

BACTERIOLOGY PROFICIENCY TESTING PROGRAM

General Category

April 25, 2011

If you have any questions or comments, please contact either:

Dr. Wendy Archinal
Dr. Kimberlee Musser

Phone: (518) 474-4177

Email: bacti@wadsworth.org

TABLE OF CONTENTS

| | <u>Page</u> |
|---|-------------|
| General Information on the Bacteriology PT Program | 1 |
| Notes of Interest | 2 |
| Online Instructions and Worksheets | 2 |
| Bacteriology Questionnaires | 2 |
| EPTRS Reporting Tips | 2 |
| NYS Reportable Disease List | 2 |
| Samples for Remediation | 2 |
| Participating Laboratory Statistics - Grade Distribution | 3 |
| Answer Key | 4 |
| Referee Laboratory Results | 5 |
| Critique | |
| Specimen Number 1 | 6 |
| Specimen Number 2 | 8 |
| Specimen Number 3 | 9 |
| Specimen Number 4 | 11 |
| Antibiotic Susceptibility Results | 13 |
| Specimen Number 5 | 15 |
| <i>Chlamydia</i> – Direct Detection | 16 |
| Group A <i>Streptococcus</i> - Direct Detection | 17 |
| Summary of Results Reported by Participating Laboratories | 18 |

Bacteriology Proficiency Testing Program

GENERAL INFORMATION

The Bacteriology Proficiency Testing Program. Three proficiency testing events are given annually, each consisting of a minimum of five specimens. In order to successfully complete a test event, participating laboratories must achieve a score of 80% or greater. Unsuccessful performance in the testing program is defined as a score of less than 80% on two of three consecutive test events.

Authentication. The presence and identity of the organism(s) in each specimen must be confirmed by at least 80% of the referee or participating laboratories. Referee laboratories are selected from New York State participating laboratories (located throughout the State) with acceptable and reproducible levels of performance.

Grading System. Laboratories are to process proficiency test specimens in the same manner as patient specimens. Thus, laboratories are responsible for identifying test isolates to the same level as performed on patient isolates. If your laboratory speciates an organism on special request, then you must also speciate it in the proficiency test; consider speciation to have been requested on all reportable isolates. In addition, laboratories are not responsible for culturing any test samples from specimen sources which they do not process. Information regarding your laboratory's reporting protocol was provided to us in the questionnaire previously distributed to all laboratories. Any changes in reporting protocol must be received by our office prior to the mailout date for proficiency testing for that information to be considered in grading.

Our testing format is in compliance with Center for Medicare & Medicaid Services guidelines as specified in the regulations of CLIA '88. One-half of our samples require identification of all organisms present. The other half require that only the pathogenic organism(s) be reported. We recognize the potential for any organism to be pathogenic depending on the clinical condition of the patient. However, our samples are designed so that only well-established pathogens should be reported. Tests are graded in adherence to CMS guidelines, as specified in the regulations of CLIA '88. Each of the specimens receives a score as determined by the following formula:

$$(a + b)/(c + d + e) \times 100\%$$

a = # correct identifications

b = # correct antibiotic susceptibility results (if applicable)

c = # possible identifications

d = # possible antibiotic susceptibility results (if applicable)

e = # additional organisms reported

Grades for each sample are then averaged to determine the final grade for this testing event.

Disclaimer

The use of brand and/or trade names in this report does not constitute an endorsement of the products on the part of the Wadsworth Center or the New York State Department of Health.

Notes of Interest

Online Instructions and Worksheets

Hard copies of instructions and worksheets will no longer be mailed with proficiency test samples. Please follow the instructions that are provided with the samples to obtain the necessary paperwork. The instructions and worksheets will be available at the New York State Department of Health, Wadsworth Center website at <http://www.wadsworth.org/divisions/infdis/bacti/worksheets.htm>. Please bookmark this site to easily find the directions for the mailouts.

Bacteriology Questionnaires

Please update your questionnaire whenever there is a change in your laboratory's reporting policy. Proficiency test results are graded in accordance with information on the questionnaire so be certain that this information is accurate. If your questionnaire indicates that your laboratory reports an organism to the species level then you must report to the species level on the proficiency test to receive credit. If you need a copy of your questionnaire for review, please contact our office at 518-474-4177 or email us at bacti@wadsworth.org. **Grades will not be revised due to incorrect information on the questionnaire.**

EPTRS Reporting Tips

A few laboratories are reporting both an MIC and a zone diameter for susceptibility results. Please only report the appropriate number for the method you have indicated. Do not include a zone diameter if you report using an MIC method. When entering results into EPTRS if you can't find what you want in the drop down list you can select "other" and a text box appears for you to type in your response.

