Conclusions: The strategy of increasing pip/tazo use combined with extended infusion did not induce the resistance of *P. aeruginosa* to pip/tazo, even prevented the potentially increasing resistance from the generic drug usage.

**PS 2-311**

**EFFECTS OF IMPLEMENTATION OF AN ONLINE COMPREHENSIVE ANTIMICROBIAL STEWARDSHIP PROGRAM FOR ICU PATIENTS AT A LARGE HOSPITAL IN TAIWAN: LONGITUDINAL STUDY**

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Purpose: Antimicrobial stewardship programs may reduce the inappropriate use of antimicrobials, but the long-term effects of such programs in intensive care units (ICUs) have not been adequately examined. Our objective was to evaluate the effects of an online comprehensive antimicrobial stewardship program (OCASP) on the clinical variables of patients in 200-bed medical/surgical ICUs of a single medical center over the course of 11 years.

Methods: We retrospectively analyzed the records of adult patients admitted to ICUs during the 5 years before (n = 27499) and the 6 years after (n = 33834) implementation of an OCASP. Antimicrobial consumption, expenditures, duration of treatment, incidence of healthcare-associated infections (HAI), prevalence of HAI caused by antimicrobial resistant strains, and clinical outcomes of patients were analyzed. Segmented regression analyses of interrupted time series were used to assess the significance of changes in antimicrobial use before and after OCASP implementation.

Results: After OCASP implementation, ICU patients were older, had greater disease severity, longer ICU stays, and were more likely to receive antimicrobials, but the antimicrobial expenditures were lower and crude mortality of ICU patients was less. The change in overall antimicrobials use (slope of DDD/1000 patient-days vs. time) increased significantly before implementation (P < 0.001), but decreased significantly after implementation (P < 0.01). Analysis of the individual drug classes of antimicrobials indicated that the administration duration of all classes of antimicrobials treatment were significantly shorter (P < 0.001) after implementation except the treatment duration of anti-fungal agents did not differ for the two time periods (P = 0.05). The incidences of HAIs were significantly lower (P < 0.001) after implementation.

Conclusions: Long-term implementation of an OCASP in our ICUs indicated that this is a sustainable system that reduces antimicrobial consumption and expenditures, but does not compromise healthcare quality.

**PS 2-312**

**THE BENEFITS FOR MULTIPLE MANAGEMENT STRATEGIES OF APPROPRIATE ANTIBIOTIC TREATMENT COMPARED BETWEEN DEFINED DAILY DOSE OF ANTIBIOTIC AND COLONIES OF ANTIMICROBIAL RESISTANCE IN A COMMUNITY HOSPITAL**

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Purpose: Colonies antimicrobial resistance are increasing threat in hospitalized patients over whole world due to inappropriate antimicrobial therapy. The results and benefits of multiple management strategies, after discuss appropriate antibiotic treatment by hospital’s antimicrobial committee measures antibiotic that matches the in vitro susceptibility of the pathogen with sensitivity test , that help approving prophylactic antibiotic regimen for infection therefore diminish antimicrobial resistance.

Methods: Data were retrospectively collected on infectious cases at a community hospital from January 2013 to September 2014, analysis and discussion between defined daily dose of antibiotic and colonies of antimicrobial resistance for appropriate antibiotic treatment by hospital’s antimicrobial committee every sessions. Calculated antibiotic daily dose content/DDD value, all kinds of DDD value, with data provided colonies antimicrobial resistance (CR-EC, CR-AB, CR-PA, CR-KP, VREfm) by laboratory department and daily doses of Quinolone, Carbapenem, 3-4 generation cephalosporins, Glycopeptide by pharmacy department. Multiple management strategies of appropriate antibiotic treatment was beginning since 2014 with following:
1. set up guidelines for appropriate antimicrobial therapy .2. full education training. 3. monitor all values. 4. Examination of prophylactic antibiotic regimen by infection specialist, all cases analysis and results feedback to doctor each time. 5. antimicrobial committee members round ground in wards.

Results: Good benefits in conclusion, DDD of Carbapenem from 49.8 decreased to 22.9, CR-AB from 67.4% increased to 80.1%, CR-PA from 10.9%.Increased to 21.2%, CR-EC from 0.3% decreased to 0.0%, CR-KP from 5.0% increased to 7.5%, VREfm from 11.8% decreased to 11.7%, glycopeptides DDD from 13.9 to 6.2, 3-4 generation cephalosporins DDD from 451.2 decreased to 51.3, Quinolone DDD 121.2 increased to 124.1%, DDD all decreased in every sessions.

Conclusions: The benefits for multiple management strategies of appropriate antibiotic treatment can help approving prophylactic antibiotic regimen for infection therefore diminish antimicrobial resistance.

**PS 2-313**

**AN INCREASING TREND OF CARBAPEMENS RESISTANCE ACINETOBACTER BAUMANNII (CRAB) AND CRAB’S CO-RESISTANCE TO CETAZIDIME, GENTAMICIN, CEFEPIME, LEVOFLOXACIN AND AMIKACIN IN A TAIWAN REGIONAL HOSPITAL**

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Purpose: Carbapenems Resistant Acinetobacter baumannii (CRAB) makes treatment difficulty. CRAB’s resistance to other antibiotics that caused further problems.

