Urinalysis Clinical Practicum Objectives – CLS 639

The following objectives are to be completed by the student for successful completion of this clinical rotation. The objectives within the psychomotor domain will be achieved by practice and evaluated through demonstration by the student. The objectives within the cognitive domain will be obtained through readings and evaluated through written exams.

The Student Is Expected To:

1. Explain to a patient the proper method of collecting a midstream urine.
2. Demonstrate ability to correctly log in urine specimens.
3. Perform chemical urinalysis procedures.
4. Identify those situations in which confirmatory tests are required and perform the appropriate test. (Clinitest, Ictotest, and sulfosalicylic acid test for protein, Acetest).
5. For the following tests:
   - specific gravity
   - appearance
   - glucose
   - hemoglobin
   - urobilinogen
   - Clinitest
   - Acetest
   - pH
   - protein
   - ketones
   - bilirubin
   - Ictotest
   - SSA

   5a – state the principle.
   5b – state the normal value.
   5c – list 2 conditions that could result in abnormal values.
   5d – list causes of false positive and false negative results for each.
6. Describe the changes which occur in urine upon standing.
7. Define the following terms:
   - oliguria
   - polyuria
   - distal and proximal tubule
   - loop of Henle
   - osmolality
   - collecting tubule
   - renal glycosuria
   - diuresis
   - nephron
   - nocturia
   - glomerulus
   - isosthenuria
   - ketone bodies
8. Correlate the Clinitest glucose results with the dipstick glucose results.
9. Discuss the reason that Clinitest is routinely performed on all children under five.
10. Correlate the effect of various substances on urine appearance. These substances include RBC’s, WBC’s, bile, melanin, porphyrins, myoglobin, amorphous crystals, drugs, and homogentisic acid.
11. Discuss the four main functions of the kidney.
12. Correctly perform the quality control procedures used in the urinalysis department.
13. Define the following:
   - serotonin
   - melanin
   - alkaptonuria
   - phenylketonuria
   - myoglobin
   - Bence Jones Protein
14. Perform maintenance on urinalyses instruments.

15. Identify elements found in urinary sediments from sediment, descriptions, and images:
   - white blood cells: amorphous phosphates
   - red blood cells: amorphous urates
   - glitter cells: calcium oxalate crystals
   - epithelial cells: uric acid crystals
   - mucous: triple phosphate crystals
   - oval fat bodies: tyrosine crystals
   - fat droplets: leucine crystals
   - waxy casts: cysteine crystals
   - hyaline casts: cholesterol crystals
   - granular casts: sulfa crystals
   - WBC casts: ammonium biurate crystals
   - cylindroids or pseudocasts: yeast
   - sperm: trichomonas

16. Correlate conditions associated with the structures in the above objective.

17. Describe the formation of all cast types.

18. Report UA results as per laboratory protocol.

19. Describe or demonstrate our method for reporting each of the formed elements in the urine.

20. Correlate the clinical picture and the urinary findings in the following diseases:
   - lupus erythematosus: multiple myeloma
   - glomerulonephritis: pyelonephritis
   - diabetes mellitus: Addison's disease
   - Cushing's syndrome: diabetes insipidus
   - renal failure

21. When given a problem/issue in UA, resolve the problem.

22. Perform complete UAs and correlate microscopic with chemistry results.
Clinical Urinalysis Practicum - CLS 639 Performance Tasks Checklist

Note: This checklist contains a number of Urinalysis tests that may not necessarily be performed in the department at your clinical site or may be performed in another department. The CLS student will perform assigned tests that may or may not be included in this list. However, the student is responsible for applying the objectives to each of the tests listed below and any additional assigned by the site. Performing truly independently at all tasks may not be achievable at this stage, but with supervision the student should be able to perform most tasks with minimal oversight.

Please evaluate the student using the following scale:

1. Fails to Meet Standards: Performance is significantly below entry-level expectations. Performance is unacceptable. Needs continuous monitoring and supervision.

2. Below Standards: Performance is marginally below entry-level expectations. Student needs to improve to achieve entry level competencies.