NYS Reportable Disease List

The New York State Reportable Disease List has been updated and can be found at: <http://www.wadsworth.org/labcert/regaffairs/clinical/commdiseaseguide.pdf>

Samples for Remediation

We maintain a limited number of samples for remediation purposes. If your laboratory had difficulty isolating or identifying the organisms in a sample you can contact us after the event for additional samples. Contact us either by email or phone and provide your PFI number and the sample(s) needed. They will be shipped to you within a week.

April 25, 2011 Test Event

Number of Participating Laboratories:

Receiving specimens 197
Returning results 197

| Grade Distribution | | |
|--------------------|--------|---------|
| Score | Number | Percent |
| 100% | 149 | 76 |
| 90 – 99% | 7 | 3 |
| 80 – 89% | 39 | 20 |
| <80% | 2 | 1 |

BACTERIOLOGY - GENERAL

April 25, 2011

ANSWER KEY

Specimen Number 1 - Stool (Pathogens only)

Vibrio furnissii

Specimen Number 2 – Blood (All organisms)

Haemophilus influenzae

Specimen Number 3 – Abscess - Aerobic / Anaerobic (Pathogens only)

Finegoldia magna

Specimen Number 4 – Urine (Pathogens only) and Antibiotic Susceptibility

Morganella morganii

Susceptibility to: imipenem - susceptible
piperacillin – susceptible

Specimen Number 5 – Genital (Pathogens only)

Neisseria gonorrhoeae

***Chlamydia* Direct Detection - Genital**

Negative for *Chlamydia trachomatis*

Group A *Streptococcus* Direct Antigen Detection - Throat

Positive for Group A *Streptococcus*

REFEREE LABORATORY RESULTS

| Specimen Number | Referee Laboratory Responses | Percent [*] |
|-----------------|-------------------------------------|----------------------|
| 1 | <i>Vibrio fluvialis</i> | 80 |
| | <i>Vibrio</i> species | 10 |
| | No pathogens isolated | 10 |
| <hr/> | | |
| 2 | <i>Haemophilus influenzae</i> | 100 |
| <hr/> | | |
| 3 | <i>Peptostreptococcus magnus</i> | 70 |
| | <i>Peptostreptococcus</i> species | 20 |
| | <i>Finegoldia magna</i> | 10 |
| | <i>Stenotrophomonas maltophilia</i> | 30 |
| <hr/> | | |
| 4 | <i>Morganella morganii</i> | 100 |
| | Piperacillin – susceptible | 100 |
| | Imipenem – susceptible | 63 |
| | Imipenem – intermediate | 25 |
| | Imipenem – resistant | 13 |
| <hr/> | | |
| 5 | <i>Neisseria gonorrhoeae</i> | 100 |

^{*}Based on responses of 10 referee laboratories

Specimen Number 1 - Stool (Pathogens Only)

This simulated stool specimen contained *Vibrio furnissii*. Strains of *Vibrio fluvialis* that produce gas have been grouped into the species of *Vibrio furnissii*. Most of the referee laboratories (80%) reported the pathogen as *Vibrio fluvialis*, as did 64% of the participants. An additional 10% of referee laboratories and 10% of participating laboratories reported *Vibrio* species.

Vibrio species are occasionally isolated in clinical laboratories and are more likely to be isolated in coastal areas. Species associated with human disease will grow on MacConkey agar and will appear as nonlactose fermenting colonies. *Vibrio vulnificus* is an exception in that it (and rare strains of other species) ferments lactose. Oxidase positive colonies on blood agar plates should also be ruled out for *Vibrio*, as well as *Aeromonas* and *Plesiomonas*. *Vibrio* will grow on other routine enteric media, but can't be differentiated from other sucrose positive organisms. When *Vibrio* is suspected, TCBS (Thiosulfate Citrate Bile Salts Sucrose Agar) plates should be used. These will inhibit normal flora and allow for preliminary differentiation of sucrose positive from sucrose negative *Vibrios*.

