Microbiology Competencies

INSTRUCTIONS FOR CLINICAL INSTRUCTORS – Please read carefully.

Clinical faculty need to place their INITIALS ONE time for each of the skills listed in the rows numbered 1-7 if they believe the student has achieved competency.

It is critically important that the student paperwork be reviewed daily. This should not take more than 10 or 15 minutes as you are just verifying that results were accurately recorded and interpreted and the results match the results obtained at the site. The clinical instructor must sign the attendance form at the end of each day.

If a clinical faculty member observes, based on results recorded, that a student has NOT achieved competency they must document on the “Daily Competency Evaluation by listing the number and letter of the competency in the “FAIL” column. On the first day or two it is not uncommon for students to make certain types of errors so it is important to document these errors so that if the student continues to make the same types of errors after being counseled and allowed additional practice an action plan on the Daily Competency Evaluation form must be put in place which provides for remediation. If after remediation the student still does not demonstrate competence the “FAIL” column must be initialed by the clinical instructor on the appropriate line of the competency form.

To determine 95% competency the student will bring forms to record their results. The student will be provided with forms which do not permit patient information to be documented. Any documents with patient information MUST remain at the clinical site, since it has HIPAA protected information on it.

The forms also insure that the clinical faculty provides the students with the proper number of samples for each skill required. **IMPORTANT: If the student finishes the samples provided please provide them with additional samples to complete their clinical day.** Students should also spend quality time shadowing the techs as time permits. Students must not be allowed to leave early. The more practice and observation they get the more competent they become. Periodically through out the day the clinical faculty must review the student paperwork and use a colored pen to indicate errors such as the following: name/number incorrect, failure to record reactions, failure to interpret reactions and/or inaccurate results obtained. ACC faculty will assist in determining 95% accuracy.

<table>
<thead>
<tr>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td><strong>OBSERVE</strong></td>
</tr>
<tr>
<td><strong>PASS</strong></td>
</tr>
<tr>
<td><strong>FAIL</strong></td>
</tr>
</tbody>
</table>

If it appears, as the rotation progresses, that the student IS NOT progressing or has SERIOUS issues please contact Keri Brophy-Martinez-512-223-5877.

Updated 5/3/2017
Austin Community College  
Medical Laboratory Technology  
MLAB 2462: Clinical III  
Microbiology Clinical Competencies

STUDENT NAME:_____________________________  CLINICAL AFFILIATE: ________________________________

Dates of Attendance____________________ Supervisor/Instructor _____________________________

**Instructions:** The clinical instructor(s) must document the student's orientation to the departments by placing the date and initials of the individual responsible in the appropriate column.

<table>
<thead>
<tr>
<th>ORIENTATION TO CLINICAL SITE</th>
<th>Date</th>
<th>Instructor Initials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shown location of the following:</td>
<td></td>
<td></td>
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<tr>
<td>a. Place to securely store belongings</td>
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<tr>
<td>b. Location of restroom</td>
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<td></td>
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<tr>
<td>c. Location of break room</td>
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<tr>
<td>d. Location of cafeteria</td>
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<td></td>
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<tr>
<td>2. Short tour of laboratory facility</td>
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<tr>
<td>3. Introduction to laboratory manager</td>
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<tr>
<td>4. Introduction to key staff in the department</td>
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<tr>
<td>5. Location of department Procedure Manual</td>
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<table>
<thead>
<tr>
<th>ORIENTATION TO LABORATORY SAFETY AND INFECTION CONTROL</th>
<th>Date</th>
<th>Instructor Initials</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. IDENTIFIES LOCATION OF SAFETY DEVICES</td>
<td></td>
<td></td>
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<tr>
<td>a. Fire Extinguishers</td>
<td></td>
<td></td>
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<tr>
<td>b. Fire Alarms</td>
<td></td>
<td></td>
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<tr>
<td>c. Fire Blankets</td>
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<td></td>
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<tr>
<td>d. Eye Washes</td>
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<tr>
<td>e. Safety Showers</td>
<td></td>
<td></td>
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<tr>
<td>f. First Aid Kit</td>
<td></td>
<td></td>
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<tr>
<td>g. Emergency Exits</td>
<td></td>
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<tr>
<td>h. Incident Reports</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. REVIEWS DEPARTMENTS PROTOCOL FOR HANDLING BLOOD &amp; BODY FLUIDS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Exposure Protocol</td>
<td></td>
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</tbody>
</table>

Updated 5/3/2017
### MLAB 2462: Clinical III

**MICROBIOLOGY ENTRY-LEVEL COMPETENCIES**

<table>
<thead>
<tr>
<th>Student Name ___________________________________________</th>
</tr>
</thead>
</table>

*INSTRUCTOR, please place your INITIALS in the appropriate column “Pass” or “Fail”.

