

## SUMMARY OF CONFIRMED INFECTIONS

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The June 2009 issue presents the laboratory diagnosis of some of the infectious diseases and the reference microbiology work done in this laboratory during May 2009 and new cases of syphilis in Milwaukee during May 2009. Information on the laboratory diagnosed mycobacterial infections in Wisconsin during April 2009 is also included.

### Legionnaires Disease

| Patient |     | Test          |         |     |
|---------|-----|---------------|---------|-----|
| Age     | Sex | Urine Antigen | Culture | DFA |
| 69 yr   | M   | +             | ND      | ND  |

ND = Not done

### Syphilis

| Test          | Total | Test               | Total |
|---------------|-------|--------------------|-------|
| RPR Reactive  | 0     | TPPA Reactive      | 14    |
| VDRL Reactive | 17    | Darkfield Positive | 0     |

### New Cases of Syphilis:

| Stage              | Number of Cases |          |
|--------------------|-----------------|----------|
|                    | May 2009        | May 2008 |
| Primary syphilis   | 0               | 0        |
| Secondary syphilis | 0               | 1        |
| Early latent       | 4               | 4        |
| Late latent        | 0               | 2        |
| Total              | 4               | 7        |

Median age: 28.5 yr; Age range: 26-48 yr

Source: Wisconsin Division of Health

### Gonorrhea Antimicrobial Susceptibility Testing

| Number Tested | Decreased Susceptible (DS) / Resistant (R) Antibiotics |          |               |              |
|---------------|--------------------------------------------------------|----------|---------------|--------------|
|               | Ciprofloxacin                                          | Cefixime | Spectinomycin | Azithromycin |
| 19            | 1(R)                                                   | 0        | 0             | 0            |

### Isolates Other Than *N. gonorrhoeae*

| Organism                      | Site    | Number Isolates | Organism                  | Site    | Number Isolates |
|-------------------------------|---------|-----------------|---------------------------|---------|-----------------|
| <i>Ureaplasma urealyticum</i> | Genital | 0               | <i>Mycoplasma hominis</i> | Genital | 3               |

### Enteric Parasites Identified

| Age | Sex | Parasite                    |
|-----|-----|-----------------------------|
| 28  | M   | <i>Blastocystis hominis</i> |
| 15  | M   | <i>Blastocystis hominis</i> |
|     |     | <i>Giardia lamblia</i>      |
| 19  | M   | <i>Blastocystis hominis</i> |
|     |     | <i>Giardia lamblia</i>      |
|     |     | <i>Hookworm</i>             |
| 28  | F   | <i>Entamoeba coli</i>       |
| 23  | M   | <i>Entamoeba coli</i>       |
| 16  | M   | <i>Entamoeba coli</i>       |
| 30  | F   | <i>Endolimax nana</i>       |
|     |     | <i>Giardia lamblia</i>      |
| 27m | M   | <i>Giardia lamblia</i>      |
| 24  | F   | <i>Giardia lamblia</i>      |
| 4   | M   | <i>Giardia lamblia</i>      |

### Mycobacterial Infections

| Age | Sex | Test Results |         |           | Identification          |
|-----|-----|--------------|---------|-----------|-------------------------|
|     |     | Sputum Smear | Culture | DNA Probe |                         |
| 52  | M   | -            | +       | +         | <i>M. avium</i> complex |
| 46  | M   | -            | +       | +         | <i>M. avium</i> complex |
| 49  | M   | +            | +       | +         | <i>M. avium</i> complex |
| 70  | M   | -            | +       | +         | <i>M. avium</i> complex |
| 67  | M   | -            | +       | +         | <i>M. avium</i> complex |
|     |     | -            | +       | +         | <i>M. tuberculosis</i>  |
| 53  | M   | +            | +       | +         | <i>M. tuberculosis</i>  |
| 60  | M   | -            | +       | +         | <i>M. tuberculosis</i>  |