Method: We investigated the proportions of CRAB among A. baumannii in a Taiwan regional hospital in 2011-2013. We analyzed the cross resistance of antimicrobials including ceftazidime (CAZ), gentamicin (GM), cefepime (FEP), levofloxacin (LVX) and amikacin (AN).

Result: An increasing proportions of CRAB A. baumannii in 2011-2013 were noticed (36.8%, 50.8%, 61.0%, respectively, P < 0.0001). The drug resistance between 2011 – 2013 were CAZ (23.5%, 34.1%, 44.0%), GM(18.4%, 30.1%, 48.3%), FEP(14.0%, 31.0%, 40.9%), LVX(20.6%, 31.5%, 44.0%) and AN(16.8%, 17.0%, 17.2%). An increasing resistance trend was observed for GM, FEP and LVX (all P < 0.0001). The correlation of antimicrobial resistance by using correlation coefficient revealed GM-CAZ, LVX-CAZ, LVX-GM, FEP-CAZ, FEP-GM, FEP-LVX, AN-CAZ, AN-GM, AN-LVX, AN-FEP were 0.91, 0.96, 0.95, 0.89, 0.91, 0.92, 0.63, 0.63, 0.66 and 0.66, respectively (all P < 0.0001).

Conclusion: This study shows the CRAB resistance is increasing annually in a Taiwan regional hospital from 2011-2013. An increasing resistance trend was
observed for GM, FEP and LVX. Cross-resistance occurred for CRAB with regards to CAZ, GM, FEP, LVX and AN.

**PS 2-314**

**IMPROVING THE COMPLIANCE TO THE SURGICAL ANTIBIOTIC PROPHYLAXIS (SAP) POLICY OF ADMINISTERING ANTIBIOTIC WITHIN 1 HOUR PRIOR TO SKIN INCISION**

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**Purpose:** This study aims to improve compliance rate to the standard practice of administering prophylactic antibiotics 1 hour prior to skin incisions, which is embodied in our SAP Policy. This will further lead to lower rates of Surgical Site Infections and post operative infections, ensuring patient safety and quality care.

**Methods:** After extensive discussion of all possible causes, the primary root cause identified was Improper Coordination between members of the health-care team. Several interventions were implemented:

1. Revision of the pre-existing Pre-Operative Checklist to include the documentation of the antibiotic.
2. Reiteration of the protocol to the healthcare team regarding the SAP through Inter-Office letters.
3. Accomplishment of the monitoring logbook in the operating room to check for the compliance of healthcare team.
4. Administered antibiotics once the whole surgical team is physically present and ready for the operation.
5. The resident on duty in the operating room interpreted the skin test once the patient arrived in the operating room complex.

**Results:** After intervention implementation, evaluation revealed an increase in the rate of compliance to the SAP Policy of administering antibiotic within 1 hour prior to skin incision from 82% to 95% as of November 15, 2014.

**Conclusions:** There is a 13% increase in the rate of compliance to the Surgical Antibiotic Prophylaxis Policy of administering antibiotic within 1 hour prior to skin incision. This is due to the enhancement in the coordination and communication within the healthcare team.

**PS 2-315**

**REDUCTION OF HOSPITAL LEVOFLOXACIN USE IS ASSOCIATED WITH A DECREASE IN HOSPITAL-ACQUIRED FLUOROQUINOLONE-RESISTANT PSEUDOMONAS AERUGINOSA RATES: AN 11 YEAR STUDY**

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**Purpose:** The fluoroquinolone-resistant *Pseudomonas aeruginosa* rates may be related to the consumptions of fluoroquinolones. This objective was to analyze an 11-year surveillance data on the rates of fluoroquinolone resistance in hospital-acquired *P. aeruginosa* before and after implementation of an institution-wide control of levofloxacin use.

**Methods:** We conducted a retrospective cohort study in a university-affiliated tertiary hospital in Taiwan. To control the increasing hospital-acquired fluoroquinolone-resistant *P. aeruginosa* rates, an intervention program about reducing the use of levofloxacin was implemented by the Department of Infection Control and Pharmacy since July 2007. Fluoroquinolones consumption was expressed as defined daily dose per 1000 patient-days (DDD/1000PDs). We analyzed the relationship between the consumption of ciprofloxacin and levofloxacin and resistance rate of hospital-acquired *P. aeruginosa* every six months by linear regression.

**Results:** The rates of fluoroquinolone resistance in *P. aeruginosa* (either ciprofloxacin or levofloxacin) increased since 2004. Since the intervention of aggressive control of levofloxacin use in July 2007, the rate of hospital-acquired fluoroquinolone-resistant *P. aeruginosa* continuously decreased, from a mean of 25.30% (before intervention) to 20.90% (after intervention). Parenteral levofloxacin use, total in-hospital levofloxacin use, total in-hospital fluoroquinolone (including ciprofloxacin, levofloxacin, and moxifloxacin) use was significantly positively correlated with resistance of *P. aeruginosa* to fluoroquinolones (p = 0.005, p = 0.008, p = 0.011, respectively). The ciprofloxacin use did not have association with hospital-acquired fluoroquinolone-resistant *P. aeruginosa* rate. The sustained control of levofloxacin use kept the low resistant rate in the following six years. We showed the impact of a fluoroquinolone control strategy over 11 years.