

Presentation Type:

Poster Presentation - Poster Presentation

Subject Category: Infection Control in Low and Middle-Income Countries**An infection prevention and control program established in the wake of the Ebola epidemic: Where are we, and how well are we doing?**

Bobson Fofanah; Christiana Conteh; Victoria Katawera and Ibrahim Franklyn Kamara

Background: Infection prevention and control (IPC) is a clinical and public health discipline based on a scientific approach and practical preventive and control measures. During the 2014–2016 West African Ebola outbreak, the high number of healthcare worker infections was attributed to inadequate IPC in Sierra Leone. This stimulated the establishment of national and subnational IPC programs. Since then, IPC has remained a priority to improve the health systems and strategic interventions during public health emergencies. Therefore, we conducted a detailed review to assess the status of the IPC programs. **Methods:** A descriptive analysis of the status of IPC programs in Sierra Leone was done using data from IPC assessments conducted in 2022 by the national IPC team, reviews of reports on program implementation, and experts' objective opinions. **Results:** *Performance.* The national IPC assessment revealed strengths in 4 of 6 WHO IPC core components, with an overall score of 61% positioned at the 'intermediate' level of implementation. The best-performing component was 'IPC guidelines' (92%) with evidenced-based guidelines being developed and implemented over the years. Secondly, 'Education and training' (71%) made progress in basic and advanced IPC training, including the development of a preservice training curriculum. Also, 'monitoring and audit and feedback' (69%) and 'IPC program' (61%) met the basic requirements of an established Monitoring & Evaluation (M&E) system. Similar progress was made at the healthcare facility level, but with major gaps in 'workload, staffing, bed-occupancy' and 'safe or built environment.' *Sustainability efforts.* Evidence-based data on IPC have always been scarce due to a limited capacity to conduct IPC research. The Structured Operational Research and Training Initiative (SORT-IT) on antimicrobial resistance has helped promote evidence-informed decisions and build OR capacity that is relevant to improving program performance. In 2019, Sierra Leone instituted in-country production of alcohol-based handrub and liquid soap as a strategic intervention for providing hand hygiene products for use in healthcare facilities. This intervention was essential during the peak of the COVID-19 pandemic. Although most aspects of IPC implementation are government led with strong leadership support, stable funding and sustainability planning are yet to be achieved and will be crucial for long-term success. **Conclusions:** Most aspects of the IPC core components have been well implemented at the national level since the establishment of the IPC program. However, the program should continue improving the scope and quality of implementation and focus on the development of long-term plans to sustain existing gains and further

improve on gap areas at the national level and especially the healthcare-facility level.

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Subject Category: Infections in Immunocompromised Patients**Trajectories of SARS-CoV-2 viral shedding among admitted patients at a tertiary-care center in California, 2020–2022**

Ralph Tayyar; Melanie Kiener; Jessica Ferguson; Jane W. Liang; Gustavo Contreras Anez; Guillermo Rodriguez Nava; Caitlin A. Contag; Alex Zimmet; Krithika Srinivasan; John Shepard; Benjamin A. Pinsky; Lucy Tompkins; Aruna Subramanian and Jorge Salinas

Background: SARS-CoV-2 viral load decreases over time after illness onset. However, immunocompromised patients may take longer for viral load decrease or have a more erratic viral-load trajectory. We used strand-specific assay data from admitted patients to evaluate viral-load trajectories after illness onset. **Methods:** We reviewed records of hospitalized patients with a positive SARS-CoV-2 PCR and tested using the strand-specific SARS-CoV-2 PCR during July 2020–April 2022. At Stanford Healthcare, we use a 2-step reverse real-time polymerase chain reaction (rRT-PCR) assay specific to the minus strand of the SARS-CoV-2 envelope gene to assess infectivity. Restricting our analysis to each patient's first strand-specific assay, we used logistic regression models to compare patients with single versus multiple assays. Among patients with multiple tests, we compared those who had an upward trajectory in cycle threshold (Ct) values (a surrogate of decreasing viral load) versus those who did not. We analyzed presence of symptoms, immunocompromised state, immunosuppression reason, and severe COVID-19 leading to ICU care in univariate and multivariate models that further adjust for additional covariates. Significant differences were assessed using logistic regression odds ratios and an α level of 0.05. **Results:** In total, 848 inpatients were included. Among them, 703 were tested only once and 145 were tested 2–6 times. The longest duration of minus-strand detection was 163 days. In univariate analyses, patients with a single minus-strand assay had lower odds of being symptomatic (OR, 0.55), of being immunocompromised (OR, 0.58), and of being admitted to the ICU with severe COVID-19 (OR, 0.49). In the multivariate analysis, being admitted to the ICU with severe COVID-19 was the only significant variable associated with having >1 test (OR, 2.44). Among patients who had multiple strand-specific SARS-CoV-2 assays, 119 had upward minus-strand trends of Ct values (as expected) and 26 did not. Being immunocompromised was associated with nonrising minus-strand CT values (OR, 33.3) when holding all other covariates in the model constant. **Conclusions:** Immunocompromised patients with COVID-19 tend to actively replicate for longer and have unexpected viral trajectories compared to immunocompetent patients. Among immunocompromised patients, suspension of transmission-based precautions may require a case-by-case evaluation.

