

guide that HCWs and/or patients can follow to prevent them from bringing infections back to their household.

#### PS 1-047

### CD-ROM TEACHING NURSES TO IMPROVE LONG-TERM CARE INSTITUTIONS WITHIN THE KNOWLEDGE OF THE EFFECTIVENESS OF URINARY TRACT INFECTIONS

**Motivation:** Urinary tract infection is one of the long-term care facility residents infections occur most often, long term care facility residents with chronic diseases due to physical aging, resulting in reduced immunity and physical function decline, often with a variety of infectious disease outbreak, infection (infectious disease) is one of the causes of hospitalization and death institutional residents common. Incomplete bladder emptying, produce acidic urine damage, poor perineal hygiene, lack of estrogen after menopause and indwelling catheter, easily lead to urinary tract infections. Well trained caregivers to enhance their knowledge of urinary tract infection, in order to prevent long-term care facility secret urethral infection, and early detection of any abnormalities in the elderly, as appropriate referrals to physicians, receive directly in the long-term care facility general treatment, or required patients to acute care medical institutions for treatment follow-up care.

**Purpose:** whether to accept the teaching of multimedia CD-ROM, a urinary tract infection before and after the intervention nurses knowledge of the degree of change.

**Methods:** An experimental study of the double group pretest-posttest design classes, objects, taken from a long-term care facility in Taichung care personnel in the experimental group of eight people, before giving urinary tract infections discs before the intended teaching-learning courses to test their knowledge questionnaire, a after months of urinary tract infections CD tutorials, give their knowledge of the proposed questionnaire measuring knowledge, there was no control group of eight people to receive discs teaching.

**Results and conclusions:** CD teaching former caregivers did not differ significantly on the knowledge of urinary tract infection ( $P = .17$ ), post-test after the intervention of their teaching CD experimental group and a control group of urinary tract infection-related knowledge, significant differences ( $P < .02$ ), whereby audio and video discs that can trigger interest in learning care teaching staff to enhance their knowledge of urinary tract infection prevent urinary tract infections change their behavior, residents thus reducing urinary tract infection, so recommend long-term care institutions can take advantage of future multi-media CD-ROM as a strategic service education.

**Keywords:** CD teaching, Long-term care institutions, Urinary tract infections

#### PS 1-049

### EXPERIENCE SHARING OF USING TRM TO IMPROVE POST NEEDLESTICK EXPOSURE TEST TRACK RATIO

Chen-Yin Hsu <sup>a</sup>, Qing-Hui Young <sup>b</sup>, Tai-Pyng Cui <sup>c</sup>, Wei-Hohn Pan <sup>d</sup>. <sup>a</sup>Taipei Tzu Chi Hospital, Buddhist Tzu Chi Medical Foundation, Infection Control Center, Taiwan; <sup>b</sup>Taipei Tzu Chi Hospital, Buddhist Tzu Chi Medical Foundation, Division of Infection Diseases, Taiwan; <sup>c</sup>Taipei Tzu Chi Hospital, Buddhist Tzu Chi Medical Foundation, Labour Safety Office, Taiwan; <sup>d</sup>Taipei Tzu Chi Hospital, Buddhist Tzu Chi Medical Foundation, Planning Office, Taiwan

**Purpose:** Due to many reasons, hospital staff who had needle-stick injuries did not follow suggestion accepting examination during the trace. In our hospital, the rate of six-month trace was only 24% in 2012. The situation caused a fact that it was difficult to monitor hospital staff who had needle-stick injuries got hepatitis or any communicable disease. The team, which was set up by the infectious department, center of infection management and the occupational safety and health office, utilized the approach of Team Resource Management (TRM) to improve the problem. It was expected to increase the rate of trace by strengthening the convenience of process.

**Methods:**

- A: Improve the trace information system
  1. Send the message or email to inform
  2. Make a Phone call reminding specifically
  3. Strengthen care by managers
  4. Proclaim in specific meetings

B: Help access the medication such as registering, having treatment and paying.

