Postoperative infections in surgical patients with dementia: a population-based study
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Background: Dementia patients were considered to be morbid and potentially at higher risk of complications during hospitalization. However, the postoperative infections among surgical patients with dementia are still not completely understood. Therefore, we conducted a nationwide, population-based, population-based study to characterize surgical infections among dementia patients compared with sex- and age-matched non-dementia controls.

Methods: Reimbursement claims from the Taiwan National Health Insurance Research Database were studied. Among 207,693 persons aged 60 years or older who received inpatient major surgeries between 2004 and 2007, we identified 18,923 with preoperative dementia. Surgical patients without preoperative dementia were randomly selected as controls with a case-control ratio = 1:4. We used multiple logistic regressions to calculate odds ratios and 95% confidence intervals of postoperative pneumonia, septicemia and urinary tract infection associated with preoperative dementia.

Results: Dementia patients undergoing surgery had significantly higher overall postoperative rates of pneumonia (16.4% vs. 5.8%, p<0.0001), septicemia (11.3% vs. 4.8%, p<0.0001) and urinary tract infection (7.0% vs. 4.7%, p<0.0001) compared with non-dementia patients. After adjustment for sex, age, teaching hospital or not, low income, urbanization, coexisting medical conditions, types of surgery and anesthesia, the adjusted ORs of preoperative dementia associated with postoperative pneumonia, septicemia and urinary tract infection were 2.44 (95% CI = 2.31 - 2.58), 2.02 (95% CI = 1.90 - 2.15), and 1.62 (95% CI = 1.50 - 1.74), respectively. There were significant dose-response relationships between number of coexisting diseases and postoperative pneumonia, septicemia and urinary tract infection.

Conclusion: This study investigated that surgical patients with preoperative dementia had increased risk of postoperative infections.

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Type: Poster Presentation

Central line site skin reactions are predicted by both dressing type and disinfectant concentration. A comparison of mepore vs Opsite used with either 0.5, 1, or 2% chlorhexidine gluconate
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Background: Inflammation at the site of a central line dressing predisposes to infection and frequently necessitates line removal. Clinicians reported an increase in local skin reactions after our institution changed the skin disinfectant used for central line dressings from 0.5% chlorhexidine in 70% ethanol to 2% chlorhexidine in 70% isopropanol on 1 March 2010. Transparent dressings changed from Opsite IV3000® to Mepore® on 21 August 2009. To determine whether these factors influenced skin reaction rate we studied patients with central lines on our home IV therapy program.

Methods: Central line dressings are done according to a written protocol. All dressings and follow-up were performed by the same team. Patient details and adverse reactions were recorded in real time into a computerized database. Skin reactions recorded in the database were verified by manual review of patient notes. The details of every patient treated with a central line from March 2005 to November 2011 were used. The rates of skin reactions were compared using Poisson regression.

Results: There were 43 significant skin reactions recorded over 44,237 patient days. The crude incidence rates of skin reaction (per 1000 patient days) were: 0.31 for Opsite® with 0.5% chlorhexidine, 1.2 for Mepore® and 0.5% chlorhexidine, 0.38 for Mepore® and 1% chlorhexidine, and 3.4 for Mepore® and 2% chlorhexidine. Compared with Opsite® and 0.5% chlorhexidine in the previous 5 years, the estimated incidence rate ratios were 5.0 (95% CI 1.7 – 15) for Mepore® and 0.5% chlorhexidine, 1.5 (95% CI 0.19 – 11.9) with Mepore® and 1% chlorhexidine, and 12.5 (95% CI 5.9 – 26.5) for Mepore® and 2% chlorhexidine.

Conclusion: Skin reactions were more frequent with 2% chlorhexidine than lower concentrations of chlorhexidine and increased further by Mepore® compared to Opsite® transparent dressings.

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Excess length of stay due to hospital-associated infections in Thailand: 8 years retrospective data
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Background: Healthcare-associated infections (HAI) are an important cause of morbidity and mortality worldwide, and represent a significant economic cost to healthcare systems. One of the main economic burdens of HAI is the additional stay due to HAI. Quantifying this additional stay is difficult because HAI increases length of stay (LOS), but increased length of stay increases the risk of HAI. Conventional statistical methods cannot separate these effects and are subject to time-dependent bias. This study aimed to estimate the impact of HAI on additional hospitalisation in patients with bloodstream and urinary tract infections in Thailand using methods that overcome this problem.

