HACKETTSTOWN REGIONAL MEDICAL CENTER
LABORATORY – POINT OF CARE POLICY MANUAL

Emergency Room Urine Dipstick by Clinitek Status Analyzer

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Effective Date: March 25, 2009
Policy No: POC ER 0001
Cross Referenced:
Origin: Point of Care Tests
Reviewed Date: 7/10; 11/11; 6/12
Authority: Cristina Hom, CLS (NCA) POC Coordinator
Revised Date: July 13, 2010

SCOPE: All certified clinicians of the Emergency Room department.

PURPOSE:
To provide a screening test that will aid in the diagnosis of various diseases in the areas of kidney function, urinary tract infections, carbohydrate metabolism and liver function with a faster turn around time.

POLICY:
1. Clinicians must be certified to perform the test. Initial certification is done during orientation followed six months on the first year and yearly thereafter.
2. Standard precautions must be observed.
3. Make sure each specimen container is labeled with patient information before testing begins.
4. Results must be entered in Cerner.
5. Results can be entered in the official ER POCT result form during downtime and/or if the patient is unregistered at the time of test. Symbols like (+) for positive or (-) negative are not allowed to be entered on the form as patient results, however POS or NEG abbreviations are acceptable.
6. Quality Controls Level 1 and Level 2 must be performed daily and with each new lot number of reagent strips. Results must be entered in the QC Log sheets. POC Coordinator will monitor the log sheets on a weekly basis. Use new sheet each time the quality controls and Multistick strips change lot numbers.
7. Quality Controls (Biorad) must be labeled with new expiration dates when opened (30 days expiration from the date opened, if kept at room temp).
8. Do not use quality controls and/or Multistix after their expiration dates.
9. No patient sample will be analyzed in this meter unless both levels of QC are performed and have passed.
10. If all results are negative, there is no need for confirmation.
11. If **blood, leukocytes, bilirubin, nitrite, and/or protein are positive**, the physician must order a complete urinalysis including a microscopic examination for confirmation.
12. In the event of machine malfunctioning, send all specimens to the laboratory until the POCC can troubleshoot the meter.

MATERIALS:
1. Clinitek Status Analyzer
2. Biorad Controls Level 1 and Level 2
3. Labeled urine specimen
4. Multistix 10 SG chem strips

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STORAGE:
Store Multistix 10 SG at room temperature. Do not use the strips after their expiration date. Do not remove the desiccant from the bottle. Protect against exposure to light, heat and ambient moisture to guard against altered reagent reactivity. Biorad controls can be stored at room temperature but expiration will change to 30 days after opening.

PATIENT PROCEDURES:

1. Make sure the urine specimen is collected in a dry and clean container with patient information. Mix well before testing. Ensure that the amount of liquid is adequate to cover all reagent pads.
2. Turn power **ON** on Clinitek Status analyzer and will calibrate automatically through self check.
3. Table insert will come out.
4. When the "Select" screen appears, touch the **Strip Test** screen button.
5. Enter Operator ID by typing in F**irst and last initials**.
6. The next screen displayed is **Patient Information** and touch **Enter New Patient.**
7. Touch **123 numeric button (to switch to numbers)** and enter patient's medical record or FIN number.
8. Remove one Multistick strip and replace the cap immediately.
9. Touch **START** and dip the strip into the urine sample.
10. Blot by touching the edge of the strip to paper towel to remove excess urine.
11. Place the strip gently onto the test table. **NOTE**: **Steps 9 thru 11 must all be done within 8 seconds.**
12. After 45 sec analysis is complete and results will be printed out.
13. Results will also be displayed on the screen.
14. Touch **DONE** when finished.
15. Dispose the Multistick strip properly.
16. Wipe table insert to remove any urine residue.
17. Enter results in Cerner for documentation and charges.

QUALITY CONTROL PROCEDURES:

1. Turn power **ON** on Clinitek Status analyzer.
2. Turn table insert so reagent strip holder is facing upwards.
3. When the "Select" screen appears, touch the **Strip Test** screen button.
4. Enter Operator ID by typing in **First and last initials**.
5. **Touch Enter New Patient** (or Touch Recall Patient and scroll to 01 or 02) enter 01 or 02 respectively from the levels of quality controls.
6. Touch **ENTER** when you have finished entering the ID number.
7. Remove one Multistick strip and replace cap immediately.
8. Touch **START** and place a drop of the control solution on each pad of the Multistick strip.
9. Blot by touching the edge of the strip to paper towel to remove excess control solution.