If your laboratory's test menu includes *Vibrio* and you did not isolate this organism you should re-evaluate your testing protocol. Most identification systems have *Vibrio* species in their databases and can identify *Vibrio*. They will occasionally identify an *Aeromonas* species as a *Vibrio*, but these can be differentiated by ability to grow in increased salt concentration.

Vibrio species should be referred to reference laboratories for confirmation, serology, speciation, and toxin testing where appropriate. The New York State and New York City "Reporting of Communicable Diseases" document requests that all *Vibrio* isolates from New York State patients be submitted to the appropriate public health laboratory for confirmation.

Methods of identification used by laboratories

| Result | Method | # Labs |
|-------------------------------------|---|--------|
| <i>Vibrio fluvialis</i> | bioMerieux Vitek 2 GN | 47 |
| | Siemens (Dade Behring) Negative Combo - any panel | 37 |
| | bioMerieux API 20E | 24 |
| | bioMerieux Vitek 1 GNI + | 12 |
| | BD Phoenix Gram Negative ID | 3 |
| | Conventional biochemicals | 2 |
| | BD BBL Crystal Enteric/Nonfermenter | 1 |
| <i>Vibrio furnissii</i> | 16s rDNA sequencing | 1 |
| <i>Vibrio fluvialis/furnissii</i> | 16s rDNA sequencing | 1 |
| No enteric pathogens isolated | | 30 |
| <i>Vibrio</i> species | bioMerieux Vitek 2 GN | 8 |
| | Siemens (Dade Behring) Negative Combo - any panel | 6 |
| | bioMerieux API 20E | 2 |
| | Other - bio Merieux Vitek 2 | 1 |
| | bioMerieux Vitek 1 GNI + | 1 |
| | Remel RapID NF Plus | 1 |
| <i>Vibrio vulnificus</i> | bioMerieux Vitek 2 GN | 2 |
| <i>Vibrio alginolyticus</i> | Siemens (Dade Behring) Negative Combo - any panel | 1 |
| <i>Aeromonas caviae</i> complex | bioMerieux API 20E | 1 |
| <i>Aeromonas hydrophila</i> complex | bioMerieux Vitek 2 GN | 1 |
| | bioMerieux API 20E | 1 |
| <i>Aeromonas</i> species | bioMerieux API 20NE | 1 |
| Specimen source not tested | | 13 |

| Additional organisms reported | | |
|--|-----------------------|---|
| <i>Morganella morganii</i> ss. <i>morganii</i> | bioMerieux Vitek 2 GN | 1 |
| <i>Enterobacter cloacae</i> | bioMerieux Vitek 2 GN | 1 |

Specimen Number 2 – Blood (All Organisms)

This simulated blood specimen contained *Haemophilus influenzae*. This organism was authenticated by 100% of the referee laboratories and 93% of the participants that processed this sample.

Methods of identification used by laboratories

| Result | Method | # Labs |
|---------------------------------------|---------------------------------------|-----------------------|
| <i>Haemophilus influenzae</i> | Remel RapID NH | 63 |
| | Conventional biochemicals | 33 |
| | bioMerieux API NH | 27 |
| | Siemens (Dade Behring) MicroScan HNID | 24 |
| | bioMerieux Vitek 2 NH | 24 |
| | bioMerieux Vitek 1 NHI | 6 |
| | Polymerase chain reaction | 1 |
| | BD BBL Crystal Neisseria/Haemophilus | 1 |
| | 16s rDNA sequencing | 1 |
| | BD BBL Haemophilus ID Quad | 1 |
| | <i>Haemophilus influenzae</i> b | bioMerieux Vitek 2 NH |
| Siemens (Dade Behring) MicroScan HNID | | 1 |
| <i>Haemophilus</i> species | Satellite test | 1 |
| | Remel RapID NH | 1 |
| | Not given | 1 |
| Specimen source not tested | | 10 |

Specimen Number 3 – Abscess - Aerobic/Anaerobic (All Organisms)

This simulated abscess specimen was to be cultured both aerobically and anaerobically. It contained *Fingoldia magna*. *Fingoldia magna* was previously known as *Peptostreptococcus magnus*. It primarily causes soft tissue infections. Eighty percent of referee laboratories reported this organism as either *F. magna* or *P. magnus* and 20% reported *Peptostreptococcus* species. Additionally, 80% of participating laboratories reported either *F. magna* or *P. magnus* with 15% reporting *Peptostreptococcus* species.