C: Make the policy of giving up trace

**Results:** Since January first 2013, 77 people have had needle-stick injuries in a hospital. Excluding quit and non-staff, 57 people were needed to be tracked. After improving with the project, 56 people have received examination continually for six months, and the rate of trace was risen from 34.38% to 82.93% during eight months. The positive rate of HIV. B. C hepatitis and infectious disease was 0%. In addition, 10 in 15 people who got needle-stick injuries finished trace for 12 months, and the rate of trace was increased from 3.45% to 82.93%. The positive rate of HIV. B. C hepatitis and infectious disease was also 0%. The outcome is dramatic and overtake the goal the team set. The result shows implementing TRM to improve process of examination for hospital staff who had needle-stick injuries is useful and effective.

**Conclusions:** It is effective to know why hospital staff who had needle-stick injuries do not participate in trace by signing waiver. However, the legitimacy is still needed to be discussed.

#### PS 1-050

### CRITICAL CARE NURSES' KNOWLEDGE OF VENTILATOR BUNDLE

Hsin-Lan Lin. Department of Nursing, Chi Mei Medical Center, Liouying, Tainan, Taiwan

**Purpose:** This study was conducted to investigate the level of knowledge of ventilator-associated pneumonia (VAP) prevention among critical care nurses.

**Methods:** A multiple-choice questionnaire was designed to assess knowledge of VAP prevention. The questionnaire consisted of 12 items with four possible answers and only one correct answer. All of the 150 critical care nurses received the questionnaire. Demographic data collected included age, gender, academic degree, serving location, whether nurses served as a team member or team leader, ICU license, ranking of registered nurses (RN), and years of critical care experience.

**Results:** Overall, 133 questionnaires were identified as valid, which translates into a final response rate of 88.6%. Overall, the mean score was  $7.87 \pm 1.36$  (65.6%). The top three queries to which nurses answered correctly were item 7 – the recommended patients' position ( $n = 130$ , 97.7%), item 6 – regarding when to perform the weaning process ( $n = 127$ , 95.6%), and item 8 – regarding sedative and analgesic agents ( $n = 126$ , 94.7%). In contrast, item 10 – regarding use of endotracheal tubes with subglottic suction ( $n = 8$ , 6.0%), item 4 – the pathogenesis of VAP ( $n = 31$ , 23.3%), and item 5 – possible pathogens causing VAP ( $n = 60$ , 45.1%) had the lowest ratio of correct response. Results of the multivariate analysis disclosed that ICU license ( $P = 0.03$ ) and ranking of RN ( $P = 0.041$ ) were significantly associated with high scores of respondents.

**Conclusions:** The knowledge of VAP prevention among critical care nurses is inadequate, especially among non-ICU-licensed nurses and nurses with a low RN rank. Although knowledge is only one dimension of effecting behavior change, it remains essential to find the nurse without adequate knowledge to educate them.

#### PS 1-051

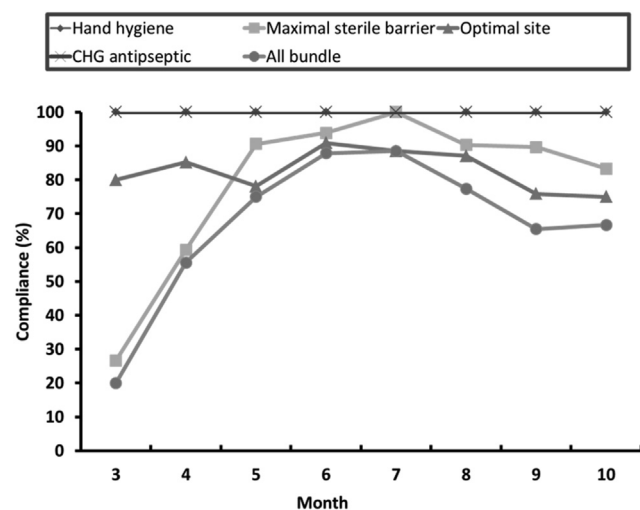
### DIFFERENT COMPLIANCE OF EACH CENTRAL LINE INSERTION BUNDLE

Hsuen-Wen Liang. Department of Nursing, Chi Mei Medical Center, Liouying, Tainan, Taiwan

**Purpose:** This study is conducted to investigate the adherence to CVC insertion bundle during this improving quality-of-care process in a medical ICU.