<table>
<thead>
<tr>
<th>Observe</th>
<th>PASS</th>
<th>FAIL</th>
</tr>
</thead>
</table>

1. **Quality Control** - The student must be familiar with QC procedures AND corrective action to take for each of the following:
   
a. Accurately records refrigerator/incubator temperatures.
   
b. Evaluates corrective action to take when refrigerators temperatures exceed predetermined limits.
   
c. Labels reagents, and controls for suitability including out-dating and appearance.
   
d. Properly records and/or stores QC values according to protocol.
   
e. Takes corrective action for controls that do not meet predetermined limits.
   
g. Performs comparison/correlation studies to bring new lot numbers of control, media and/or reagents into service. If applicable.

2. **Specimen processing - 95% accuracy required.**
   
a. Prioritizes samples based on urgency of test requests.
   
b. Correctly identifies source identification and proper labelling with 100% accuracy.
   
c. States the sample types acceptable for each test performed in the microbiology department.
   
d. States the reason for rejection of samples according to department protocol.
   
e. Correct handling of patient samples, taking into consideration the age, integrity and source of specimen.
   
f. Correctly inoculates and streaks clinical material, using department protocol.
   
g. Correctly incubates cultures under proper atmospheric conditions.

3. **Instrumentation – 95% accuracy required.**
   
a. Blood culture analysis
      1. Discuss the methodology of the blood culture instrument.
      2. Perform necessary maintenance procedures (daily, routine, backup).
      3. Load/Unload blood culture bottles.
      4. Recognizes “panic/critical values” and states action which must be taken when such a value is obtained on a patient sample.
      5. State the clinical significance of abnormal results obtained, correlating patient results to possible disease and/or therapy states.
   
b. Identification & Sensitivity Systems
      1. Discuss the methodology of the instrument performing ID & sensitivity (i.e VITEK, Microscan).
      2. Perform necessary maintenance procedures (daily, routine, backup).
      3. Correctly set-up ID and/or sensitivity panels.
      4. Recognize results that fall outside of expected scope and troubleshoot these problems.
      5. Recognizes “panic/critical values” and states action which must be
taken when such a value is obtained on a patient sample.

6. State the clinical significance of abnormal results obtained, correlating patient results to possible disease and/or therapy states.

4. **Miscellaneous Tests Performed** – 95% accuracy required. (where applicable)

   a. Gram stain
   b. Catalase
   c. Coagulase or Staph typing
   d. Bacitracin sensitivity or Strep typing
   e. Optochin sensitivity or Strep typing
   f. Oxidase
   g. X and V factor requirements/Quad plates for Haemophilus
   h. Cast test and/or Germ tube
   i. API and or NHI
   j. PYR
   k. Beta lactamase
   l. Wet mounts/KOH
   m. MRSA Screen Protocol
   n. Microdase disc
   o. Catarrhalis disc
   p. Shigella typing

5. **Culture Work-Up** (where applicable)

   a. **Blood cultures**
      1. Participate in the visual inspection of blood cultures.
      2. Subculture and gram stain positive blood cultures.
      3. Perform appropriate tests to identify pathogenic organisms.
      4. Appropriately report positive blood cultures.
   b. **Respiratory Tract**
      1. Participate in reading cultures from throat and sputums.
      2. Perform appropriate tests to identify pathogenic organisms.
      3. Distinguish normal flora from pathogens.
   c. **Gastrointestinal Tract**
      1. Participate in reading cultures from the gastrointestinal tract.
      2. Perform appropriate tests to identify pathogenic organisms.
      3. Distinguish normal flora from pathogens.
   d. **Urogenital Tract**
      1. Participate in reading cultures from the urogenital tract.
      2. Perform appropriate tests to identify pathogenic organisms.
      3. Distinguish normal flora from pathogens.
   e. **Miscellaneous sites**
      1. Participate in reading cultures from CSF, body fluid and wounds.
      2. Perform appropriate tests to identify pathogenic organisms.
      3. Distinguish normal flora from pathogens.
   f. **Sensitivity testing**
      1. Kirby Bauer
      2. MIC sensitivity (microwell/plate)
      3. E-test (gradient strip)

6. **Reporting of Results**

Updated 5/3/2017
a. Properly identifies results with panic ranges and acts upon those results accordingly.

b. Uses appropriate nomenclature when reporting results.

c. State the clinical significance of abnormal results obtained, correlating patient results to possible disease and/or therapy states.

7. Other:

a. Participate in preparation of specimens to be sent to reference laboratories.

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### Optional Procedures: (as available at clinical site)

*INSTRUCTOR, please place your initials in the appropriate column “Pass” or “Fail”.

<table>
<thead>
<tr>
<th>Observed</th>
<th>PASS</th>
<th>FAIL</th>
</tr>
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#### Parasitology

1. Prepare specimens for parasitic examination
2. Accurately examine pinworm preparations
3. Participate in the reading of parasitic preparations for parasites.

#### Mycology

1. Process clinical material for the culturing and identification of yeasts and fungus, as available.
2. Perform microscopic examinations on clinical materials for the presence of fungus and/or yeasts, as available.
3. Perform testing procedures used in the identification of yeast and fungus, as available.

#### Mycobacteria

1. Process clinical material for the culturing of Mycobacterium, as available.
2. Perform and interpret acid fast and/or fluorescent staining.
3. Identify mycobacteria.

#### Molecular testing

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Updated 5/3/2017