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10. Place the strip gently onto the test table. **NOTE: Steps 8 thru 10 must all be done within 8 seconds.**
11. After 45 secs analysis is complete results will be printed out.
12. Enter results on the log sheets for abnormal and normal and initial the sheet.
13. Dispose the Multistix strip properly.
14. Wipe the table insert to remove any excess of the control solution.

MAINTENANCE:

1. Remove insert and rinse both sides under running water at least once a day.
2. Dry thoroughly and replace insert.
3. Periodically clean the test table by following steps 1 and 2.

LIMITATIONS AND SENSITIVITY OF THE SIEMENS (Multistix 10 SG) REAGENT STRIPS:

TEST NAME	LIMITATIONS AND SENSITIVITY
Protein	**Limitations**: A visibly bloody urine may cause falsely elevated results. **Sensitivity**: 15-30 mg/dl albumin.
Blood	**Limitations**: Capoten (captopril) may reduce the sensitivity. Microbial peroxidase associated with urinary tract infection may cause a false positive reaction. **Sensitivity**: 0.015 – 0.062 mg/dl hemoglobin
Leucocytes	**Limitations**: Elevated glucose concentrations (>3g/dl) may cause decreased test results. The presence of Keflex, Tetracycline or high concentrations of oxalic acid may also Caused decreased test results. Positive results may occasionally be due to contamination of the specimen by vaginal discharge. **Sensitivity**: 5-15 white blood cells/hpf in clinical urine.
Nitrite	**Limitations**: A negative result does not rule out significant bacteriuria. False negative results may occur with shortened bladder incubation of the urine, absence of dietary Nitrate, or the presence of nonreductive pathological microbes. **Sensitivity**: 0.06 – 0.1 mg/dl nitrite ion.
Glucose	**Limitations**: Ketone bodies resuce the sensitivity of the test; moderately high ketone levels(40 mg/dl) may cause false negatives for specimens containing small amounts of glucose (75-125 mg/dl) but the combination of such ketone levels and low glucose levels is metabolically improbable in screening. **Sensitivity**: 75-125 mg/dl glucose.
Ketone	**Limitations**: False trace results may occur with highly pigmented urine specimens or those containing large amounts of levodopa metabolites. Compounds such as mesna (2-mercaptoethane sulfonic acid) that contain sulfhydryl groups may cause false positive results or an atypical color reaction. **Sensitivity**: 5-10 mg/dl acetoacetic acid.

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Bilirubin	**Limitations**: Indican(indoxyl sulfate) can produce a yellow-orange to red color response that may interfere with the interpretation of a negative or positive reading. Metabolites of Lodine may cause false positive. Atypical colors may indicate that bilirubin-derived bile pigments are present in the urine sample and may be masking the bilirubin reaction. These colors may indicate bile pigment abnormalities and the urine specimen should be tested further. **Sensitivity**: 0.4-0.8 mg/dl bilirubin.
pH	**Limitations**: Bacterial growth by certain organisms in a specimen may cause a marked alkaline shift (pH >8.0) usually because of urea conversion to ammonia.
Specific Gravity	**Limitations**:The Siemens SG test is dependent on ions in urine and results may differ fro those obtained with other specific gravity methods when certain nonionic urine constituen such as glucose are present. Highly buffered alkaline urines may cause low readings, whil the presence of moderate quantities of protein (100-750 mg/dl) may cause elevated readings.
Urobilinogen	**Limitations**: The test pad may react with interfering substances known to react with Ehrlich's reagent. False negative results may be obtained if formalin is present. The test i not a reliable method for the detection of porphobilinogen. Strip reactivity increases with temperature; the optimum temperature is 22-26º C.

REFERENCE:

1. Clinitek Status Analyzer Operator's Manual, 132387 Rev. 2008-05
2. Siemens Multistix 10 SG package insert.
3. Biorad qUAntify Control Level 1 and 2 package insert.