**Methods:** The medical ICU has 23 beds and three intensivists. The insertion of CVC is always performed by intensivists; however, it is rarely performed by other non-intensivists, such as cardiologists, surgeons and trained residents. Since March 2013, CVC insertion bundle, including four components - hand hygiene, maximal sterile barriers upon insertion, use of chlorhexidine gluconate (CHG) for skin preparation, and avoid femoral vein for access site, were implemented in ICU. The compliance of each bundle was defined as the frequency of the number of performed actions to the number of CVC insertions. **Results:** From March 2013 to October 2013, a total of 205 CVC insertions were observed and 202 (98.5%) insertions were done by intensivists. The overall compliance of all four components of bundles was 70.7%. The

compliance of each component was as the following: 100% for hand hygiene, 82.9% for maximal sterile barrier precaution, 100.0% for the use of CHG, 83.4% for optimal site selection.



**Conclusions:** The surveillance study to find out the specific bundles with low compliance should be warranted.

#### PS 1-052

##### EFFECTIVENESS OF ELECTRONIC LEARNING ON URINARY CATHETER CARE IN AN ACUTE TERTIARY HOSPITAL

K. Y. Tan, H. X. Toh, F. Ibrahim, M. L. Ling. *Infection Control, Singapore General Hospital, Singapore*

**Purpose:** Catheter-associated urinary tract infection (CAUTI) accounts for 30% to 40% of healthcare associated infection (HAI). Indwelling urinary catheter causes pain and discomfort, which might lead to prolonged hospitalisation stay. The ongoing care of an indwelling urinary catheter lies with the nurses. In order to improve the quality of care in urinary catheter, the intervention measures in infection control plays an important role. The Infection Control Department implemented CAUTI electronic learning module to educate nurses with the objective to increase their awareness and knowledge in the care of urinary catheter.

**Methods:** The cohort study was conducted over a period of 3 months in two wards- medical and surgical wards. The content of the module comprise CAUTI insertion and maintenance bundles adopted from CDC guidelines. A pre and post survey as well as a weekly audit on the care on urinary catheter were used to evaluate the effectiveness of the electronic learning among the nurses.

**Results:** A total of 87.7% nurses responded. The findings showed improvement in knowledge from a mean score of 17.2 to 18.3 among the surgical discipline ( $p = 0.008$ ) and an improved mean score of 14.8 to 15.7 among the medical discipline ( $p = 0.008$ ). Using Fishers' exact test the results shown an improvement in the audit compliance rate from 83% to 90% ( $p = 1.000$ ) in surgical discipline and 60% to 79.7% in medical discipline ( $p = 0.176$ ).

**Conclusion:** From the results, the nurses have shown improvement in their knowledge on the care of urinary catheter. With the success of this cohort study, we intend to launch the CAUTI electronic learning module throughout the hospital.

#### PS 1-053

##### CONTROL CATHETER-ASSOCIATED URINARY TRACT INFECTIONS IN A NEUROSURGERY INTENSIVE CARE UNIT

Wei-Ya Cheng. *Department of Nursing, Chi Mei Medical Center, Liouying, Tainan, Taiwan*

**Purpose:** This study was conducted to evaluate the effect of the implementation of one catheter-associated urinary tract infection (CAUTI) care bundle in the neurosurgery intensive care unit (NSI-ICU).

**Methods:** This study was carried in a NS-ICU at regional teaching hospital that has 10 adult ICU beds. Since July, 2013, the CAUTI care bundle was implemented in the entire ICU. The bundle includes several components including hand hygiene, ensuring that there are the indications for urinary catheter insertion, use of aseptic technique by trained healthcare providers, maintenance of a sterile closed drainage system, keeping the drainage bag below the level of bladder, daily review the indications for the urinary catheter, early removal of unnecessary catheters, and avoiding routine changing of catheters or drainage bags. Outcomes including CAUTI per 1,000 catheter-days, CAUTI per 1,000 inpatient-days, and catheter utilization rates (days of catheter use divided by total inpatient-days) were measured.

**Results:** During the 2-year period, there were a total of 16 episodes of CAUTI and the catheter utilization rate was 0.83. The rate of CAUTI was 2.13 per 1,000 inpatient-days and 2.55 per 1,000 catheter-days. The rate of CAUTI significantly declined from 3.86 per 1,000 catheter-days in Pre-P to 0 per 1,000 catheter-days in Post-P3 ( $p = 0.026$ ). In addition, the rate of CAUTI per 1,000 inpatient-days showed a similar trend that significantly decreased from 3.01 per 1,000 inpatient-days in Pre-P to 0 per 1,000 inpatient-days ( $p = 0.037$ ).