### Reference Cultures

| Age | Sex | Source | Identification                  |
|-----|-----|--------|---------------------------------|
| 79  | F   | Fluid  | <i>Aerococcus viridans</i>      |
| 65  | F   | Sputum | <i>Alcaligenes xylosoxidans</i> |
| 62  | M   | Blood  | <i>Corynebacterium striatum</i> |

|     |   |         |                                                |
|-----|---|---------|------------------------------------------------|
| 52  | F | Wound   | <i>Neisseria canis</i>                         |
| 21  | F | Genital | <i>Neisseria gonorrhoeae</i>                   |
| 22  | M | Genital | <i>Neisseria gonorrhoeae</i>                   |
| 22  | M | Throat  | <i>Neisseria gonorrhoeae</i>                   |
| 22  | M | Rectum  | <i>Neisseria gonorrhoeae</i>                   |
| 24  | F | Genital | <i>Neisseria gonorrhoeae</i>                   |
| 10  | F | Genital | <i>Neisseria gonorrhoeae</i>                   |
| 25m | F | Stool   | <i>Salmonella</i> Derby                        |
| 42  | F | Stool   | <i>Salmonella</i> Enteritidis                  |
| 20m | M | Stool   | <i>Salmonella</i> Heidelberg                   |
| 44  | F | Stool   | <i>Salmonella</i> I 4,[5],12:i:-               |
| 16  | F | Stool   | <i>Salmonella</i> Panama                       |
| 11  | F | Blood   | <i>Salmonella</i> Paratyphi A                  |
| 75  | M | Stool   | <i>Salmonella</i> Saintpaul                    |
| 54  | M | Stool   | <i>Salmonella</i> subspecies IIIb (diarizonae) |
| 27  | M | Blood   | <i>Salmonella</i> Typhi                        |
| 35m | F | Stool   | <i>Salmonella</i> Typhimurium                  |
| 10  | M | Stool   | <i>Salmonella</i> Typhimurium                  |
| 18  | M | Stool   | <i>Salmonella</i> Typhimurium                  |
| 5   | F | Stool   | <i>Shigella sonnei</i>                         |
| 71  | M | Stool   | <i>Shigella sonnei</i>                         |
| 23  | F | Stool   | <i>Shigella sonnei</i>                         |
| 6   | F | Stool   | <i>Shigella sonnei</i>                         |
| 24  | F | Stool   | <i>Shigella sonnei</i>                         |
| 9   | F | Stool   | <i>Shigella sonnei</i>                         |
| 10  | M | Stool   | <i>Shigella sonnei</i>                         |
| 38  | F | Stool   | <i>Shigella sonnei</i>                         |
| 5   | M | Stool   | <i>Shigella sonnei</i>                         |
| 3   | M | Stool   | <i>Shigella sonnei</i>                         |
| 43  | F | Blood   | <i>Shigella sonnei</i>                         |
| 11  | M | Stool   | <i>Shigella sonnei</i>                         |

