY
	M	0	1	BALTIMORE CITY
SUBTOTAL			**2**	
RESPIRATORY SYNCYTIAL VIRUS				
	F	3	1	BALTIMORE CITY
	F	1	1	BALTIMORE CITY
	M	0	3	BALTIMORE CITY
SUBTOTAL			**4**	
TOTAL			**26**	

VIRAL HEPATITIS

ORGANISM	# OF SPECIMENS	POSITIVES	JURISDICTION
HEPATITIS A			
	1	0	ANNE ARUNDEL
	3	0	BALTIMORE
	1	0	BALTIMORE CITY
	1	0	CAROLINE
	1	0	CARROLL
	1	0	HARFORD
	1	0	HOWARD
	1	0	KENT
	1	0	MONTGOMERY
	2	0	PRINCE GEORGES
	1	0	WASHINGTON
	1	0	WICOMICO
SUBTOTAL	**15**	**0**	
HEPATITIS B			
	57	0	ALLEGANY
	82	3	ANNE ARUNDEL
	63	13	BALTIMORE
	786	13	BALTIMORE CITY
	4	0	CALVERT
	2	0	CAROLINE
	43	2	CARROLL
	120	1	CECIL
	3	0	CHARLES
	83	1	FREDERICK
	8	0	GARRETT
	76	0	HARFORD
	41	0	HOWARD
	2	0	KENT
	223	4	MONTGOMERY
	1	0	OUT OF STATE
	353	9	PRINCE GEORGE'S
	1	1	QUEEN ANNES
	1	0	SAINT MARYS
	1	0	SOMERSET
	7	0	TALBOT
	2	0	UNKNOWN
	31	1	WASHINGTON
	108	2	WICOMICO
SUBTOTAL	**2,098**	**50**	
HEPATITIS C			
	53	3	ALLEGANY
	89	31	ANNE ARUNDEL
	53	2	BALTIMORE
	254	98	BALTIMORE CITY

	5	0	CALVERT
	1	0	CAROLINE
	41	9	CARROLL
	71	8	CECIL
	3	0	CHARLES
	80	1	FREDERICK
	10	0	GARRETT
	17	1	HARFORD
	10	1	HOWARD
	2	0	KENT
	22	3	MONTGOMERY
	1	0	OUT OF STATE
	151	1	PRINCE GEORGES
	1	0	SAINT MARYS
	2	0	SOMERSET
	6	0	TALBOT
	2	0	UNKNOWN
	12	0	WASHINGTON
	21	0	WICOMICO
SUBTOTAL	**907**	**158**	
TOTAL	**3,020**	**208**	

RABIES

SOURCE	#	JURISDICTION
BAT	1	BALTIMORE CITY
CAT	1	CECIL
FOX	1	DORCHESTER
	1	MONTGOMERY
RACCOON	1	BALTIMORE
	1	CECIL
	1	CHARLES
	1	DORCHESTER
	1	FREDERICK
	3	HARFORD
	3	MONTGOMERY
	1	PRINCE GEORGE'S
	1	QUEEN ANNE'S
	4	WASHINGTON
	1	WICOMICO
	1	BALTIMORE CITY
SKUNK	1	CAROLINE
	1	GARRETT
	1	PRINCE GEORGE'S
TOTAL POSITIVES	26	
TOTAL SPECIMENS	257	

CHLAMYDOPHILIA (CHLAMYDIA) PSITTACI

REPORTED QUARTERLY
FOR OCTOBER 2007 THROUGH DECEMBER 2007

2 SPECIMENS RECEIVED

CD4 FLOW CYTOMETRY WORKLOAD

REPORTED QUARTERLY
COMPARING OCTOBER 1, 2007 THROUGH DECEMBER 30, 2007 TO OCTOBER 1, 2006 THROUGH DECEMBER 30, 2006

CASE DEF.	LEVEL 1 <14%	LEVEL 2 28%-14%	LEVEL 3 ≥29%	TOTAL
10/07 - 12/07	268	535	308	**1,111**
10/06 - 12/06	268	513	274	**1,055**

NEWBORN & CHILDHOOD SCREENING

STATISTICS FOR DECEMBER 2007

PRESUMPTIVE POSITIVES	
DISORDERS	**#**
PHENYLKETONURIA	2
MAPLE SYRUP URINE DISEASE	6
HOMOCYSTINURIA	22
TYROSINEMIA	18
ARGININEMIA	5
CITRULLINEMIA	0
GALACTOSEMIA	1
BIOTINIDASE DEFICIENCY	0
HYPOTHYROIDISM	77
HEMOGLOBIN -DISEASE	26
HEMOGLOBIN -BENIGN	399
CONGENITAL ADRENAL HYPERPLASIA (CAH)	35
CYSTIC FIBROSIS	3
FATTY ACID OXIDATIONS	18
ORGANIC ACIDEMIAS	37
ACYLCARNITINE - BORDERLINE	9
ACYLCARNITINE - OTHERS	12

