

Fig. 1.

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Poster Presentation

**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  $\pm 3$  days of the visit, (2) rate of antibiotic treatment in asymptomatic patients, and (3) trend over time of urine culturing and treating. The  $\chi^2$  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

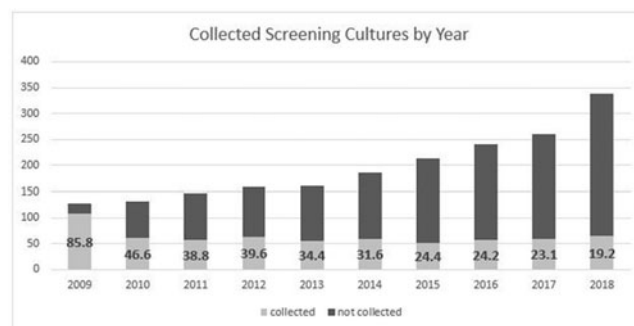


Figure 1: Collected urine cultures by year, percent of total visits within column

Fig. 1.

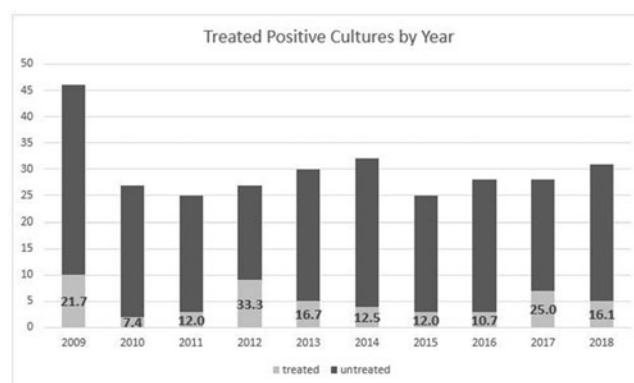


Figure 2: Treated cultures out of total positive cultures per year, percent represented within column

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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Table 1.

Years	Total HAI Rates	CAUTI Rates	CLABSI Rates	VAP Rates	HH Observations/Compliance Rate (%)	CVC Care Observations/Compliance Rate (%)	Oral Care Observations/Compliance Rate (%)
1997–2000	39	22.3	ND	47	ND	ND	ND
2001–2009	33.8	12.7	6.16	21.21	ND	ND	ND
2010–2014	15.48	7.6	6.4	6.56	3,882 (52)	NA	ND
2015–2019	11.54	3.38	1.01	6	10,687 (86)	5,636 (92)	6,412 (80)

**Background:** Healthcare-associated infection (HAI) control programs have improved patient care all over the world. Our program was implemented in 1997 in a general intensive care unit (ICU) based upon surveillance of HAI with regular infection rates feedback to the ICU team and implementation of best practices such as hand hygiene (HH) and oral care for ventilated patients, optimal care, and early removal of invasive devices. **Objective:** To report our decreasing HAI rates in the past 22 years. **Methods:** Hospital Sao Francisco 20-bed ICU admits 120–140 surgical and clinical patients monthly, with 90% occupancy. The HAI infection control team implemented HAI surveillance and developed several protocols for HAI prevention. In the past 5 years, ICU personnel initiated the collection of several indicators using random direct observations of HH compliance, central venous catheter correct care, and appropriated oral care, among others. HAI definitions followed Brazilian Health Ministry HAI definitions and were expressed as infections per 1,000 patient days (total HAI rate) and device-related infections per 1,000 device days. Catheter-associated urinary tract infection (CAUTI), central-line-associated blood stream infection (CLABSI) and ventilator-associated pneumonia (VAP) rates are reported here. The study period spanned January 1997 to August 2019. Measurement of antibiotic utilization (ie, meropenem, vancomycin, and piperacillin-tazobactam) was calculated by dividing the of antibiotic consumed vials by the daily defined dose and patient days. **Results:** The total HAI, CAUTI, CLABSI, and VAP rates dropped 70%, 85%, 84%, and 87%, respectively, from 1997 to 2019 (Table 1). From 2009 to 2019, we detected decreases in hospital use of meropenem from 52 to 38, in vancomycin from 50 to 40, and in piperacillin-tazobactam from 144 to 88. **Conclusions:** HAI control programs can be effective in ICUs, with impressive results, but it requires time and considerable effort. Data on compliance with basic infection control measures should accompany HAI data and should be shared with the ICU team because ICU team participation is essential to keeping the program alive. Broad-spectrum antibiotics use also decreased, with potential benefits to the hospital flora.

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#### 100% Single-Patient Rooms and Environmental Contamination With Highly Resistant Microorganisms: The MOVE Study

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**Background:** Studies have shown that patients colonized with highly resistant microorganisms (HRMO) contaminate the hospital environment, and that transmission from contaminated environments to patients occurs. In May 2018, the Erasmus MC University Medical Center, Rotterdam, moved from a hospital with mostly multiple-occupancy rooms to a new hospital with 100% single-patient rooms with private bathrooms. This move provided the unique opportunity to determine environmental contamination before the new hospital was open for admissions and thereafter and to compare the environmental contamination to the number of patients colonized with HRMO. **Method:** Environmental sampling took place twice in the old building and 12 times in the new building, from 2 weeks before to 15 months after relocating patients. At each moment, ~306 samples were taken from 13 locations (eg, nightstands, sinks) in 40 patient rooms. Samples were screened for *Staphylococcus aureus* (methicillin-susceptible [MSSA] and methicillin resistant [MRSA]) and highly resistant *Pseudomonas aeruginosa*, *Acinetobacter baumannii*, *Enterococcus faecium*, and Enterobacteriales. During the study period, January 1, 2018, until August 31, 2019, all clinical samples positive for HRMO were included. **Results:** Environmental sampling revealed that 29 of 724 (4.0%) locations were positive for HRMO in the old building, whereas 4 of 3,358 (0.1%) samples in the new building were positive for HRMO ( $P < .001$ ). In the old building, 14 of 29 locations were positive for extended-spectrum  $\beta$ -lactamase (ESBL)-producing bacteria and 15 were positive for carbapenemase-producing bacteria. In the new building, 3 of 4 positive samples were positive for vancomycin-resistant *E. faecium* (VRE), 1 was positive for ESBL-producing *K. pneumoniae*. For both HRMO, no carriers were detected. In the old building, 145 of 12,256 adult patients (1.2%) had clinical samples positive for HRMO, compared to 561 of 38,397 (1.5%) in the new building, a small but significant increase ( $P = .02$ ).