There was no aerobic organism in this sample. However, since almost 23% of the participating laboratories reported a gram negative bacillus, primarily *Stenotrophomonas maltophilia* and *Sphingomonas paucimobilis* we did not deduct credit for reporting a gram negative bacillus in this sample. Upon further investigation, both in our laboratory and at the manufacturer's laboratory, we were able to isolate a gram negative contaminant growing in very small numbers.

Number 3 - Methods of identification used by laboratories

| Result | Method | # Labs |
|-----------------------------------|---|---------------|
| <i>Fingoldia magna</i> | bioMerieux Vitek 2 GP | 1 |
| | Conventional biochemicals | 1 |
| | bioMerieux Vitek 2 ANC | 2 |
| | 16s rDNA sequencing | 1 |
| | bioMerieux API 20A | 1 |
| <i>Peptostreptococcus magnus</i> | Remel RapID ANA II | 80 |
| | bioMerieux Vitek 2 ANC | 25 |
| | Siemens (Dade Behring) MicroScan Rapid Anaerobe | 14 |
| | bioMerieux Vitek 1 ANI | 7 |
| | bioMerieux API 20A | 7 |
| | bioMerieux API Rapid ID 32A | 3 |
| | 16s rDNA sequencing | 2 |
| | BD BBL Crystal Anaerobe | 1 |
| <i>Peptostreptococcus</i> species | Remel RapID ANA II | 11 |
| | Conventional biochemicals | 7 |
| | bioMerieux Vitek 2 ANC | 5 |
| | bioMerieux API 20A | 3 |
| | Siemens (Dade Behring) MicroScan Rapid Anaerobe | 1 |
| <i>Peptostreptococcus</i> group | bioMerieux API 20A | 1 |
| Anaerobic gram positive cocci | Conventional biochemicals | 9 |
| | bioMerieux API 20A | 1 |
| <i>Peptostreptococcus micros</i> | Remel RapID ANA II | 1 |
| No anaerobic organisms | | 3 |
| Anaerobes not cultured | | 7 |
| Specimen source not tested | | 3 |

| Gram negative bacilli reported | | |
|---|---|----|
| <i>Stenotrophomonas maltophilia</i> | Siemens (Dade Behring) Negative Combo - any panel | 13 |
| | bioMerieux API 20E | 5 |
| | bioMerieux Vitek 1 GNI + | 3 |
| | bioMerieux API 20NE | 2 |
| | Remel RapID NF Plus | 1 |
| | BD Phoenix Gram Negative ID | 1 |
| | 16s rDNA sequencing | 1 |
| | Conventional biochemicals | 1 |
| <i>Sphingomonas paucimobilis</i> | bioMerieux Vitek 2 GN | 7 |
| | bioMerieux Vitek 2 Compact | 1 |
| <i>Burkholderia cepacia</i> complex | bioMerieux Vitek 2 GN | 1 |
| | Siemens (Dade Behring) Negative Combo - any panel | 1 |
| | bioMerieux API 20E | 1 |
| <i>Enterobacter cloacae</i> | Siemens (Dade Behring) Negative Combo - any panel | 1 |
| <i>Morganella morganii</i> | Siemens (Dade Behring) Negative Combo - any panel | 1 |
| <i>Chryseobacterium meningosepticum</i> | Siemens (Dade Behring) Negative Combo - any panel | 2 |
| <i>Pseudomonas</i> species | bioMerieux API 20E | 1 |
| | bioMerieux Vitek 2 GN | 1 |
| Aerobic Gram Negative Rods | Conventional biochemicals | 1 |

| Additional organisms reported | | |
|--------------------------------------|---------------------------|---|
| <i>Staphylococcus aureus</i> | Conventional biochemicals | 1 |
| <i>Staphylococcus lugdunensis</i> | Conventional biochemicals | 1 |

Specimen Number 4 – Urine (Pathogens Only) and Antibiotic Susceptibility

This simulated urine specimen contained *Morganella morganii*. This organism was identified correctly by all referee laboratories and by 100% of the participating laboratories processing this specimen.

Antimicrobial susceptibility testing for piperacillin and imipenem was indicated for this specimen. This organism was reported as susceptible to piperacillin by over 95% of the participating laboratories that tested this organism/antibiotic combination.

For the imipenem susceptibility result, all responses were graded as correct. This specimen serves as a reminder of the challenges involved in performing carbapenem susceptibilities on isolates of *Enterobacteriaceae*. Laboratories should obtain the latest version of the Clinical and Laboratory Standards Institute (CLSI) guidelines for antimicrobial susceptibility testing and interpretive reporting. These guidelines change from year to year and laboratories must keep abreast of these changes.

