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| **UARC Urinalysis – Reflex to Urine Culture** | | | | | | |
| **Purpose** | This procedure provides instructions for PERFORMING URINALYSIS – REFLEX TESTING TO URINE CULTURE.  For detailed instruction on performing Urinalysis, see [URI 1.7 Performing Urinalysis](https://starnet.childrenshc.org/References/labsop/ua/c500/uri-1.7-performing-urinalysis.pdf) | | | | | |
| **Principle** | Performing Urinalysis with a reflex to urine culture, if indicated, will decrease laboratory workload by performing cultures only on positive specimens and improving antimicrobial stewardship by giving antimicrobials to patients with positive UA results.  Urinalysis includes the physical and chemical analysis of urine as well as the microscopic examination of urinary sediment after concentration if indicated. | | | | | |
| **Clinical Significance** | Reflexive testing for culture will be performed in the following situations;   1. Urine dipstick positive for Nitrites. 2. Urine dipstick positive for Leukocyte Esterase (trace or greater). 3. Greater than 5 WBC’s on spun urine. 4. Greater than 10 WBC’s on unspun urine. 5. Any urine positive for yeast. 6. Any patient less than 2 months old. | | | | | |
| **Policy Statements** | * This procedure applies to all laboratory technologists, section supervisor, and pathologist. | | | | | |
| **Materials** | **Equipment** | | **Reagents** | | | **Supplies** |
|  | * SIEMENS Clinitek Advantus™ Chemistry Analyzer * Microscope - bright field with 10x and 40x  Nikon E4000 microscope:  1. Analyzer Y-IA inserted in body of microscope 2. Polarizer with lambda-plate (see [Illustration A – Y-IA Analyzer and Polarizer with Lambda Plate](http://khan.childrensmn.org/Manuals/Lab/SOP/UA/Res/200663.pdf)) | | * SIEMENS Multistix® 10 SG Reagent Strips:  1. No preparation of reagents is required. 2. Each strip is stable and ready to use when removed from the bottle. 3. Initial and date the reagent bottle when opened. 4. The strips are read on the ClinitekAdvantus™ instrument and may also be read visually. 5. Store reagent strips at room temperature (15°-30° c [59°-86° f]) and out of direct sunlight. 6. Do not freeze. 7. Do not remove the desiccant from the bottle. 8. Do not touch the test areas of the reagent strips. 9. To avoid exposure to moisture, close vial immediately after removal of a strip. 10. Strips are stable in the original capped vial until listed expiration date. 11. 25% HCl, 500ml bottle (Ricca Chemical Co. Cat. # 3577-16)  * Use as is, pour off amount needed * Reagent stability is maintained the same as the original bottle  1. 10% NaOH, 500ml bottle (Ricca Chemical Co. Cat. # 7260-16)  * Use as is, pour off amount needed * Reagent stability is maintained the same as the original bottle | | | * Distilled water * 2mL plastic transfer pipettes * Kova Glasstic Slide * Clinitek printer paper * 12 mL plastic centrifuge tubes marked with 12 mL, 10 mL, 2.5 mL, 1 mL and 0.25 mL markings |
| **Sample** | 1. Acceptable specimens: 2. 10.0 mL of urine in a clean plastic container with screw cap, preferably first morning specimen 3. Label must be placed on the urine container (not lid) 4. Send to lab within 30 minutes 5. If testing will be delayed for more than one hour, refrigerate upon collection, stable up to 24 hours.  * Refrigeration provides adequate preservation for most chemical components with the exception of bilirubin and urobilinogen * Refrigeration may cause precipitation of amorphous urates or phosphates which may obscure the microscopic field * Allow the urine specimen to return to room temperature before testing * If the urine needs to be cultured, it should be refrigerated during transit and held refrigerated until cultured. * Samples collected in St. Paul should be sent to Minneapolis for culture by adding a minimum of 3.5cc to a gray Boric acid tube.   [Lab Test Directory, Microbiology/Virology Urine Culture Transport and Storage](https://www.childrensmn.org/References/Lab/microbioviral/urine-culture.pdf)   1. A minimum of 5.0 mL of urine is needed for Multistix® and spun microscopic.   Answer the appropriate required answer for the UARC under UTYPE, ( MSPU ).   1. A minimum of 1.0 mL of urine is needed for Multistix® and unspun microscopic.   Answer the appropriate required answer for the UARC under UTYPE, ( MICP ).   1. At physician request samples delayed in arriving at the lab will be tested, attach an appropriate comment   • Append: “-DELA” (specimen delayed in transport)   1. Unacceptable specimens: 2. Unlabeled 3. Labeled incorrectly 4. Specimens collected in a diaper 5. Specimens contaminated with feces 6. Specimens not refrigerated within one hour of collection (verified by the laboratory). 7. Specimens >24 hours old. 8. Notify unit/physician when a specimen is unacceptable; credit test in the computer (OER). | | | | | |
