

Fig. 1.

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10-Year Trends in Urine Testing and Treatment in Patients with Spinal Cord Injury: An Opportunity for Targeted Stewardship

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Background: Guidelines regarding asymptomatic bacteriuria (ASB) have consistently recommended against screening and treatment in most circumstances. However, screening of patients with spinal cord injury (SCI) is common practice and in some cases is a formal protocol at the organizational level. A previous study found that more than one-third of patients with ASB detected on routine screening cultures performed at annual visits in 2012 received antibiotics. However, the role of antibiotic stewardship has become more prominent over the last decade. We hypothesized that diagnostic and therapeutic stewardship efforts may be impacting the practice of annual urine-culture screening for SCI patients. We evaluated urine culture screening and treatment rates over a 10-year period. **Methods:** Patients with SCI seen in the VA Boston HCS for an annual exam in 2018 were eligible for inclusion and formed the baseline cohort for this study. Annual visits for the cohort over a 10-year period (January 1, 2009–December 31, 2018) were included in the analysis. Electronic data collection and manual chart review were utilized to capture outcomes of interest including urine culture, antibiotic prescriptions and indication within 15 days, and documentation of urinary or infectious symptoms. The main outcomes were (1) rate of urine cultures performed ± 3 days of the visit, (2) rate of antibiotic treatment in asymptomatic patients, and (3) trend over time of urine culturing and treating. The χ^2 test for trend was used to compare rates over time. **Results:** In total, 1,962 annual visits were made by the 344 unique patients over the 10-year period and were available for analysis. Among these, 639 (32.6%) visits had a urine culture performed within 3 days. The proportion of visits with a collected culture decreased from (109 of 127) 85.8% of

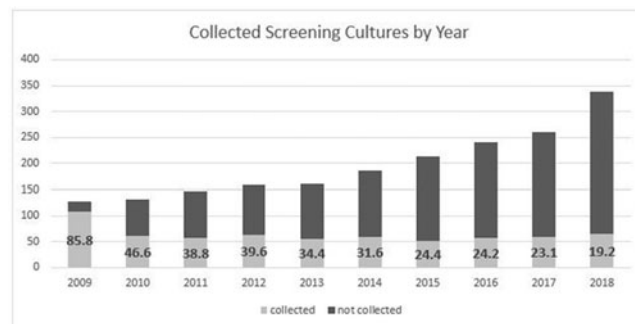


Figure 1: Collected urine cultures by year, percent of total visits within column

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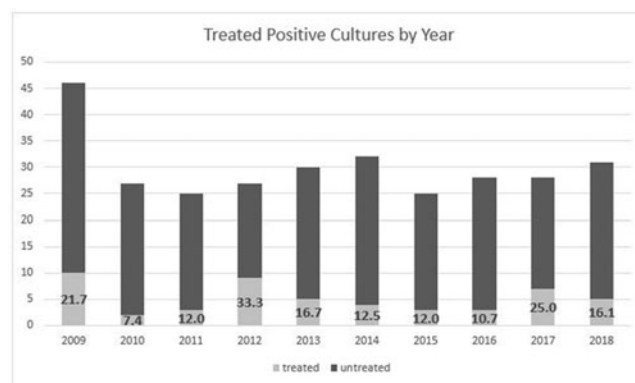


Figure 2: Treated cultures out of total positive cultures per year, percent represented within column

Fig. 2.

visits in 2009 to (65 of 338) 19.2% of visits in 2018, $P \leq .001$ (Fig. 1). In the treatment analysis, 39 visits were excluded for active symptoms, concern for uncontrolled infection, or prophylaxis as antibiotic indication. Among 600 remaining screening cultures, 328 had a bacterial pathogen or $>100,000$ mixed colonies consistent with ASB. Overall, 51 patients (17%) received antimicrobials. The rate of antibiotic treatment for ASB did not significantly decrease over time $pP = 0.79$ (Fig. 2). **Conclusions:** Over a 10-year period of annual SCI visits, the proportion of visits with a urine culture performed as routine screening significantly and consistently decreased. However, the rate of treatment for positive urine cultures remained consistent. These data support targeted diagnostic stewardship in this population to reduce unnecessary antibiotic use.

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22 -Year Results of an Intensive Care Unit Infection Control Program in Ribeirao Preto, Brazil

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