In June 2010, CLSI published revised MIC and disk diffusion interpretive criteria for the *Enterobacteriaceae* for the following three carbapenem antibiotics: imipenem, meropenem, and ertapenem. The interpretive guidelines were adjusted to enhance the detection of strains with low-level resistance. New information suggests that the previous susceptibility guidelines may not reliably predict drug efficacy.¹ Many organisms that would have been categorized as susceptible using the previous breakpoints will now be considered intermediate or resistant. Imipenem MIC's for *Proteus* species, *Providencia* species, and *Morganella morganii* tend to be higher (eg, MIC's in the new intermediate or resistant range) than meropenem or doripenem MIC's. These organisms may have elevated MIC's by mechanisms other than production of carbapenemases.¹

Disk diffusion: The revised CLSI disk diffusion criteria include larger zone diameters than those in previous guidelines (See table 1). The revised disk diffusion guidelines should be implemented right away. Twenty-nine of the participating laboratories performed disk diffusion testing on this specimen. Ten of those labs interpreted the results as susceptible using the previous interpretive guidelines. Eight of those 10 labs reported disk diffusion zone sizes of 20-22mm. According to the revised guidelines, these should have been interpreted as intermediate. Two of the 10 laboratories reported zone sizes that were ≤ 19 mm. According to the revised guidelines, these should have been interpreted as resistant.

| Antibiotic | Previous CLSI Breakpoints² | | | Revised CLSI Breakpoints¹ | | |
|-------------------|--|--------------|-----------|---|--------------|-----------|
| | Susceptible | Intermediate | Resistant | Susceptible | Intermediate | Resistant |
| Ertapenem | ≥ 19 | 16-18 | ≤ 15 | ≥ 23 | 20-22 | ≤ 19 |
| Imipenem | ≥ 16 | 14-15 | ≤ 13 | ≥ 23 | 20-22 | ≤ 19 |
| Meropenem | ≥ 16 | 14-15 | ≤ 13 | ≥ 23 | 20-22 | ≤ 19 |

MIC testing: The revised CLSI breakpoints for MIC testing are one to three doubling dilutions lower than the previous breakpoints (see Table 2). However, labs that use automated MIC susceptibility testing systems may not be able to adopt the revised CLSI breakpoints

immediately. The automated systems are programmed with FDA-approved values which correspond to the previous CLSI breakpoints. Manufacturers of these systems cannot ship instruments or software in the United States that have breakpoints installed other than those given by the United States Food and Drug Administration. There may be a delay of one or more years before the breakpoint changes can be implemented by the device manufacturers. If a device includes antimicrobial test concentrations sufficient to allow interpretation of susceptibility and resistance to an agent using the revised CLSI breakpoints, a laboratory could, after appropriate validation, choose to interpret and report results using the revised breakpoints. In the United States, laboratories that use FDA-approved susceptibility testing devices are allowed to use existing FDA interpretive breakpoints. Either FDA or CLSI susceptibility interpretive breakpoints are acceptable to clinical laboratory accrediting bodies.³

| Antibiotic | Previous CLSI Breakpoints² | | | Revised CLSI Breakpoints¹ | | |
|-------------------|--|--------------|-----------|---|--------------|-----------|
| | Susceptible | Intermediate | Resistant | Susceptible | Intermediate | Resistant |
| Ertapenem | ≤2 | 4 | ≥8 | ≤0.25 | 0.5 | ≥1 |
| Imipenem | ≤4 | 8 | ≥16 | ≤1 | 2 | ≥4 |
| Meropenem | ≤4 | 8 | ≥16 | ≤1 | 2 | ≥4 |

Of those using automated systems for susceptibility testing for this specimen, 87 laboratories, including 4 of the 10 referee laboratories, reported imipenem MIC results using the previous CLSI interpretive guidelines. The majority of laboratories reported MIC values that were ≤4µg/ml. Laboratories obtaining higher MIC values should review their imipenem MIC testing protocol.

This proficiency sample highlights the transition period laboratories are facing when testing *Enterobacteriaceae* for carbapenem resistance.