4. Above Standards: Consistent in meeting entry-level expectations. Student performance demonstrates initiative and independent functioning. Student may excel in some areas.


N/A: Not applicable. No opportunity to evaluate criteria. Please mark “NA” across the rating scale if there has been inadequate opportunity to evaluate an attribute. Definition of Competencies If you give all of this number it correlates to a grade of:

1 - Fails to meet standards = F
2 - Below Standards 60% - D
3 - Meets Standards = 70% - C
4 - Above Standards = 85% - B
5 - Exceeds Standards = 100% - A

Student Name: ____________________________________
Clinical Site: ____________________________________

<table>
<thead>
<tr>
<th>Performance Task</th>
<th>Fails to Meet Standards (1)</th>
<th>Below Standards (2)</th>
<th>Meets Standards (3)</th>
<th>Above Standards (4)</th>
<th>Exceeds Standards (5)</th>
<th>N/A</th>
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</thead>
<tbody>
<tr>
<td>Identification of specimen</td>
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<tr>
<td>Specimen acceptibility</td>
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<tr>
<td>Specimen preparation</td>
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<tr>
<td>Performance of routine dipstick / automated</td>
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<tr>
<td>Performance of routine dipstick / manual</td>
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<tr>
<td>Performance of Clinitest</td>
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<tr>
<td>Skill</td>
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<td>2</td>
<td>3</td>
<td>4</td>
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<td>N/A</td>
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<tr>
<td>Performance of Ictotest</td>
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<td>Performance of Acetest</td>
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<td>Performance of Sulfosal. protein</td>
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<td>Use and care of Refractometer</td>
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<td>Microscopically recognize and quantitate leukocytes</td>
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<tr>
<td>Microscopically recognize and quantitate erythrocytes</td>
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<tr>
<td>Microscopically recognize and quantitate epithelial cells</td>
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<tr>
<td>Microscopically recognize and quantitate casts</td>
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<td>O</td>
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<tr>
<td>Microscopically recognize and quantitate crystals</td>
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<td>Able to troubleshoot discrepancies</td>
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<td>Follows safe work practice (universal precautions)</td>
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<td>Performs QC procedures</td>
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<td>Recognizes critical values</td>
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<td>Turnaround time protocol - can perform UA within the labs turnaround time</td>
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<td>O</td>
<td>O</td>
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<tr>
<td>Review of results for accuracy</td>
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<td>Recognizes abnormal and absurd results &amp; takes appropriate action</td>
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<td>O</td>
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<tr>
<td>Keeps work area clean, organized, and stocked with supplies</td>
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<td>O</td>
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<tr>
<td>Correlates microscopic with chemical analysis</td>
<td>O</td>
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</tbody>
</table>

**Other skills not specifically listed above related to the analysis of urine:**

Other skill: ___________________________________________

[other_skill_1]

- Fails to Meet Standards (1)
- Below Standards (2)
- Meets Standards (3)
- Above Standards (4)
- Exceeds Standards (5)
- N/A

Other skill: ___________________________________________
[other_skill_2]

○ Fails to Meet Standards (1)
○ Below Standards (2)
○ Meets Standards (3)
○ Above Standards (4)
○ Exceeds Standards (5)
○ N/A

Other skill: __________________________

[other_skill_3]

○ Fails to Meet Standards (1)
○ Below Standards (2)
○ Meets Standards (3)
○ Above Standards (4)
○ Exceeds Standards (5)
○ N/A

Other skill: __________________________

[other_skill_4]

○ Fails to Meet Standards (1)
○ Below Standards (2)
○ Meets Standards (3)
○ Above Standards (4)
○ Exceeds Standards (5)
○ N/A

Other skill: __________________________

[other_skill_5]

○ Fails to Meet Standards (1)
○ Below Standards (2)
○ Meets Standards (3)
○ Above Standards (4)
○ Exceeds Standards (5)
○ N/A

Other skill: __________________________

[other_skill_6]

○ Fails to Meet Standards (1)
○ Below Standards (2)
○ Meets Standards (3)
○ Above Standards (4)
○ Exceeds Standards (5)
○ N/A
Additional Comments:

Clinical Instructor: ____________________________
Date: ________________