

a baseline low UC DUR, successful implementation of female external catheters further modestly reduced UC DUR and was associated with a 61% decrease in CAUTI among females in the ICU but not in wards. Further interventions to better identify appropriate patients for female external catheters may improve patient safety and prevent patient harm.

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**Presentation Type:**

Poster Presentation

**Improvement of Adequacy of Empirical Antimicrobial Therapy in *Escherichia coli* Bacteremia of Urinary Source in Catalonia (VINCat-PROA)**

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**Background:** The antibiotic use optimization program (PROA) in Catalonia (Spain) is part of the surveillance program for nosocomial infections in hospitals in Catalonia (VINCat). Despite the existence of guidelines for the treatment of urinary tract infections in hospitals, adherence to them is not guaranteed. **Objective:** Our objective was to evaluate the adequacy of empirical antimicrobial therapy to local guidelines in bacteremia caused by *Escherichia coli* of urinary source within the PROA-VINCat program during a 3-year period. The impact of a voluntary survey asking for evaluating local results and implementing correction measures was also analyzed. **Methods:** Multicentric prospective observational study including all episodes of *E. coli* bacteremia of urinary source between May 2017 and September 2019, in adult hospitalized patients in 45 Catalan hospitals. Adequacy of the empirical therapy to local guidelines was one of the prospectively recorded items. A survey evaluating local results of 2017–2018 and asking for possible correcting measures was sent to the participating centers at the end of 2018. Percentages of adequacy of empirical antimicrobial therapy in 2017, 2018, and 2019 were compared by means of  $\chi^2$  test. **Results:** Overall, 3,804 episodes of bacteremia were recorded: 845 in 2017, 1,861 in 2018 and 1,098 until September 30, 2019. Globally, adequacy of empirical therapy to guidelines increased from 73.7% in 2017 to 78.2% in 2019 ( $P = .06$ ). Interestingly, in the 24 hospitals that responded to the voluntary survey, the adequacy of empirical therapy increased significantly from 72.9% in 2017 to 79.9% in 2019 ( $P = .009$ ). In hospitals that did not respond, adequacy remained the same over the years (76.7% in 2017, 75.1% in 2019;  $P = .90$ ). Correction measures applied were: meeting with the antimicrobial stewardship team to evaluate the results (100%), review of local resistance rates (62%), review of local guidelines (58.3%), improving guidelines dissemination (75%), sessions for improving guidelines adherence (58%), and analysis of adherence to guidelines after education (65%).

**Conclusions:** In the empirical treatment of *E. coli* bacteremia of urinary source, adequacy to local antimicrobial therapy guidelines improved from 2017 to 2019, but only in hospitals answering a voluntary survey regarding correcting measures for improving adequacy. Adherence to antimicrobial stewardship proposals improves indicators at local and regional level.

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**Infection Control, Antimicrobial Consumption, and Hospital-Acquired *Clostridioides difficile* Infection in Acute-Care Hospitals in Catalonia**

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**Background:** Hospital-acquired *Clostridioides difficile* infection (HA-CDI) is a major infection control challenge. Using whole-genome sequencing, <40% of HA-CDI cases have been estimated to have been acquired from other inpatient cases. Huge regional variations have been described depending on the prevalence of epidemic ribotypes. We hypothesized that, according to the geographical area, variations in HA-CDI rates between hospitals could be attributable either to differences in infection control policies or to antimicrobial consumption. **Objectives:** To assess the association of HA-MRSA rates (a surrogate marker of infection control policies) and antimicrobial consumption with HA-CDI incidence from 2011 to 2018 in hospitals reporting at the VINCat-program (Infection Control and Antimicrobial Stewardship Catalan Program). **Methods:** Data on 45 hospitals in Catalonia (with 70.5% of all adult acute-care hospital beds) reporting antimicrobial consumption, HA-MRSA, and HA-CDI new cases to the VINCat-program since 2011 to 2018 were analyzed. To report antimicrobial consumption, the Anatomical Therapeutic Chemical Classification (ATC) defined daily dose (DDD) index 2018 was used. Participating hospitals were classified into 3 groups according to size: group 1 (>500 beds), 9 hospitals; group 2 (500–200 beds), 15 hospitals; and group 3 (<200 beds), 21 hospitals. The number of hospitalization days recorded at the participating hospitals increased from 2,828,101 in 2011 to 3,201,680 in 2018. To analyze the association between HA-MRSA rate,

antimicrobial consumption and the rate of CDI-HA, a Poisson regression model was used. HA-CDI annually new cases have been defined as a dependent variable, the stays as an offset of the model and the HA-MRSA rates and antimicrobial consumption (measured in DDD) as independent factors. The exponents of model coefficients are equal to incidence rate ratios (IRR). Results: The regression model showed an association of with antimicrobial consumption with HA-CDI (IRR,1.05; 95% CI, 1.03–1.07;  $P < .001$ ) and a lack of association with HA-MRSA (IRR, 0.83; 95% CI, 0.46–1.48;  $P = .52$ ). **Conclusions:** The HA-CDI incidence rate grew annually by 5% for an increase of 1 DDD in annual antibiotic consumption. No association HA-MRSA rates was detected, suggesting that antimicrobial stewardship programs are urgently needed to improve the control of HA-CDI in Catalonia, a geographical area with a low prevalence of epidemic ribotypes.

