<table>
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<th>Client</th>
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<td>Measure Title</td>
<td>AVOIDANCE OF PREOPERATIVE URINALYSIS FOR LOW RISK PATIENTS UNDERGOING NON-OBSTETRICAL, NON-GENITAL SURGERY</td>
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<td>Disease State</td>
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<td>Strength of Recommendation</td>
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| Organizations Providing Recommendation | American Society of Anesthesiologists  
American Society of Colon and Rectal Surgeons  
American Society for Gastrointestinal Endoscopy  
Institute for Clinical Systems Improvement  
University Hospital of Cleveland |
| Clinical Intent | To ensure that eligible members undergoing non-obstetrical, non-genital urinary surgery do not receive a preoperative urinalysis. |
| Physician Specialties (suggested) | Refer to PQSR 2009 Clinical Measures by Specialty. |

**Background**

- Prior to surgery, evaluation of a patient to assess risk of surgical complication is commonplace.
- However, the prevalence of unrecognized disease is very low in healthy patients and many laboratory tests are performed out of habit and medical concern.\(^1\) For example, in a study of 2,000 patients undergoing elective surgery, 60% of routine preoperative tests were ordered with no indication and only 0.22% of these tests revealed abnormalities that would affect surgical decisions.\(^2\)

**Reason for Indicated Intervention or Treatment**

- Physicians often order a preoperative urinalysis with the belief that the detection and elimination of a urinary tract infection decreases the risk of a surgical wound infection. They also may order the test to screen for underlying disease. Evidence indicates, however, that preoperative urinalysis is both cost-ineffective and of little utility in healthy patients.\(^2-7\)

**Evidence Supporting Intervention or Treatment**

- Importantly, no controlled trials have been published in this field. All available evidence reports the results of case-series.\(^6\)
- In one study, of 200 clean-wound, orthopedic, nonprosthetic knee procedures, no difference in the rate of wound infections was detectable between those patients with abnormal and
normal urinalysis test results. And although urinalysis was uniformly ordered resulting in a high prevalence of abnormal results (15%), physician-response was low to these results (29%).[3]

- Furthermore, a cost-effectiveness study of clean-wound knee procedures found that 4.58 annual wound infections could be prevented in this population using urinalysis at a cost of $1.5 million each leading the authors to conclude that it is 500 times more cost-effective to treat the cases of wound infection than to administer preoperative urinalysis.[4]
- In a retrospective study of 299 patients undergoing knee or hip arthroplasty, no correlation between asymptomatic bacteriuria and surgical infection was found.[5]
- In a systematic review of 6,740 urinalyses prior to surgical procedures in the areas ranging from orthopedics, cardiology, ENT, ophthalmology, neurosurgery, plastic surgery, urology, and general surgery, routine preoperative urinalysis was shown to produce abnormal results in 1–34.1% of patients but led to a change of management in 0.1–2.8% of patients. These data prompted the study’s authors to conclude that there is little or no apparent value in routine preoperative urinalysis as an opportunistic screening test for unrelated disease.[6]
- Finally, because preoperative testing in healthy patients can often lead to abnormal results that are not acted upon, these tests can increase medico-legal risk, not reduce it.[2]

**Clinical Recommendations**

- The American Society for Gastrointestinal Endoscopy does not recommend urinalysis prior to endoscopic procedures citing that there is no evidence to suggest that this would improve postoperative outcomes.[8]
- The American Society of Colon and Rectal Surgeons assert that urinalysis is contraindicated unless history and physical examination reveal a condition for which urinalysis is indicated. The ASCRS 2005 update states that “Before utilizing any specific risk assessment tools, a careful history, review of systems, and physical examination should be obtained.”[9, 10]
- The University Hospital of Cleveland notes in their guidelines that urinalysis should never be performed preoperatively.[11]
- The American Society of Anesthesiologists lists urinalysis as a test which can be performed preoperatively, but this decision is incumbent on physician discretion. The guidelines state: “Routine preoperative tests (i.e., tests intended to discover a disease or disorder in an asymptomatic patient) do not make an important contribution to the process of perioperative assessment and management of the patient by the anesthesiologist.”[13]
- The Institute for Clinical Systems Improvement Guideline for
Preoperative Evaluation does not recommend preoperative urinalysis and emphasizes that in most cases patients do not require preoperative testing if they are without acute illness or unstable illness.[14]


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