**Conclusion:** The rate of CAUTI in NS-ICU can be reduced to zero after implementation of a prevention care bundle.

#### PS 1-054

##### EFFICACY AND TOLERABILITY OF CEFTOBIPROLE MEDOCARIL IN CHINA, SOUTH KOREA, AND TAIWAN: POST-HOC ANALYSIS OF TWO RANDOMIZED TRIALS IN COMMUNITY-ACQUIRED AND HOSPITAL-ACQUIRED PNEUMONIA

Yin-Ching Chuang<sup>a</sup>, Mikael Saulay<sup>b</sup>, David Main<sup>c</sup>, Marc Engelhardt<sup>c</sup>, Achim Kaufhold<sup>c</sup>. <sup>a</sup>Chi-Mei Medical Center, Tainan City, Taiwan; <sup>b</sup>Aptiv Solutions, Allschwil, Switzerland; <sup>c</sup>Basilea Pharmaceutica International Ltd, Basel, Switzerland

**Purpose:** A *post hoc* analysis was undertaken of 2 global randomized, double-blind Phase 3 studies in community-acquired pneumonia (CAP) or hospital-acquired pneumonia (HAP [including ventilator-associated pneumonia]) to determine the efficacy and tolerability of ceftobiprole medocaryl vs comparators in patients enrolled in China, South Korea, and Taiwan. Ceftobiprole medocaryl is the prodrug of ceftobiprole, a novel cephalosporin for intravenous use with activity against Gram-positive pathogens, including methicillin-resistant *S. aureus* (MRSA) and against Gram-negative pathogens, including *P. aeruginosa*.

**Methods:** In the CAP study, patients were randomized to 5–14 days ceftobiprole 500 mg q8h or ceftriaxone 2000 mg once daily ± linezolid 600 mg q12h. In the HAP study, patients were randomized to 7–14 days ceftobiprole 500 mg q8h or combined ceftazidime 2000 mg q8h + linezolid 600 mg q12h. In both studies, ceftobiprole and comparators were evaluated for clinical cure at the test-of-cure (TOC) visit, 30-day pneumonia specific mortality (PSM) and all-cause mortality (ACM) using the intent-to-treat population and microbiological eradication using the microbiologically evaluable population.

**Results:** 139/638 patients in CAP and 82/781 patients in HAP (16% of the study populations) were included in this analysis. In CAP, cure rates were 73.5% with ceftobiprole and 70.4% with ceftriaxone ± linezolid. Microbiological eradication was numerically higher with ceftobiprole (92.9% vs 80.0%), and 30-day mortality was numerically lower (ACM: 1.5% vs 2.8%; PSM: 0% vs 1.4%). In HAP, cure rates were 46.3% in the ceftobiprole and ceftazidime/linezolid groups. Microbiological eradication was numerically higher (38.9% vs 21.1%), and 30-day mortality was numerically lower (ACM 7.3% vs 14.6%; PSM 2.4% vs 7.3%) with ceftobiprole. Adverse events were comparable between treatments.

**Conclusion:** In this *post hoc* analysis of patients enrolled from 3 Asian countries, ceftobiprole medocaryl was effective and well tolerated vs treatment with ceftriaxone ± linezolid in CAP and vs ceftazidime plus linezolid in HAP.

#### PS 1-055

##### TO USE CVC BUNDLE CARE IMPROVEMENT CRBSI EXPERIENCE

Li-Hung Wu<sup>a</sup>, Yu-Ho Hsieh<sup>b</sup>, Ya-Fang Chang<sup>b</sup>, Yu-Ting Wang<sup>b</sup>, She-Chiung Ke<sup>b</sup>, Chia-Chi Hsieh<sup>b</sup>, Hui-Chun Hsieh<sup>b</sup>, Mei Chuang<sup>c</sup>. <sup>a</sup>Infection Control Office, Show Chwan Memorial Hospital, Taiwan; <sup>b</sup>Department of Nursing, Show Chwan Memorial Hospital, Taiwan; <sup>c</sup>Division of Infection Diseases, Show Chwan Memorial Hospital, Taiwan

**Purpose:** As the care unit for the General Department of our hospital, the Intensive Care Unit got its rate of BSI go up to 9.4% in 2012 from the 10.3%