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#### Presentation Type:

Poster Presentation

#### Infection Preventionist Run *Clostridioides difficile* Testing Diagnostic Stewardship Protocol- Experience From a Rural Community Hospital

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**Background:** Distinguishing active *Clostridioides difficile* infection (CDI) from asymptomatic colonization remains a challenging task in the era of PCR testing. Inappropriate testing leads to overtesting and overdiagnosis, inadvertent treatment, and isolation in addition to laboratory identified (LabID) events, leading to increased incidence to hospital-onset CDI (HO-CDI). The institution has a

nurse-driven *C. difficile* test ordering protocol, and we noted a significant increase in the HO-CDI incidence in 2017 due to inappropriate testing, with rates as high as 0.94 per 1,000 patient days.

**Methods:** In September 2017, a multidisciplinary team reviewed and initiated algorithm-based testing with mandatory audit and review by infection preventionists (IPs) under the guidance of an ID physician of all ordered tests. They reviewed the adequacy and legitimacy of order for multiple parameters, including minimum 3 loose stools in 24 hours, use of laxatives in last 24 hours, consistency of the sample, presence of at least 1 clinical parameters (ie, fever, abdominal pain, leukocytosis, sepsis, or septic shock), recent or concomitant antibiotic use, recent PCR testing in the last 14 days, and chart review for medical and/or surgical history. The IPs served as the gatekeepers to testing and rejected the samples that were deemed inappropriate. Ambiguous cases were discussed with the ID specialist. On the microscope lab side, all specimens sent were batched to be run twice a day at 8:30 A.M. and 2:30 P.M., and testing was performed only on the samples cleared by infection preventionists. **Results:** The number of PCR tests completed in the comparison quarter of 2016 was 220, which decreased to 157 tests in 2017 with a reduction of 28%. After a full year of implementation of the diagnostic stewardship protocol, the number of completed PCR tests decreased to 626 from 940 PCR tests in 2016, with an overall 34% decrease in testing. In the year following the implementation of diagnostic stewardship, HO-CDI decreased from 60 events in 2017 to 43 events in 2018, with a reduction of 28%. Subsequently, HO-CDI further decreased in 2019 from 43 to 28, with a reduction of 35%. Since the implementation of the project in 2017, HO-CDIs have decreased by 54% overall. The reduction in 314 *C. difficile* PCR tests in the first year led to a savings of \$8,300 in laboratory testing supplies. The reduction of HO CDI by 17 led to cost avoidance of \$293,420. **Conclusions:** Our experience shows that the IP-run diagnostic stewardship program was highly successful in streamlining testing, with cost savings on several fronts.

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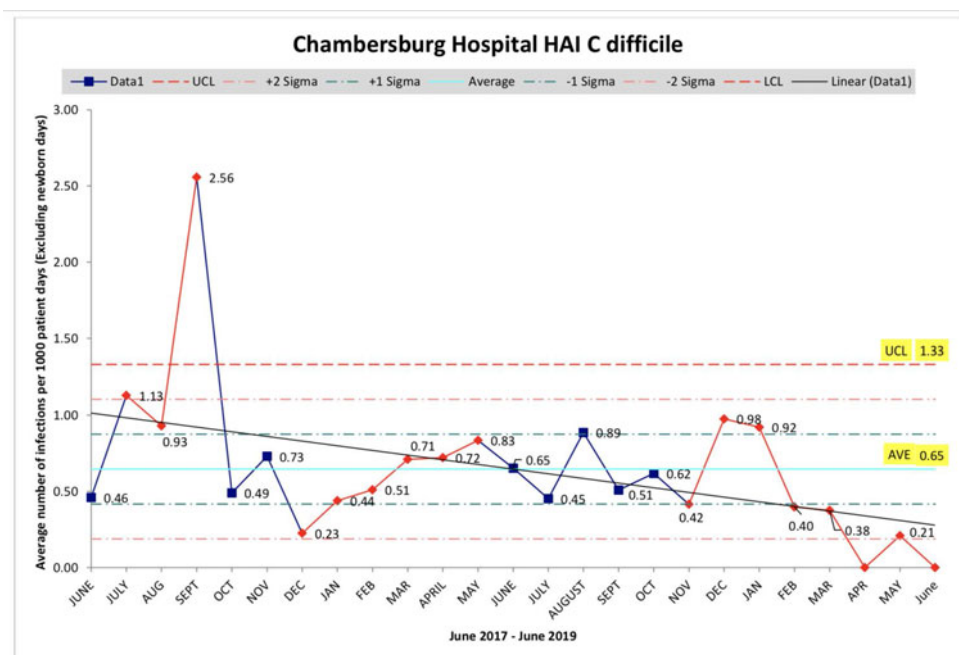


Fig. 1.