Purpose: Blood culture would be an important guide to treat a suspected bacterial infection patient. Blood culture contamination might not only threat patients’ clinical diagnosis and treatment but also increase cost of health care. To control blood culture contamination rate was difficult especially in emergency department (ED).

Methods: This was a community hospital emergency department study. To attempt to decrease blood culture contamination rate, the ED administrator setup a new strategy to record ED staff’s name for each blood culture sampling from November 2013. Then the blood culture contamination rate for each staff was then published monthly. We defined January to October 2013 as pre-regulation period, and November 2013 to November 2014 as regulation period. Using Chi-square test, the blood culture contamination rate was compared in these two periods.

Results: Average score was 363.8 out of 500. Among 5 components, the sub-total score was highest (91.3±11.1) in “System change” and lowest (54.6±21.2) in “Institutional safety climate for hand hygiene”. Out of 35 questionnaire, 3 were assigned to basic HH level, 13 to intermediate, and 19 to advanced.

As examining the questions in each category, supply of clean, running water and dedicated budget were the questions that scored the most. However, Sink/Bed ratio, or realistic plan to improve infra structures were the least available.

In the category of Education and Training, availability of professional staff for hand hygiene education program was the most highly scored question, whereas the lowest scored question was information leaflets available for staff to encourage them to use gloves.

In the category of Evaluation and Feedback, Systematic feedback to leaderships had the biggest number of positive response, consumption of alcohol based hand rub 20L per 1000 patient days were the contrary.

Regular review and maintenance of poster in Reminders in workplace section, and patient participation program in Systematic safety climate for hand hygiene section scored the lowest respectively.

Conclusions: There were significant differences in the level of resources available and competency of hand hygiene even in the hospitals voluntarily participating in HH improvement program. Because the indicator regarding patient involvement in HH promotion was the lowest among 27 questions, it would be necessary to develop and evaluate education and training program for patients as well as healthcare workers.

Figure 1. Distribution of WHO Hand hygiene self assessment framework component scores >

PS 1-165

USING PEER PRESSURE TO CONTROL BLOOD CULTURE CONTAMINATION RATE – A LOCAL COMMUNITY HOSPITAL EMERGENCY DEPARTMENT BASED OBSERVATION STUDY

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Purpose: To control the blood culture contamination rate, we must first treat the contamination sources. In this study, we divided the ED into two parts: the children’s ED and the adult ED. There was a infection control team in each ED, 3 times per week report the contamination rate of each day by telephone. We defined January to October 2013 as pre-regulation period, and November 2013 to November 2014 as regulation period. Using Chi-square test, the blood culture contamination rate was compared in these two periods.

Results: From January to October 2013, there were totally 3,048 blood cultures sampling and 180 contaminated in ED in 10 months pre-regulatory period. After strategy setup, there were 118 contaminated blood cultures in total of 4,532 sampling in 13 months regulatory period. The blood culture contamination rate decreased from 5.9% to 2.7% (p<0.001).

Figure 1. Trend of contamination rate from October 2013 to November 2014.

Conclusion: By publish each staff’s contamination rate for blood culture, peer pressure could effectively control blood culture contamination rate in ED.
Conclusions: For caring large amount of patients and preventing cluster in hospital during epidemic of enterovirus, we depend on our facility and ability of pediatric department to make up the strategies of enterovirus health-care, which include theadmittance, antibiotic administration, education of infection control, and team work for serious complications. Therefore, we could feel easy to face the challenge of this communicable disease every year. We not only offer the high quality of healthcare but also perform the effectiveness of infection control.

**PS 1-167**

**RAMR OPERON AND LON PLAY A CENTRAL ROLE IN TIGECYCLINE RESISTANCE IN KLEBSIELLA PNEUMONIAE**

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**Purpose:** Klebsiella pneumoniae was Gram-negative bacteria caused a lot of diseases, like pneumonia, and urinary tract infection. The rise of multidrug resistance increased the difficult of treatment. Although tigecycline showed activity against a broad spectrum of bacteria, the strains resistant to tigecycline were emerged.

**Methods:** The whole genomes of both clinical strain and laboratory evolution strains were sequenced to identify the putative mutations related to tigecycline resistance. Fitness cost measurement and transcriptome were also performed. At last, complement experiment was perform to verify the gene’s function.

