



Laboratory Communiqué

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The Laboratory Communiqué is a quarterly publication released by Billings Clinic Laboratory Services as an informational tool for medical staff and laboratorians.

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Urinalysis, Automated

The Hematology/Urinalysis Department in the hospital laboratory went live with the Siemens CLINITEK® AUWI System on May 6. This system combines the CLINITEK Atlas® Automated Urine Chemistry Analyzer and the Sysmex UF-1000i™ Urine Cell Analyzer. Together they offer complete, unattended operation from start to finish. Urinalysis testing performed at the West End and Heights Laboratories remains unchanged.

The urine chemistry continues to be the dry pad test measurement method using the Siemens Multistix strips. The color change on these strips is measured by reflectance photometry with dual readings at reactive and reference wavelengths. The specific gravity is measured by a refractive index method. The clarity of the specimen is measured by transmitted and scattered light.

The UF-1000i is a flow cytometer which automates the urine microscopic, thereby providing efficiencies in testing by reducing hands-on-time, minimizing manual urine microscopic analyses and improving overall TAT. The UF-1000i bases its objective analysis on both physical and chemical particle properties. The UF-1000i has the following features and benefits:

- Standardizes urine microscopics
- Reliable auto identification of normal samples eliminates the need for further manual steps
- Measures formed elements in urine by fluorescent flow cytometry
- Unmatched sensitivity with fluorescence, forward scatter, impedance and cluster analysis
- Automatically classifies 10 formed elements found in

**CLINITEK®
AUWI**

CPT Codes

Complete UA: 81001

Routine UA: 81003

**Microscopic Only:
81015**

**Chemical
Parameters Reported:**

Clarity
Color
Specific Gravity
pH
Bilirubin
Urobilinogen
Ketones
Glucose
Protein
Occult Blood
Nitrate
Leukocyte Esterase

**UF-1000i
Reported Parameters:**

RBC
WBC
Epithelial Cells
Hyaline Casts
Bacteria

Flagged Parameters:

Pathological Casts
Crystals
Small Round Cells
Sperm
Yeast

- urine
- Cell counting capabilities of up to 80,000 particles reduces review rate
- A separate bacteria channel for improved discrimination
- Temperature and pH normalization provides a more accurate result
- Analyzing more of the sample provides fully quantitative results that eliminates subjective interpretation

Interpretation:

Chemical (Multistix strip):

No change in reporting for Clarity, Color, Specific Gravity, pH, Bilirubin, Urobilinogen, Ketones, Glucose, Protein, Occult Blood, Nitrite and Leukocyte Esterase

Reference Ranges:

Glucose:	Negative
Bilirubin:	Negative
Protein:	Negative
pH:	5.0-9.0
Occult Blood:	Negative
Ketone:	Negative
Urobilinogen:	0.2-1.0 EU/dL
Nitrite:	Negative
Leukocytes:	Negative
Specific Gravity:	1.003-1.030
Color:	Yellow, Straw, Dark Yellow or Amber
Clarity:	Clear

Confirmation testing will continue to be performed manually on all positive bilirubin results with an Ictotest. Positive protein in a urine with a pH ≥ 8.5 will be confirmed with an Exton’s Reagent test.

Microscopic:

No change in reporting except for WBC and RBC which are now reported as whole numbers and not as a range as in the manual “scope” method. Any UF-1000i™ flagged parameter(s) will be reviewed manually by scope.

Reference Ranges:

WBC	< 5 cells/hpf (numerical)
RBC	< 5 cells/hpf (numerical)

Urine Drug Screen Testing

Drug Screen, Urine

- Used for emergent needs in the ED, SDC or Psych
- Performed with the MEDTOXScan Test System
- Drugs detected:
 - AMP
 - BAR
 - BZO
 - BUP
 - COC
 - MAMP
 - MTD
 - OPI
 - OXY
 - PCP
 - PPX
 - THC
 - TCA

Urine Drug Screen, Nursing POC

- Performed as a POC test in the physician office
- Performed with the NexScreen Cup
- Drugs detected:
 - AMP
 - BAR
 - BZO
 - COC
 - MDMA
 - MAMP
 - MTD
 - OPI
 - OXY
 - PCP

Billings Clinic Urine Drug Test Screening

There are two urine drug screening tests available. The use of each is dependent on the reason for the test and the location from which the test is ordered. Results obtained from these two drug screen are not intended to be used for legal purposes.

1. Drug Screen, Urine

This test is for drugs of abuse (DOA) and is ordered as needed for emergent situations in ED, SDC or Psych as Test #4129. This drug screen test can also be ordered by our outside labs for the same emergent situations as Test BCL #0157. For use as a DOA test, the detection limits have been set very low. This DOA test utilizes the MEDTOXScan® Test Drugs of Abuse Test System which has a 13 test configuration on a cassette and is read on the MEDTOXScan® Reader. Results are reported as negative or **presumptive positive**.

2. Urine Drug Screen, Nursing POC

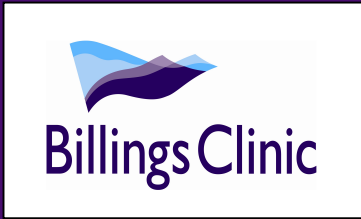
This test is a drug screen performed as a Point of Care (POC) test in the physician office. It is used to establish and monitor the safe prescribing of controlled substances such as pain medication for patients on a CSA plan (Controlled Substance Agreement). The test is performed with the NexScreen Cup™. This cup is a fast, qualitative, visually read competitive immunoassay method for screening without the need for instrumentation. This method employs a mixture of antibodies and antigens to selectively identify 12 specific drugs and their principle metabolites with a high degree of sensitivity. Results of this test are reported as negative or **presumptive positive**.

MedTox Drug Confirmation

Confirmation of presumptive positive results obtained with either of the tests, Drug Screen, Urine (DOA) or the Urine Drug Screen, Nursing POC can be ordered through MedTox Laboratories. This confirmation testing is performed by GC/MS, LC/MS or MS/MS. MedTox Laboratories offers technical support for questions through their ToxAssure Hotline 866-593-0157.

If confirmation of a presumptive positive result is needed, the following orderable should be used:

TCA
THC



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Billings Clinic
Orderable:

Name of Drug Confirmed at MedTox
Laboratories, Inc.

9616	Methadone Confirmation
9617	Barbiturates Confirmation
9618	Phencyclidine Confirmation
9619	Tetrahydrocannabinol Confirmation
9620	Cocaine Confirmation
9621	Propoxyphene Confirmation
9622	Opiate Confirmation
9623	Buprenorphine Confirmation
9624	Oxycodone Confirmation
9625	Benzodiazepines Confirmation
9626	Methamphetamine Confirmation
9627	Amphetamine Confirmation
9628	Tricyclics Confirmation

For any test not listed above, order the test as a Special Reference Test or call the Laboratory for assistance.

Normal Range Changes

Free T4

The Normal Range for Free T4 has been changed.

New Range: 0.7 – 1.48 ng/dL Old Range: 0.8 – 1.9 ng/dL

For more information about Billings Clinic Laboratory please call (406) 657-4060.
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