

Session: P052 Computerized decision support systems as a stewardship tool

**Category: 5d. Pharmacoepidemiology, improved prescribing and antibiotic stewardship**

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### Antibiotic stewardship: impact of an e-health based solution

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**Background:** Worldwide, antimicrobial prescription is not correct on 30 to 50% of cases. Antibiotic stewardship (AS) programs are aimed to reduce unnecessary or incorrect choice and duration of antimicrobial prescription, and lately decrease the emergence of multidrug-resistant bacteriae and decrease costs. E-health, defined as the intensive use of information and communication technologies, is a major tool for such purpose.

**Material/methods:** Using the electronic medical registry (SOARIAN®, Cerner, former Siemens Medical Solutions), the ICAC developed a new template for antimicrobial prescription, that includes links for guidelines, where physicians must select the purpose: prophylaxis (surgical procedure, others) or therapeutics (infection). Such selection automatically implements case sensitive stop orders, limiting the duration of therapy. In case of unmatched between the selected antimicrobial and context (according to guidelines) or in case of prescription of conditioned antimicrobials (mainly carbapenems, quinolones and anti-MRSA agents), a justification is immediately requested, which generates an e-mail towards ICAC in order to start AS and subsequent ICAC and ward pharmacists interventions according to specific situations.

**Results:** In one year of full implementation of this solution, the global DDD/100 bed-days for admitted patients dropped 23%, which was also observed for Levofloxacin (61%), Ciprofloxacin (51%), Meropenem (40%) and Vancomycin (23%). Piperacilin-Tazobactam consumption increased 7%,

mainly due to a shift prescription from carbapenems. In the same period associated costs dropped 6% (62.000€).

**Conclusions:** In one year of full implementation of this innovative tool that generates case sensitive stop orders and alert e-mails for ICAC whenever antimicrobials are not on the correct use or belong to a conditioned list, antimicrobial therapy has become more adequate. E-health is a major tool for Antimicrobial Stewardship Programs allowing real-time and multi-player operation, improving quality, reducing costs and for accreditation.