Results: 1,097 PIV were evaluated. 28 (2.5%) were found to have phlebitis, 8 (0.73%) were found to be infiltrated, none were infected. 65 (5.9%) had been in place for > 96 hours (or > 24 hours if emergently placed). PIV that had phlebitis, infiltration, or extended duration of use were recommended for immediate removal. 1,217 PIV and short term CVC were evaluated for accurate documentation of metrics. 418 (34%) had correct documentation on the dressing; 903 (74%) had correct documentation in the chart. 308 (97%) RNs had alcohol wipes in their pockets, and 198 (62%) RNs carried sterile caps. 161 (54%) RNs demonstrated a 15-second scrub of the hub with an alcohol wipe prior to administering IV medication.

Lessons Learned: Improving compliance with appropriate placement and maintenance of catheters is critical to reducing the risk of infection and complications. Educational in-services for the RNs will reinforce basic nursing care of catheters. Routine feedback of compliance with a bundle of measures and on-going targeted education is planned. Support from nursing leadership is key to promoting and sustaining safe practices for IV catheter care.

Presentation Number 12-131

Does an Automated Infection Surveillance System Benefit a Hospital With Limited Information System Resources?

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Issue: Pennsylvania state law requires hospitals to report all hospital acquired infections associated with their facility via Centers for Disease Control and Prevention's National Healthcare Safety Network (NHSN) to facilitate public reporting. In addition, the hospitals are tasked with collecting and inputting detailed denominator data for select surgical procedures: abdominal hysterectomy, coronary artery bypass graft, cardiac, knee and hip prosthesis. Historically our hospital manually collected and organized the necessary data elements. In 2009, the hospital interfaced an infection prevention surveillance software system with its existing yet limited operating room (OR) system. Does the automated surveillance system benefit our urban 541 bed academic medical center?

Project: The hospital recently completed the interface between TheraDoc®, an automated infection prevention surveillance software system, and its existing OR system. The Infection Prevention and Control Department conducted a validation study of the newly implemented surveillance system. A comparison was made between the historical manual method and the newly implemented surveillance system. A check was made for the inclusion of all cases of interest, completeness of all data elements, as well as the time required to collect and organize.

Results: Both methods were found to have complete data elements. However, the new surveillance system revealed additional cases that were not found by the manual method. Of these additional cases, each had complete data elements. In addition, the average time to manually collect and organize the cases and essential data elements was six minutes per case verses two minutes per case using the new surveillance system.

Lessons: The new automated surveillance system resulted in a reduction of time required to gather and organize surgical procedure denominator data at our hospital. The automated system may have realized this reduction by allowing the user to build queries which automatically narrows the list to the cases of interest, calculates the cut to close time, and allows entry of the additional data elements required by NHSN for each case. This saved time can be better spent working on other infection prevention activities. Lastly, the automated system may provide a more accurate denominator, which can potentially adversely affect the hospital's infection rate.

Presentation Number 12-132

Effects of Applying Excessive Suction Pressure to a Ventilated Porcine Lung Model

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Background/Objectives: Endotracheal suctioning is a common practice performed on patients receiving mechanical ventilation. However, suctioning is not a benign procedure and clinicians should be aware of the potential hazards including hypoxemia, atelectasis, trauma, bleeding, and possible infection. The objective of this study was to determine the effect of suction pressure on the end expiratory lung volume (EELV) of ventilated pig lungs when failing to occlude the suction tubing while setting the pressure.

Method: Preserved swine lungs were intubated with an 8.0 mm endotracheal tube (ETT) and ventilated with a Draeger XL ventilator. The ventilator was set to deliver a tidal volume of 0.5 liters (L) and respiratory rate of 12 in the volume control mode. Since the lungs were airless 20 cmH2O of positive end expiratory pressure was applied to inflate the lungs. After a period of stabilization, the ETT was clamped and the EELV was measured using a calibrated pneumotachometer. After the lungs were re-inflated and stabilized, the ETT was continuously suctioned for 10 seconds (s) with a 14 F closed system suction catheter using two different methods for setting pressure. For the first method, the suction tubing was occluded while the pressure was set for -120 mmHg (occlude-to-set or OTS procedure). For the second method, the suction tubing was un-occluded while the pressure was set for -120 mmHg. At the end of both 10 s periods, the ETT was once again clamped and the remaining EELV was measured. Multiple measurements were obtained to assure accuracy and photographs were taken before and at the end of the 10 s periods.

Results: The mean pre-suction EELV was 1.415 L (SD = 0.048). Following 10 s of continuous suction using the OTS procedure, the mean EELV fell to 1.270 L (SD = 0.056) or 10.2 % from baseline. When the lungs were suctioned after setting the pressure with the tubing un-occluded, the mean EELV dropped to 0.404 L (SD = 0.034) or 71.4 % from baseline.

Conclusion: Failure to occlude suction tubing while setting pressure for -120 mmHg in our porcine lung model resulted in a significantly greater loss of lung volume than when using the OTS procedure to set the same pressure. Previous studies have demonstrated a link between marked loss of lung volume and a decrease in arterial oxygenation. This study implies that when suctioning - clinicians can help avoid these hazards by choosing the appropriate vacuum pressure and using the OTS procedure to set the pressure.

Presentation Number 12-133

Hand Hygiene Measurement: Analysis of the Methodology

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Background: In 2007, a Midwestern health system with 12 hospitals developed a standard process to collect Hand Hygiene (HH) compliance. Compliance rates are displayed on a systemwide, leadership incented quality scorecard. Measurement specifications included: trained observers, dedicated observation time (minimum of 15 minutes or 4 observations), monthly observation minimums, appropriate distribution of observation locations, & number of entry/ exit observations.

Objective: Determine if bias/methodology issues were present.

Methods: Period 1 was 12/07 - 5/08 (29, 441 observations). Period 2 was 1/08 - 5/09 (80,096 observations). Factors analyzed included: hospital, observer type, entry/exit distribution, & location distribution using frequencies & Chi-square.

Results: Period 1 HH compliance was 87%. Healthcare workers (HCW) other than Infection Preventionists (IP) collected 90% (26,607/29,441) of the observations & were the sole observer in 3/12 hospitals. Overall IPs scored compliance lower than HCW (IP 72.6% vs. HCW 89.1, p <0.001). This difference was significant in 3/9 (p <0.001). Non-unit based HCW scored compliance lower than unit-based (88.7% vs. 89.6%, p <0.001). Entry & exit were not paired; 56% were on exit. 2/12 had disproportionate Entry/Exit distribution. Emergency Room (ER) accounted