References:

1. Performance Standards for Antimicrobial Susceptibility Testing; Twentieth Informational Supplement (June 2010 update), M100-S20-U, Clinical and Laboratory Standards Institute (CLSI), 2010.
2. Performance Standards for Antimicrobial Susceptibility Testing; Twentieth Informational Supplement, M100-S20, Clinical and Laboratory Standards Institute (CLSI), 2010.
3. Performance Standards for Antimicrobial Susceptibility Testing; Twentieth Informational Supplement, M100-S21, Clinical and Laboratory Standards Institute (CLSI), 2011.

Number 4 - Methods of identification used by laboratories

| Result | Method | # Labs |
|---|---|--------|
| <i>Morganella morganii</i> | Siemens (Dade Behring) Negative Combo - any panel | 72 |
| | bioMerieux Vitek 2 GN | 43 |
| | bioMerieux API 20E | 22 |
| | bioMerieux Vitek 1 GNI + | 15 |
| | BD Phoenix Gram Negative ID | 7 |
| | BD BBL Crystal Enteric/Nonfermenter | 2 |
| <i>Morganella morganii</i> ss. <i>morganii</i> | bioMerieux Vitek 2 GN | 32 |
| | Siemens (Dade Behring) Negative Combo - any panel | 1 |
| | Conventional biochemicals | 1 |
| Specimen source not tested | | 2 |

Results of Antimicrobial Susceptibility Testing *Morganella morganii* with piperacillin

| Result | method | # Labs | Zone | MIC |
|---------------------------------------|-----------------------|--------|------|--------|
| Susceptible | MicroScan | 18 | | <=16 |
| | | 3 | | <16 |
| | | 1 | | =16 |
| | bioMerieux Vitek 2 | 13 | | <=4 |
| | | 1 | | =2 |
| | bioMerieux Vitek 1 | 2 | | <=8 |
| | | 1 | | 16 |
| | | 1 | | <8 |
| | E-test | 2 | | =0.25 |
| | | 1 | | =0.5 |
| | Agar dilution | 1 | | <=16/4 |
| | In house prepared MIC | 1 | | <=0.5 |
| | BD Phoenix | 1 | | <=2 |
| | Not given | 1 | | =<4 |
| | Disk diffusion | 1 | 35 | |
| | | 1 | 34 | |
| | | 3 | 33 | |
| | | 2 | 30 | |
| | | 4 | 29 | |
| | | 2 | 28 | |
| 1 | | 27 | | |
| 1 | | 25 | | |
| 1 | | 24 | | |
| 1 | | 20 | | |
| Resistant | MicroScan | 2 | | >64 |
| | bioMerieux Vitek 2 | 1 | | >=128 |
| Do not perform susceptibility testing | | 4 | | |
| Test not performed on antibiotic | | 107 | | |
| Test not performed on organism | | 14 | | |
| Test not performed on source | | 4 | | |

***Morganella morganii* with imipenem**

| Result | Method | # Labs | Zone | MIC |
|---------------------------------------|-----------------------|---------------|-------------|------------|
| Susceptible | MicroScan | 45 | | <=4 |
| | | 7 | | =4 |
| | | 6 | | <4 |
| | | 7 | | =2 |
| | | 1 | | <=1 |
| | bioMerieux Vitek 2 | 10 | | =2 |
| | | 2 | | <=1 |
| | | 1 | | <=4 |
| | | 2 | | =4 |
| | | 1 | | Not given |
| | bioMerieux Vitek 1 | 10 | | <=4 |
| | | 2 | | <4 |
| | BD Phoenix | 4 | | <=1 |
| | E-test | 1 | | =4 |
| | | 1 | | =1 |
| | Not given | 1 | | 2 |
| | Disk diffusion | 2 | 31 | |
| | | 1 | 30 | |
| | | 1 | 25 | |
| | | 1 | 24 | |
| | | 4 | 23 | |
| | | 2 | 22 | |
| | | 1 | 22 | |
| | | 4 | 21 | |
| | | 1 | 20 | |
| | | 1 | 19 | |
| | | 1 | 17 | |
| Intermediate | | E-test | 3 | |
| | 2 | | | =2.0 |
| | 1 | | | =2,0 |
| | MicroScan | 2 | | =2 |
| | Disk diffusion | 2 | 20 | |
| | | 5 | 21 | |
| | | 1 | 22 | |
| | Agar dilution | 1 | | =2 |
| bioMerieux Vitek 2 | 1 | | =2 | |
| Resistant | Disk diffusion | 2 | 19 | |
| | E-test | 1 | | =16 |
| | In house prepared MIC | 1 | | =4 |
| Do not perform susceptibility testing | | 4 | | |
| Test not performed on antibiotic | | 34 | | |
| Test not performed on organism | | 16 | | |
| Test not performed on source | | 1 | | |

Specimen Number 5 – Genital (Pathogens Only)

This simulated genital specimen contained *Neisseria gonorrhoeae*. This was reported correctly by 100% of the referee laboratories and 98% of the participants.