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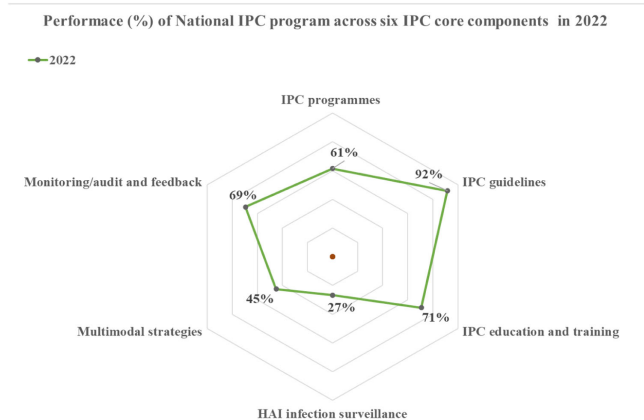
Presentation Type:

Poster Presentation - Poster Presentation

Subject Category: Infections in Immunocompromised Patients**"Acute urinary antibiotics"—A simple metric to identify outpatient antibiotic stewardship opportunities in renal transplant**

Alex Zimmet; David Ha; Emily Mui; Mary Smith; William Alegria and Marisa Holubar

Background: *International Classification of Diseases, Tenth Edition* (ICD-10) data help track outpatient antibiotic prescribing but lack validation in immunocompromised populations or subspecialty clinics for this purpose. Asymptomatic bacteriuria (ASB) and urinary tract infection (UTI) are



Classification of Outpatient Antibiotic Prescriptions for Patients Who Received Renal Transplant, 2018-2021

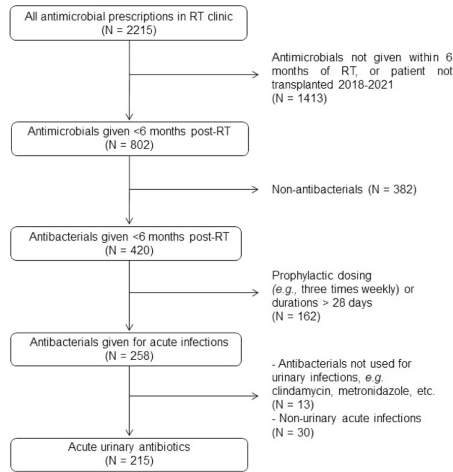


Table 1. Performance of Algorithmic Labeling of Acute Urinary Antibiotics in Patients Within 6 Months of RT, 2021.

	AUA Label	No AUA Label
Documented intent to treat ASB or UTI	49 (83% positive percent agreement)	2 (false negatives)
No intent to treat ASB or UTI	10 (false positives)	69 (97% negative percent agreement)

systematic identification of AUA to enable practical implementation. **Methods:** We examined RT clinic visit and telemedicine encounters from 2018 to 2021 conducted 1 month after transplant. This project was deemed non-human-subjects research by the Stanford Panel on Human Subjects in Medical Research. **Results:** The analytic cohort included 420 antibacterial prescriptions from 408 encounters (Fig. 1). Of 238 patients, 136 (57%) were male and 112 (47%) were Hispanic or Latino. The most common primary ICD-10 code was Z94.0 (kidney transplant status) (N = 302 of 408 encounters, 75%); 26 encounters (6%) were coded for UTI (eg, N39.0, urinary tract infection, site not specified); and 214 encounters (53%) had multiple ICD-10 codes. The R82.71 code (bacteriuria) was never used. However, 215 prescriptions (51%) were classified as AUA (Fig. 2). The validation cohort included 130 prescriptions; 59 (45%) were classified as AUA and 51 (39%) had documented intent to treat ASB or UTI (positive percent agreement, 83%; negative percent agreement, 97%) (Table 1). For patients >1 month after transplant, the positive percent agreement was 95% and the negative percent agreement was 98%. Of 51 patients receiving AUA, 32 (63%) were asymptomatic despite frequently having a code for UTI (Fig. 3). **Conclusions:** ICD-10 coding may not be helpful in monitoring antibiotic prescribing in RT patients. The AUA metric offers a practical alternative to track antibiotic prescribing for urinary syndromes and reliably correlates with physician intent. Monitoring AUA prescribing rates could help identify opportunities to optimize antibiotic use in this complex outpatient setting.

