

Fig. 1

conditional logistic regression modeling estimated the risk of CLABSI attributed to concurrence of >1 day. To evaluate in Cox proportional hazards regression of time to CLABSIs, we also analyzed patients as unique central-line episodes: low risk (ie, ports, dialysis central lines, or PICC) or high risk (ie, temporary or nontunneled) and single versus concurrent. **Results:** In total, 64,575 central lines were used in 50,254 encounters. Among these patients, 517 developed a CLABSI; 438 (85%) with a single central line and 74 (15%) with concurrence. Moreover, 4,657 (9%) patients had concurrence (range, 6%–14% by hospital); of these, 74 (2%) had CLABSI, compared to 71 of 7,864 propensity-matched controls (1%). Concurrence patients had a median of 17 NHSN central-line days and 21 total central-line days. In multivariate modeling, patients with more concurrence (>2 of 3 of concurrent central-line days) had a higher risk for CLABSI (adjusted risk ratio, 1.62; 95% CI, 1.1–2.3) compared to controls. In survival analysis, 14,610 concurrent central-line episodes were compared to 31,126 single low-risk central-line episodes; adjusting for comorbidity, total parenteral nutrition, and chemotherapy, the daily excess risk of CLABSI attributable to the concurrent central line was ~80% (hazard ratio 1.78 for 2 high-risk or 2 low-risk central lines; hazard ratio 1.80 for a mix of high- and low-risk central lines) (Fig. 1). Notably, the hazard ratio attributed to a single high-risk line compared to a low-risk line was 1.44 (95% CI, 1.13–1.84). **Conclusions:** Since a concurrent central line nearly doubles the risk for CLABSI compared to a single low-risk line, the CDC should modify NHSN methodology to better account for this risk.

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Poster Presentation

Trends of Adult Antimicrobial Hospital Consumption in Catalonia (Spain) from 2008 to 2018

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Background: Antimicrobial resistance is a disturbing problem in the health system. A relationship between the use of certain antimicrobials and a resistance increase has been proposed. Since this phenomenon is not usually attributed to specific uses of antimicrobials but preferably to its evolution over the years, the analysis of the antimicrobial consumption over time can justify the epidemiological situation of a given region in terms of resistance and possible increases and decreases for specific microorganisms. The objective of this study was to analyze the evolution of the use of antimicrobials in Catalonia during 2008–2018 through the VINCAT program (Infection Control and Antimicrobial Stewardship Catalan Program). **Methods:** The number of hospitals participating in the VINCAT increased from 46 in 2008 to 63 in 2018 (ie, 68.8% and 85.7% of all adult acute-care hospital beds in Catalonia, respectively). Hospitalization days recorded at the participating hospitals increased from 2,991,053 in 2008 to 3,714,938 in 2018. The Anatomical Therapeutic Chemical Classification (ATC) defined daily dose (DDD) index was used for monitoring antimicrobial consumption. Simple linear regressions were performed, the linear relationship was checked by ANOVA tests, and the Pearson correlation (P_c) coefficients were obtained. Values of $P \leq .05$ were considered statistically significant. **Results:** From 2008 to 2018, there was a statistically significant increase of global antibacterial consumption (65.50 vs 71.73 DDD per 100 bed days; $P = .001$) and antimycotic consumption (3.09 vs 3.45 DDD per 100 bed days, $P = .012$) due to an increase of consumption in the surgical units. At the same time, there was a decrease in the consumption of antimycotics in the medical units (4.35 vs 3.90 DDD per 100 bed days; $P = .029$).