**Results:** The mutations in seven tigecycline resistant strains were observed in ramR (5/7), lon (3/7), rma (1/7) and rpsL (1/7). The high fitness cost was observed in laboratory evolution strains but not clinical strain. Of single step evolution mutants, 80% (29/36) of mutants harbored mutation in ramR. Five mutations were located in dimerization domain of RamR, and two mutations were observed in DNA-binding domain. Furthermore, single step evolution mutant demonstrated cross-resistance to ciprofloxacin. Transcriptome analysis demonstrated ramR operon and acrA were high expressed in all tigecycline resistant strains. Genes involved in nitrogen metabolism were induced in laboratory evolution strains when compare with wild type and clinical strain. Complement experiment showed that both wild type ramR and lon partially restored the tigecycline sensitivity of K. pneumoniae.

**PS 1-168**

**ANALYSIS OF TIGECYCLINE’S CLINICAL USE FROM A MEDICAL CENTER IN TAIWAN**

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**Purpose:** The growing numbers of multi-drug resistant organisms (MDRO) usually lack effective antimicrobial agents so tigecycline has been given great expectations as a candidate. The purpose of this study is to assess the efficacy of tigecycline’s clinical use and its outcomes in hospitalized patients.

**Methods:** We retrospectively reviewed the medical records of patients who had received tigecycline at least for 3 days in our hospital from May 1, 2011 to January 31, 2013.

**Results:** Tree hundred and nine patients were analyzed in this study. Almost half patients were shown to have successful clinical response to tigecycline (151/309; 49%), with high clinical success observed in complicated skin and skin structure infections (101/137; 74%). In failure group, treatment failure was mostly seen in hospital-acquired pneumonias and pneumonias complicated with bloodstream infections (83/100; 83%). The eradication rate for totally bacterial isolates mostly collected from sputum was only 30% (33/112). Four patients (1.3%) experienced from gastrointestinal adverse events after the use of tigecycline. The mortality rate was 27% (84/309), which was mainly due to pneumonias (48/101; 48%).

**Conclusion:** Our study showed good efficacy of tigecycline for the treatment of complicated skin and skin structure infections with relatively lower gastrointestinal adverse events. Regarding the treatment of pneumonia, ineffective response was predictable as most patients with pneumonia were hospital-acquired in our study.

**PS 1-169**

**STUDY OF VARIATION ON DRUG SUSCEPTIBILITY TESTING AND CLASS 1 INTEGRONS OF ACINETOBACTER BAUMANNII**

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**Purpose:** Antibiotics-resistant Acinetobacter baumannii is a very important cause of healthcare-associated infections, in addition to the highly pathogenic and mortality, it is one of major healthcare-associated infecting pathogens. Integrons are the genetic unit that confer antibiotic resistance to bacteria besides plasmid and transposon.

**Methods:** In this study, 100 A. baumannii clinical blood culture isolates were collected from Show Chwan Memorial Hospital from 2008 to 2010 .The drug susceptibility against 14 kinds of antibiotics were tested.The CS-PCR method was used to detect the existence of class 1 integron.

**Results:** The drug resistance of A. baumannii to cephalosporins increased significantly (54% up to 66%), and the resistance to PIP, TIP, SXT, SMM also have an upward trend , but the drug resistance to aminoglycosides decreased (60% down to 48%).And that was found 61.8% of these isolates carried the class 1 integron, and the cassette arrays they carried were only in 4 different sizes: 3.0 kb, 2.5 kb, 1.5 kb and 1.0 kb,among them the isolates carrying 2.5 kb cassette array were at the highest percentage, 97.3%. This study also showed that A. baumannii isolates carrying integron were more resistant to various antibiotics tested than non-integron-carrying isolates.

**Conclusions:** The widespread occurrence of 2.5 kb cassette array in A. baumannii isolates from Show Chwan Memorial Hospital was rarely reported in other countries.It is speculating that this phenomenon may be linked to the preference of hospital to certain particular antibiotics, so that the A. baumannii strains carrying 2.5-kb cassette array became dominant under antibiotic selection pressure.