

A quality improvement project aimed to reduce the rate of contaminated urine samples in obstetrical patients receiving care at the Department of OB/GYN at Womack Army Medical Center (WAMC).

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Background

Asymptomatic bacteriuria (ASB) occurs in 5-10% of pregnant women, and is associated with preterm birth, low birth weight, lower fetal IQ, hypertension, pyelonephritis, acute kidney injury, and acute respiratory distress syndrome. The USPSTF and ACOG recommend screening pregnant women for ASB between 12-16 weeks gestational age. At WAMC, patients are instructed to collect a clean catch urine sample halfway through a single urination during which a dirty catch urine sample for gonorrhea/chlamydia (NAAT) is performed first. High urine contamination rates have been noted.

Objective

The purpose of this quality improvement project is to evaluate whether separating the collection of the voided urine sample for ASB and the test for NAAT into two separate collection times will decrease the rate of contaminated urine samples in the newly diagnosed obstetrical population in the Department of OB/GYN.

Methods

Urine samples from 199 randomly selected first-trimester obstetrical patients registered in January 2017 and 2018 to receive prenatal care within the WAMC Department of OB/GYN (prior to and after the change in collection method) were compared. Changes in contamination rates were analyzed with the χ^2 test of independence.

Results

The urine contamination rate decreased from 54.1% in January 2017 to 36.7% in January 2018 following our intervention ($p=0.0147$). This led to decreased repeat urine sample collection from 57.1% to 40.5%, although this trend was not statistically significant ($p=0.942$). The contamination rates of the repeat urine sample collection was 41.2% in 2017 and 73.7% in 2018 ($p=0.0230$). Of all non-contaminated samples, 11.1% confirmed bacteriuria.

Conclusions

Separating the collection of urine samples for evaluation of ASB and NAAT significantly reduces the number of contaminated urine specimens collected from the new obstetrical population at the WAMC Department of OB/GYN. Such a simple change in procedure has the potential to dramatically decrease ASB-related complications of pregnancy.