### Laboratory Diagnosed Mycobacterial Infections in Wisconsin during April 2009

| <i>Mycobacterium</i> species                |       | Dane      | Eau Claire | Kenosha  | La Crosse | Manitowoc | Marathon  | Milwaukee | Outagamie | Racine   | Rock     | Waukesha | Winnebago | Wood     | TOTALS     |
|---------------------------------------------|-------|-----------|------------|----------|-----------|-----------|-----------|-----------|-----------|----------|----------|----------|-----------|----------|------------|
| <i>M. tuberculosis</i> complex              | Pulm  |           |            |          |           |           |           | 1         |           |          |          |          |           |          | 1          |
|                                             | Extra |           |            |          |           |           |           | 2         |           |          |          |          |           |          | 2          |
| <b>Total <i>M. tuberculosis</i> complex</b> |       | <b>0</b>  | <b>0</b>   | <b>0</b> | <b>0</b>  | <b>0</b>  | <b>0</b>  | <b>3</b>  | <b>0</b>  | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>0</b> | <b>3</b>   |
| <i>M. avium</i> complex                     | Pulm  | 5         |            |          | 1         | 1         | 7         | 33        |           |          |          | 3        | 3         | 2        | 55         |
|                                             | Extra | 3         |            |          | 1         |           |           | 2         |           |          |          |          |           |          | 6          |
| <i>M. gordonae</i>                          | Pulm  | 7         |            | 2        |           |           | 1         | 9         |           | 1        | 3        |          | 1         | 1        | 25         |
|                                             | Extra | 2         |            |          |           |           |           | 2         |           |          |          |          |           |          | 4          |
| <i>M. chelonae-abscessus</i>                | Pulm  |           |            |          |           |           |           | 4         |           | 1        |          | 1        |           |          | 6          |
|                                             | Extra |           | 1          |          | 1         |           |           | 1         |           |          |          |          |           |          | 3          |
| <i>M. fortuitum</i> group                   | Pulm  | 1         |            |          |           |           | 2         | 1         |           |          |          |          |           |          | 4          |
|                                             | Extra |           |            |          |           |           |           |           | 1         |          |          |          |           |          | 1          |
| <i>M. kansasii</i>                          | Pulm  |           |            |          |           |           |           | 2         |           |          |          |          |           |          | 2          |
| <i>M. mucogenicum</i>                       | Pulm  |           |            |          |           |           |           | 2         | 1         |          |          |          |           | 1        | 4          |
|                                             | Extra |           |            |          |           |           |           | 1         |           |          |          |          |           |          | 1          |
| <i>M. xenopi</i>                            | Pulm  |           |            |          |           |           |           | 4         |           |          |          | 1        |           |          | 5          |
| <i>M. goodii</i>                            | Pulm  |           |            |          |           |           |           | 1         |           |          |          |          |           |          | 1          |
| <b>TOTALS</b>                               |       | <b>18</b> | <b>1</b>   | <b>2</b> | <b>3</b>  | <b>1</b>  | <b>10</b> | <b>62</b> | <b>2</b>  | <b>2</b> | <b>3</b> | <b>5</b> | <b>4</b>  | <b>4</b> | <b>117</b> |

### Extra-Pulmonary Sources of Isolation:

|                                          |                                                                                                                                                                   |
|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>M. tuberculosis</i> Extra-pulmonary:  | 1 mediastinal mass, 1 knee tissue, 1 cervical lymph node                                                                                                          |
| <i>M. avium</i> complex Extra-pulmonary: | 2 stool                                                                                                                                                           |
| Other <i>Mycobacterium</i> species       | <i>M. bovis</i> BCG: urine; <i>M. chelonae/abscessus</i> : 1 abdomen; <i>M. fortuitum</i> group: 1 back; <i>M. marinum</i> : 1 arm; <i>M. wolinskyi</i> : 1 blood |

### *M. tuberculosis* complex First-Line Drug Susceptibility Testing\*:

| Drug Resistance                     | Number of Isolates |
|-------------------------------------|--------------------|
| Susceptible to all first-line drugs | 8                  |
| <b>TOTAL</b>                        | <b>8</b>           |

(\*) Drugs tested: isoniazid=INH (0.2 ug/ml and 1.0 ug/ml), rifampin (1.0 ug/ml), ethambutol (5.0 ug/ml), and pyrazinamide=PZA (100 ug/ml).

Source: Mycobacteriology Laboratory Network Data Report, WI State Laboratory of Hygiene, Madison, WI.