| **Result Reporting** | In Sunquest:     1. Double click the Desktop’s FlexiLab icon 2. Log into Sunquest 3. Click Urinalysis keyboard 4. Click OK if the boxed information is correct (keyboard = URCT) 5. Fill in the sample accession number in the yellow box <CR> 6. Click the OK button in the Loaded Previously Filed Data box 7. Data from the Clinitek Advantus™ appears  * Five results are required USG (specific gravity), URPH (pH), UCOL (color) and UCLA (clarity)  1. Click the QA Review tab  * Sunquest, in the background, reviews the results against rules to:   + - Perform billing UAO     - OR return to the Resulting tab for microscopic results     - UWBC, URBC, UTYPE ( MSPU or MICP ) are required results     - After required results plus other microscopic results are entered     - Click QA Review tab, UAM is billed and reflexive culture will be ordered if the   criteria have been met.   * + - Culture labels will print for Microbiology and should be delivered with the sample.  1. Click the Save button 2. Enter the next accession number or close the urinalysis keyboard when finished. | | | | | |
| **References** | 1. Bayer Multistix® 10 SG Reagent Strips package insert, revised 4/99, Bayer Corporation, Elkhart, IN 46515. 2. Bayer Multistix® 10 SG package insert #1022AD, 1992 Miles Inc., revised 7/93. 3. Chek-Stix Reagent Strips package insert, revised 12/90. Miles Inc., Diagnostics Division, Elkhart, IN 46515. 4. Clinitek® 500 Operating Manual, Second Edition, revised 5/01 Bayer Corporation Inc., Elkhart, IN 46515. 5. Henry, J.B., Clinical Diagnosis and Management by Laboratory Methods, 18th edition, W.B. Saunders Co., Philadelphia, 1991, pp. 419 - 431. 6. Howanitz, P.J., et al., Timeliness of Urinalysis, Arch Path Lab Med, Vol 121:1977, 667-671. 7. Lippman, R., MD, Urine and the Urinary Sediment, Second Edition, 1971. 8. National Committee for Clinical Laboratory Standards. Routine Urinalysis; Proposed Guideline. NCCLS Document GP16-P (ISBN 1-56238-125-3). NCCLS, 771 East Lancaster Avenue, Villanova, PA 19085, 1991. 9. NCCLS Document GP16-T Vol., 12 No. 26, December 1992. 10. Ross, D.L. and Neely, A.E., Textbook of Urinalysis and Body Fluids, Appleton-Century Crofts, Norwalk, Connecticut 1983. 11. Strasinger, S., Urinalysis and Body Fluids, Second Edition, F.A. Davis Co., Philadelphia, 1989, pp. 88 - 103. 12. SIEMENS Clinitek Advantus™ Operators Guide V.1.0 REF 06635228 (133898) Rev. D. 13. Leukocyte Esterase as Predictor of Urine Culture Result, Willis John Rieker, Eileen Reilly\*, Balamurugan Pandiyan, Samantha Lom and Andrew Merry   J Med Microb Diagn, an open access journal ISSN: 2161-0703 Volume 6 • Issue 4 • 1000264   1. Point-Counterpoint: Reflex Cultures Reduce Laboratory Workload and   Improve Antimicrobial Stewardship in Patients Suspected of HavingUrinary Tract  Infections. Journal of Clinical Microbiology February 2016 Volume 54 Number 2   1. Poor Predictive Ability of Urinalysis and Microscopic Examination to Detect Urinary Tract Infection   Joy D. Van Nostrand, MS, Alan D. Junkins, PhD, and Roberta K. Bartholdi, MS  © American Society of Clinical Pathologists Am J Clin Pathol 2000;113:709-713   1. Work up of Pediatric Urinary Tract Infection   Hillary L. Copp, MD, MS and Assistant Professor of Urology, University of California – San  Francisco  Bogdana Schmidt, MD, MPH Urology resident, University of California – San Francisco  Urol Clin North Am. 2015 November ; 42(4): 519–526. doi:10.1016/j.ucl.2015.05.011.   1. [Innovative Urinalysis Test Strips with ID Bands](http://usa.healthcare.siemens.com/point-of-care/poc-overview/innovative-urinalysis-test-strips-id-bands) | | | | | |
| **Historical Record** | **Version** | **Written/Revised by:** | | **Effective Date:** | **Summary of Revisions** | |
| 1 | Al Quigley | | 10/8/19 | Initial Version | |