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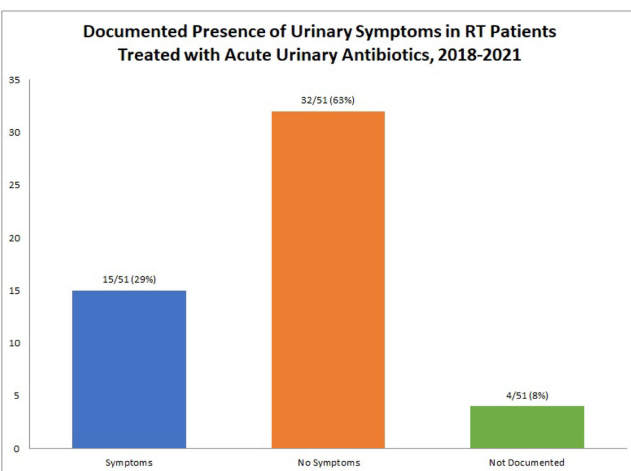
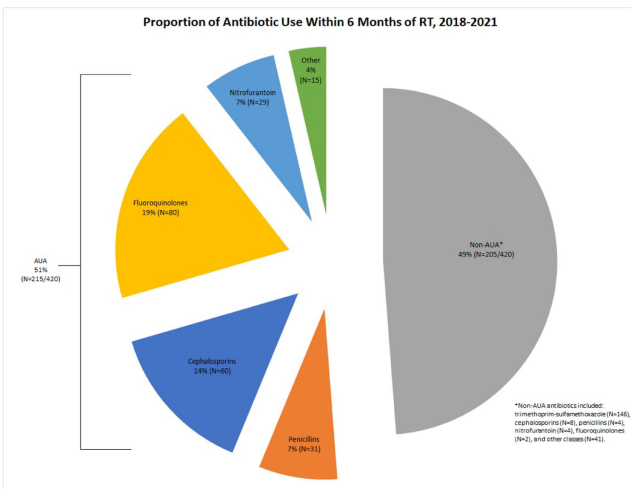
Poster Presentation - Poster Presentation

Subject Category: Long-term Care

Central-line team effort: Recognizing problematic central-line insertion sites in nursing homes

Kristine Nguyen; Raveena D. Singh; Shruti Gohil; Raheeb Saavedra; John Billimek; Steven Tam and Susan Huang

Background: Recognizing problematic central-line insertion sites is an important activity for CNAs, LVNs, and RNs in nursing homes (NHs). Although CNAs are not responsible for assessing central lines, they are often the first line of defense for noticing and relaying problems with a line because of the greater amount of time they spend with residents. We sought to assess how well CNAs, LVNs, and RNs could identify problematic insertion sites in NHs. **Methods:** We conducted a prospective observational study of central-line care in 8 NHs in Orange County, California. A convenience sample of central lines with a range of problematic elements was selected for quality improvement purposes. Research staff used standardized observation forms to evaluate presence of redness, cloudy drainage, and dressing integrity and change date. NH CNAs, LVNs, and RNs were asked to directly observe devices and to comment on problems or concerns. Participants were also asked open-ended questions about elements for a “picture-perfect line” and standard frequency of line checks and dressing changes. Failures to recognize existing problematic elements were tabulated for CNAs and LVNs or RNs separately. **Results:** In total, 50 CNAs (nursing home range, 3–6) and 50 LVNs and RNs (NH range, 4–6) directly observed lines with 131 problematic elements, including redness (N = 36), cloudy drainage (N = 30), peeling dressings (N = 29), and inappropriately dated dressing (N = 36). Failure to identify problematic elements involved redness [CNAs (50%) and LVNs or RNs (53%)], cloudy drainage [CNAs



important stewardship targets in renal transplant (RT) patients, but they may require alternative metrics to best monitor prescribing patterns. We describe ICD-10 utilization for RT clinic encounters in which antibiotics were prescribed. We developed a metric classifying “acute urinary antibiotics” (AUA) to track antibiotic use for ASB and UTI, and we validated