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### Influenza RT-PCR Testing

| Samples Tested | Novel Influenza A (H1N1) positive | Seasonal Influenza A/H1 positive | Seasonal Influenza A/H3 positive |
|----------------|-----------------------------------|----------------------------------|----------------------------------|
| 1635           | 378                               | 6                                | 4                                |

### Herpes Simplex Virus Isolations

| Agent                 | Number of Isolates |
|-----------------------|--------------------|
| Herpes Simplex type 1 | 5                  |
| Herpes Simplex type 2 | 9                  |

### Molecular Amplification and PCR

| Agent                        | Method              | Tested | Positive | % Positive |
|------------------------------|---------------------|--------|----------|------------|
| <i>Chlamydia trachomatis</i> | ProbeTec            | 647    | 96       | 14.8%      |
| <i>Neisseria gonorrhoeae</i> | ProbeTec / GenProbe | 775    | 61       | 7.9%       |

### DNA Sequencing

The MHD laboratory is currently performing DNA sequence-based microbial identification for selective reference bacteria and fungal isolates. This rapid, high throughput molecular assay targets 16S rRNA and the D2 region of the 26S rRNA genes for the detection of bacteria and fungal species. Please call the laboratory at (414) 286-3526 for further detail.

| Reference Microbe | Target gene | Final Identification            |
|-------------------|-------------|---------------------------------|
| Bacteria          | 16S rRNA    | <i>Aerococcus</i> species       |
| Bacteria          | 16S rRNA    | <i>Corynebacterium striatum</i> |
| Bacteria          | 16S rRNA    | <i>Neisseria canis</i>          |

## Respiratory Virus Surveillance Panel

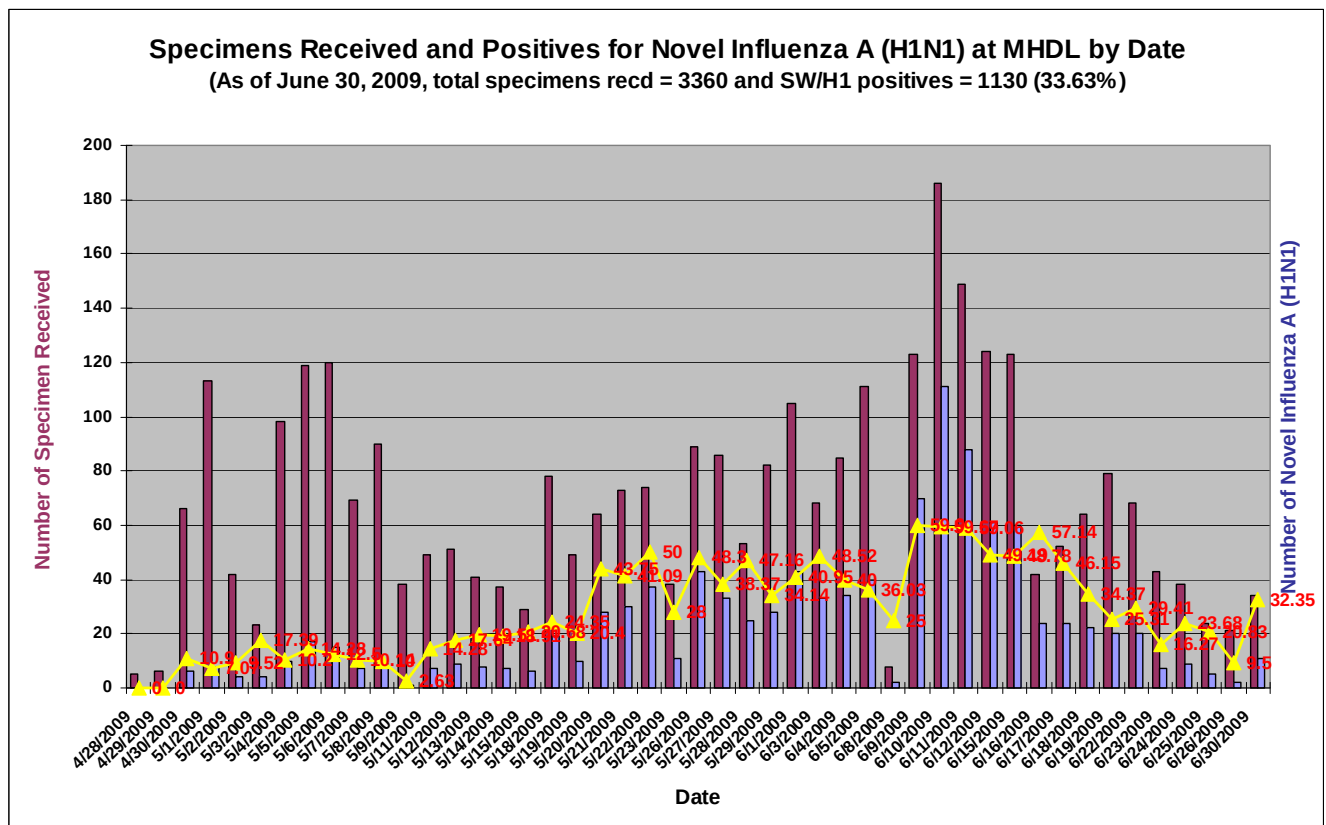
The MHDL has recently validated a Respiratory Virus Panel (RVP) for simultaneous detection of 17 respiratory viruses including Influenza A, Influenza B, RSV, Parainfluenza virus Types 1-4, Metapneumovirus, Adenovirus, Coronaviruses, and Rhinovirus infections from a single sample.