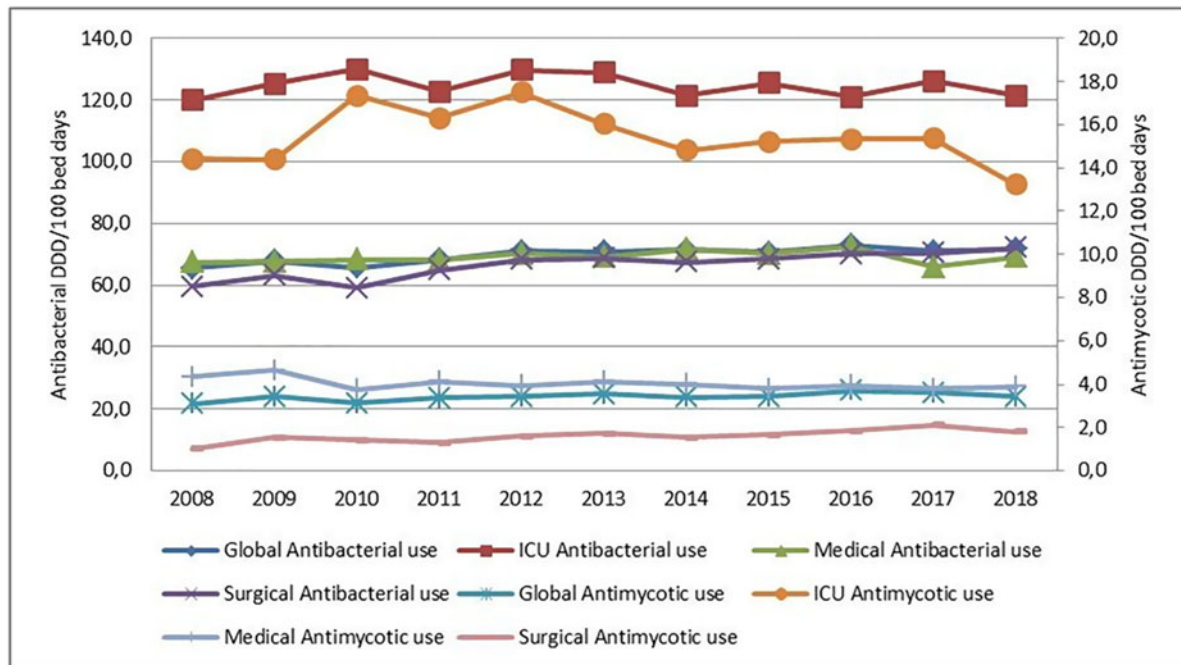


Fig. 1

Cephalosporins and carbapenem consumption increased both globally (10.88 vs 13.86 DDD per 100 bed days; $P < .001$) and in medical and surgical units (3.26 vs 5.38 DDD per 100 bed days; $P < .001$). This increase was mainly associated with ceftriaxone (3.45 vs 5.46 DDD per 100 bed days; $P < .001$) and meropenem (1.12 vs 3.08 DDD per 100 bed days; $P < .001$). There was a global decrease in the consumption of penicillins (26.10 vs 24.24 DDD per 100 bed days; $P = .012$) and quinolones (11.63 vs 9.61 DDD per 100 bed days; $P = .004$). This trend was observed also in ICUs and medical units but not in surgical units, for which only quinolones showed a significant decrease. Decreases in the use of amoxicillin/clavulanate acid (17.80 vs 14.24 DDD per 100 bed days; $P < .001$) and ciprofloxacin (5.68 vs 4.01 DDD per 100 bed days; $P < .001$) were observed. **Conclusions:** The increase in the use of antimicrobials in Catalonia is concerning. This increase is attributable to the use of these drugs in surgical units. Antibiotic stewardship measures should be aimed primarily at these units. The increasing use of carbapenems should be analyzed.

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Universal Masking to Prevent Nosocomial Respiratory Viral Infections in Malignant Hematology Inpatient Units

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Background: Patients with hematologic malignancies are at increased risk for respiratory virus infections (RVIs) and may experience prolonged asymptomatic viral shedding contributing

to transmission. In response to 2 extensive RVI outbreaks in our adult cancer center, a universal masking policy was implemented whereby inpatients on malignant hematology units and their visitors were required to wear procedure masks whenever they were walking outside their rooms. Visitors were required to mask when inside patient rooms. Staff were not included in the policy. Here, we describe the impact of universal masking on the incidence of nosocomial RVI in malignant hematology patients. **Methods:** In this before-and-after study, we examined the effects of universal masking in malignant hematology units of a 170-bed adult cancer hospital in Toronto, Canada, between January 1, 2015, and September 30, 2019. Nosocomial RVI incidence, RVI outbreak descriptions, and hand hygiene compliance rates were collected from hospital infection control databases. Mask utilization was extracted from hospital purchasing records. Staff influenza vaccination rates were obtained from occupational health records. RVI incidence rates before and after the intervention were compared using Wilcoxon rank-sum test. **Results:** The preimplementation phase ran from January 1, 2015, to February 28, 2017, and the postimplementation phase spanned March 1, 2017, to September 30, 2019. Monthly mask utilization on malignant hematology units increased by 105% after implementing the universal masking policy. Nosocomial RVI incidence decreased significantly after implementing the universal masking policy, and the number of cases involved in RVI outbreaks also decreased (Table 1). There was a 14% increase in nasopharyngeal swab orders after implementation. Staff influenza vaccination rates, hand hygiene compliance and infection control policies remained stable throughout the study. **Conclusions:** A reduction in the incidence of nosocomial RVI and number of RVI cases in outbreaks was observed after implementing the universal masking policy. Although we were unable to directly measure compliance with the intervention, increased mask utilization after the intervention implied adherence to the policy. Our experience suggests that universal masking in malignant hematology inpatients may be an effective RVI prevention strategy. Further rigorous study is warranted.