Number 5 - Methods of identification used by laboratories

| Result | Method | # Labs |
|------------------------------|---|---------------|
| <i>Neisseria gonorrhoeae</i> | Remel RapID NH | 63 |
| | bioMerieux API NH | 34 |
| | bioMerieux Vitek 2 NH | 27 |
| | Siemens (Dade Behring) MicroScan HNID | 23 |
| | Conventional biochemicals | 13 |
| | bioMerieux Vitek 1 NHI | 9 |
| | Genprobe Accuprobe | 4 |
| | Remel BactiCard Neisseria | 2 |
| | 16s rDNA sequencing | 2 |
| | Polymerase chain reaction | 1 |
| | BD BBL Crystal Neisseria/Haemophilus | 1 |
| | Genprobe Pace 2 GC | 1 |
| | GenProbe Aptima | 1 |
| | Biomerieux Vitek 2 Compact | 1 |
| | Phadebact | 1 |
| <i>Gardnerella vaginalis</i> | Siemens (Dade Behring) Negative Combo - any panel | 2 |
| No pathogens isolated | Conventional biochemicals | 1 |
| Specimen source not tested | | 11 |

| Additional organisms reported | | |
|--------------------------------------|-----------------------|---|
| <i>Staphylococcus aureus</i> | Remel Staphaurex Plus | 1 |

Chlamydia – Genital Swab for Direct Detection Methods

This simulated cervical swab was provided to laboratories that test for *Chlamydia* using direct detection methods. This sample contained non-viable organisms and was not suitable for laboratories performing *Chlamydia* culture.

This sample was negative for *Chlamydia trachomatis* and was reported as such by 99% of the participating laboratories that tested this specimen.

Test kits used by laboratories processing this specimen

| Result | Method | # Labs |
|---------------|--|---------------|
| Negative | Gen-Probe Aptima Combo 2 | 37 |
| | Gen-Probe PACE 2 CT or CT/GC | 21 |
| | BD ProbeTec ET CT or CT/GC | 20 |
| | Roche Diagnostics COBAS AMPLICOR CT/NG | 7 |
| | bioMerieux VIDAS | 3 |
| | Digene Hybrid Capture hc2 CT/GC | 2 |
| | Quidel QuickVue Chlamydia | 2 |
| | Real-time PCR | 1 |
| | Roche Diagnostics AMPLICOR CT/NG | 1 |
| | Abbott Real Time PCR | 1 |
| Positive | Gen-Probe PACE 2 CT or CT/GC | 1 |

Group A Streptococcus – Throat Swab for Direct Detection Methods

This specimen was reported as positive for Group A *Streptococcus* by 99% of the participating laboratories that processed it.

Test kits used by laboratories processing this specimen

| Result | Method | # Labs |
|-----------------------------------|---|---------------|
| Positive | Genzyme OSOM Ultra Strep A | 22 |
| | BD Directigen EZ Strep A | 18 |
| | BioStar/Inverness Medical Acceava Strep A | 13 |
| | Quidel QuickVue + Strep A | 8 |
| | Meridian Bioscience ImmunoCard STAT Strep A | 5 |
| | Abbott Signify Strep A Dipstick | 5 |
| | Fisher Sure-Vue Strep A Lateral Flow Test | 4 |
| | GenProbe Group A Strep | 3 |
| | Fisher Sure-Vue SELECT Strep A | 3 |
| | Cardinal Health SP Brand Strep A Cassette | 3 |
| | BD Chek Strep A | 3 |
| | Wampole Clearview Strep A Extract | 2 |
| | Quidel QuickVue Dipstick Strep A | 2 |
| | Stanbio QuStick Strep A Rapid Strip Test | 2 |
| | Cardinal Health SP Brand Strep A Dipstick | 2 |
| | Fisher Sure-Vue Signature Strep A Test | 2 |
| | Remel PathoDx Strep A | 1 |
| | Beckman Coulter Icon DS Strep A | 1 |
| | Abbott Signify Strep A Cassette | 1 |
| | Quidel QuickVue Inline Strep A | 1 |
| Beckman Coulter Icon SC Strep A | 1 | |
| Sacks Medical Corp RefuAH Strep A | 1 | |
| Polymedco Poly Stat Strep A | 1 | |
| BTNX Rapid Response | 1 | |
| Negative | BioStar/Inverness Medical Acceava Strep A | 1 |