MONTHLY TOTALS	
# OF SPECIMENS SCREENED	10,300
NUMBER OF TESTS	805,507
% OF UNSATISFACTORY SPECIMENS	3.75

YEAR-TO-DATE CONFIRMED CASES	
CONDITIONS	**# CONFIRMED**
MCAD	2
3MCC	4
SCAD	3
VLCAD	2
GA-I	0
3-HYDROXY 3 METHYLGLUTTARYL COA LYASE DEFICIENCY (HMG)	1
METHYL MALONIC ACIDEMIA (MMA)	1
UNKNOWN ACYLCARNITINE DISORDER	1
MAPLE SYRUP URINE DISEASE	3
PKU- CLINICALLY SIGNIFICANT	3
VARIATANT HYPERPHENYLALANINEMIA - NOT CLINICALLY SIGNIFICANT	3
TRANSIENT TYROSINE ELEVATION	2
GALACTOSEMIA- CLASSICAL GALT DEFICIENCY	4
GALACTOSEMIA - VARIANT	1
BIOTINIDASE DEFICIENCY	2
GALACTOSE EPIMERASE DEFICIENCY	0
GALACTOSE TRANSFERASE DEFICIENCY- (GALT CLASSICAL)	1
PARTIAL BIOTINIDASE DEFICIENCY	2
CAH- CLASSICAL SALT WASTING	2
CAH-NON-CLASSICAL	0
HYPOTHYROIDISM - PRIMARY	16
HYPOTHYROIDISM - SECONDARY	7
OTHER HYPOTHYROIDISM	3
TRANSIENT HYPOTHRYOIDISM	1
SICKLE CELL DISEASE	82
OTHER HEMOGLOBINOPATHIES	12
SICKLE CELL DISEASE -S BETA THALASSEMIA	2
CYSTIC FIBROSIS	8

ENVIRONMENTAL CHEMISTRY

SAMPLES	# NON-COMPLIANT	# TESTED
ASBESTOS		
AIR	0	0
BULK	5	9
AIR QUALITY		
$PM_{2.5}$	0	75
PM_{10}	0	0
RADIATION		
AIR/CHARCOAL FILTERS	0	64
MILK	0	4
WIPES	0	87
RAW WATER	0	13
VEGETATION	0	0
OTHER	0	0
DRINKING WATER		
METALS		
COMMUNITY	8	12
NON-COMMUNITY	6	15
PRIVATE WELLS	62	229
PESTICIDES & PCBs		
COMMUNITY	0	106
NON-COMMUNITY	0	33
PRIVATE WELLS	0	0
VOLATILE ORGANIC COMPOUNDS		
COMMUNITY	1	142
NON-COMMUNITY	0	161
PRIVATE WELLS	0	145
RADIATION		
COMMUNITY	4	49
NON-COMMUNITY	0	0
PRIVATE WELLS	0	6
INORGANICS		
COMMUNITY	0	14
NON-COMMUNITY	3	28
PRIVATE WELLS	6	216
FOOD CHEMISTRY		
SUSPECTED TAMPERING	0	0
MICROSCOPIC FILTH	0	1
LABELING	0	0
SURVEILLANCE	0	0
CHEMICAL CONTAMINATION	0	4
TOTAL	**95**	**1,413**

LEAD ENVIRONMENTAL

TEST	#	ELEV	BRL	UNSAT
TOTAL PAINT	2	2	0	0
TOTAL SOIL	4	3	0	0
DUST				
FLOOR	400	30	342	2
SILL	599	29	511	0
WELL	330	22	227	0
OTHER	25	3	21	0
TOTAL DUST	1,354	84	1,101	2
TOTAL SAMPLES	**1,360**	**89**	**1,101**	**2**

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	162
	IIA	10-14	11
	IIB	15-19	13
	III	20-44	16
	IV	45-69	2
	V	>69	0
TOTAL			**204**
WASHINGTON DC			
	I	<10	46
	IIA	10-14	0
	IIB	15-19	0
	III	20-44	0
	IV	45-69	0
	V	>69	0
TOTAL			**46**

HIV ANTIBODY SCREENING – BLOOD (DECEMBER 2007)

SPECIMEN SOURCES	TOTAL	POSITIVE EIA	%	POSITIVE WB	%
HEALTH DEPARTMENTS AND CLINICS	2,027	84	4.14%	76	90.48%
HOSPITALS	115	10	8.70%	10	100.00%
DETENTION CENTERS	565	10	1.77%	9	90.00%
PRIVATE PHYSICIANS	11	0	0.00%	0	0.00%
STUDENT HEALTH CLINICS	261	2	0.77%	0	0.00%
EMPLOYEE HEALTH CLINICS	18	0	0.00%	0	0.00%
AUTOPSIES	289	13	4.50%	8	61.54%
ORGAN/TISSUE DONORS	59	1	1.69%	1	100.00%
TOTAL	**3,345**	**120**	**3.59%**	**104**	**86.67%**

VIRAL LOAD SPECIMENS (DECEMBER 2007)

HIV–1 RNA Copies/ml	$<10^3$	$10^3 – 10^4$	$10^4 – 10^5$	$>10^5$	Totals
ALLEGANY COUNTY HEALTH DEPT.	16	1	1	0	18
FREDERICK COUNTY HEALTH DEPT.	1	1	0	0	2
MONTGOMERY COUNTY HEALTH DEPT.	69	9	9	7	94
PRINCE GEORGE'S COUNTY HEALTH DEPT.	85	11	10	9	115
WASHINGTON COUNTY HEALTH DEPT.	3	1	1	0	5
WICOMICO COUNTY HEALTH DEPT.	2	0	1	0	3
SUBTOTAL	**176**	**23**	**22**	**16**	**237**
DEPARTMENT OF CORRECTIONS	75	33	40	14	162
GRAND TOTAL	**251**	**56**	**62**	**30**	**399**

MAILING LABEL

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