Methods: Eight years of retrospective data (2003-2010), were obtained from a 1,000-bed hospital in northeast Thailand. Patient data from the routine clinical database (including admission date, discharge date and final outcome) were linked with the routine microbiological laboratory database. Healthcare-associated bloodstream infection (HAI-BSI) was defined as a positive blood culture manifested at least 48 hours after admission (excluding coagu-
High risk procedures and respiratory infections in hospital health care workers – quantifying the risk

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Background: There is a perception that aerosol generating procedures pose a risk of respiratory infection for health care workers, but this risk has never been quantified in terms of clinical outcomes. We aimed to determine the risk of respiratory infection associated with high risk procedures (HRP) in health care workers in settings with high occupational risk.

Methods: We prospectively studied 481 hospital health workers in emergency and respiratory wards in 15 hospitals in Beijing, China over a 5 week period during the winter months of 2008/2009. High risk procedures are defined as those which generate respiratory aerosols. Participants documented the types of clinical patient contact they had, including aerosol generating procedures, and were monitored daily for development of symptoms of respiratory illness. If any symptoms developed, they were tested by nose and throat swabs for respiratory viral or bacterial infections.

Results: 11.6% (56/481) of HCWs conducted at least one HRP during the study period, the most common being airway suctioning (7.7%). HCW on the respiratory ward (33%) were more likely to conduct HRPs than those in the emergency department (16.7%). The majority did more than 1 HRP, with 22/56 doing a single HRP during the study period. In stepwise multivariate logistic regression analysis, only high risk procedures determined the risk of infection outcomes. The OR for a lab confirmed pathogen (virus or bacteria) was 3.3 (1.47-7.5) in HCW who conducted a HRP. For the outcome of any respiratory viral pathogen, the OR was 3.8 (1.1-13.4). Handwashing, influenza vaccination and use of surgical or cloth face masks did not affect the risk of infection.

Conclusion: Conducting high risk procedures result in three-fold increase in risk of respiratory infections in HCWs. This is the first time the risk has been quantified in health workers, and this finding has important occupational health and safety implications for HCWs in settings such as emergency and respiratory wards. Handwashing, influenza vaccination, surgical and cloth masks did not protect HCWs at high occupational risk. HCWs conducting high risk procedures should receive enhanced respiratory protection, and high risk wards should have guidelines in place to minimise the risk to HCWs.

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Evaluating the Impact of a Unit-Driven Awareness Campaign on Hand Hygiene Compliance

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Background: While hand hygiene has been shown to reduce nosocomial infections, improving Hand Hygiene Compliance (HHC) is a major challenge. A number of strategies have been used to achieve this, of which passively administrated education appears to be of least benefit. In order to actively engage health-care workers, we evaluated the effect of a hospital-wide, unit driven, hand hygiene campaign on HHC.

Methods: The campaign ran simultaneously in 33 areas of a 577 bed teaching hospital. Each area was asked to design and implement individualized hand hygiene awareness strategies. Strategies employed included lectures, certification courses, reminders (including badges and posters) and participation in a poster competition. The average HHC rate for 2 months before and 2 months after the campaign were compared. Multi-Drug Resistance Organism (MDRO) transmission rates (for inpatient units) were also calculated for the same periods, using MDRO Infection/Colonization Incidence Rates. No other interventions were carried out during this period.

Results: The overall HHC of the hospital before the campaign was 45%, which increased to a 52% after the campaign. Most locations (60.7%) showed an improvement in their HHC, ranging from an improvement of 0.05% to 38.5% (mean 16%). While improvement in the HHC was not associated with any particular strategy, improvement was more likely to occur with greater numbers of interventions. Of locations where no planned activities took place, none noted an increase in HHC. On the other hand, 54.5% and 78.6% of locations which conducted up to 3 or between 3 to 6 activities had improved HHC respectively. (p-value: 0.04). Only 31.3% of units demonstrated a reduction in the MDRO transmission rates. Improved HHC was also not associated with reduction in transmission rates (p-value: 0.64). Average hospital MDRO Infection/Colonization Incidence Rates rose from 0.51% of admissions before the campaign to 1.5% of admissions after the campaign.