BACTERIAL IDENTIFICATION BY PARTICIPATING LABORATORIES

| | <u>Number</u> <u>Reported</u> | <u>%</u> |
|--|----------------------------------|----------|
| SPECIMEN NUMBER 1 (Stool) | | |
| <i>Vibrio fluvialis</i> | 126 | 64.0 |
| <i>Vibrio furnissii</i> | 1 | 0.5 |
| <i>Vibrio fluvialis/furnissii</i> | 1 | 0.5 |
| No enteric pathogens isolated | 30 | 15.2 |
| <i>Vibrio</i> species | 19 | 9.6 |
| <i>Vibrio vulnificus</i> | 2 | 1.0 |
| <i>Aeromonas hydrophila</i> complex | 2 | 1.0 |
| <i>Vibrio alginolyticus</i> | 1 | 0.5 |
| <i>Aeromonas caviae</i> complex | 1 | 0.5 |
| <i>Aeromonas</i> species | 1 | 0.5 |
| Specimen source not tested | 13 | 6.6 |
| SPECIMEN NUMBER 2 (Blood) | | |
| <i>Haemophilus influenzae</i> | 181 | 91.9 |
| <i>Haemophilus influenzae</i> group b | 3 | 1.5 |
| <i>Haemophilus</i> species | 3 | 1.5 |
| Specimen source not tested | 10 | 5.1 |
| SPECIMEN NUMBER 3 (Abscess) – Anaerobe | | |
| <i>Fingoldia magna</i> | 6 | 3.0 |
| <i>Peptostreptococcus magnus</i> | 139 | 70.6 |
| <i>Peptostreptococcus</i> species | 27 | 13.7 |
| Anaerobic gram positive cocci | 2 | 1.0 |
| <i>Peptostreptococcus</i> group | 1 | 0.5 |
| <i>Peptostreptococcus micros</i> | 1 | 0.5 |
| No anaerobic organisms | 3 | 1.5 |
| Anaerobes not cultured | 7 | 3.5 |
| Specimen source not tested | 3 | 1.5 |
| SPECIMEN NUMBER 3 (Abscess) – Aerobe | | |
| <i>Stenotrophomonas maltophilia</i> | 27 | 13.7 |
| No aerobic organisms | 23 | 11.7 |
| <i>Sphingomonas paucimobilis</i> | 8 | 4.0 |
| <i>Burkholderia cepacia</i> complex | 3 | 1.5 |
| <i>Chryseobacterium meningosepticum</i> | 2 | 1.0 |
| <i>Pseudomonas</i> species | 2 | 1.0 |
| <i>Enterobacter cloacae</i> | 1 | 0.5 |
| <i>Morganella morganii</i> | 1 | 0.5 |
| Aerobic gram negative rods | 1 | 0.5 |
| SPECIMEN NUMBER 4 (Urine) | | |
| <i>Morganella morganii</i> | 161 | 81.7 |
| <i>Morganella morganii</i> ss. <i>morganii</i> | 34 | 17.3 |
| Specimen source not tested | 2 | 1.0 |
| SPECIMEN NUMBER 5 (Genital) | | |
| <i>Neisseria gonorrhoeae</i> | 183 | 92.9 |
| <i>Gardnerella vaginalis</i> | 2 | 1.0 |
| No pathogens isolated | 1 | 0.5 |
| Specimen source not tested | 10 | 5.1 |

CHLAMYDIA – DIRECT DETECTION (Genital)

| | | |
|---|----|------|
| Negative for <i>Chlamydia trachomatis</i> | 95 | 99.0 |
| Positive for <i>Chlamydia trachomatis</i> | 1 | 1.0 |

GROUP A STREPTOCOCCUS - DIRECT DETECTION (Throat)

| | | |
|---|-----|------|
| Positive for Group A <i>Streptococcus</i> | 105 | 99.1 |
| Negative for Group A <i>Streptococcus</i> | 1 | 0.9 |