The table below shows the results of 322 Influenza A PCR negative samples tested by RVP at MHDL including all the samples from our influenza surveillance sites (Marquette and University of Wisconsin-Milwaukee clinics) between May 8- June 30, 2009. A total of 66 (20.49%) non-Influenza A respiratory viruses were found to be circulating in the community.

| Virus                               | Positive | % Positive |
|-------------------------------------|----------|------------|
| Human meta-pneumovirus (hMPV)       | 5        | 1.6 %      |
| Influenza B                         | 5        | 1.6 %      |
| Human Rhinovirus (HRV)              | 33       | 10.2 %     |
| Parainfluenza Virus 1 (PIV1)        | 1        | 0.3 %      |
| Parainfluenza Virus 2 (PIV2)        | 6        | 1.9 %      |
| Parainfluenza virus 3 (PIV3)        | 13       | 4.0 %      |
| Respiratory Syncytial Virus (RSV) B | 1        | 0.3 %      |
| Adenovirus E                        | 1        | 0.3 %      |
| Human Coronavirus (HCV) 229E        | 1        | 0.3 %      |

## Special Influenza Report from MHDL (May- June 2009)

| Cumulative Flu Data from MHDL (04/24/2009 – 06-30-2009)                                                                  |                        |                                     |                               |
|--------------------------------------------------------------------------------------------------------------------------|------------------------|-------------------------------------|-------------------------------|
| # Total Specimens Received                                                                                               | Total FluA positive/ % | Total Novel FluA (H1N1) positive/ % | Total FluA/H1+H3* positive/ % |
| 3360                                                                                                                     | 1143 (34.01%)          | 1130 (33.63%)                       | 13 (0.38%)                    |
| Milwaukee residents: 792 (23.57%)                                                                                        |                        |                                     |                               |
| Non-Milwaukee residents: 338 (10.05%)                                                                                    |                        |                                     |                               |
| * So far we have 6 FluA/H1 (last detected 5/13/09), 7 FluA/H3 (last detected 6/12/09) and 2 FluB (last detected 6/18/09) |                        |                                     |                               |



**Through 06/29/09, Novel Influenza A (H1N1) case counts were as follows:**

City of Milwaukee: 3,183 (3 deaths)  
 Milwaukee County: 3,896  
 Wisconsin: 5,763 (4 deaths)  
 US: 27,717 (127 deaths) (through 6/25/09)  
 WHO: 70,893 (311 deaths)

While case counts may have dropped somewhat locally at this time, laboratory testing and outbreak investigations continue at the Milwaukee Health Department.