

encounter. Six of the 7 healthcare workers had contaminated hands at some point during the study suggesting that hand hygiene is necessary during moments of the patient encounter. Because hands were not sampled prior to patient care it is difficult to determine when hands become contaminated during patient encounters. The data generated from this study will be used for further ambulatory care studies to determine hand contamination during moments of patient encounter using the World Health Organization's 5 moments for hand hygiene.

Presentation Number 2-269

Disinfecting Stethoscope Diaphragms Using an Alcohol-Based Handrub

Amanda Billings MPH, CLS, CIC, Director of Infection Prevention, Physicians for Healthy Hospitals; **Shana Ambos RN**, BSN student, California Baptist University; **Butch Aying CLS**, Microbiologist, Physicians for Healthy Hospitals; **Larry Rabenstein CLS**, Microbiologist, Physicians for Healthy Hospitals; **Jennifer Cole RN**, Infection Preventionist, Hemet Valley Medical Center

BACKGROUND/OBJECTIVES: Stethoscope diaphragms can transmit potentially pathogenic microorganisms to patients. However, several studies have shown that healthcare providers exhibit inconsistent stethoscope disinfectant practices between patient use. The most common method for disinfecting the stethoscope diaphragm is a 70% isopropyl alcohol pad. The objective of this study is to compare the efficacy of using the standard 70% isopropyl alcohol pad to the efficacy of using a 62% ethyl alcohol based hand rub for disinfecting the stethoscope diaphragm.

METHODS: We conducted a randomized controlled study in an acute-care, community based hospital with an average daily census 120 patients to compare the effectiveness of 2 stethoscope diaphragm disinfecting protocols: (1) stethoscope diaphragm disinfecting with 70% isopropyl alcohol pad, and (2) stethoscope diaphragm disinfecting with 62% ethyl alcohol based hand rub. Stethoscope diaphragm samples were obtained from 25 nurses, 1 student nurse, 4 physicians, 3 respiratory therapists, 1 universal nursery stethoscope and 1 universal OR C-section room stethoscope before and after stethoscope disinfection. Qualitative microorganism identification was performed by microbiologists who were blinded to the disinfectant protocol.

RESULTS: Fourteen of the 35 sampled stethoscope diaphragms had microorganisms present prior to stethoscope disinfection. Overall stethoscope disinfection resulted in an 85.7% reduction of microorganism load ($p = 0.001$). The reduction in the microorganism load on the stethoscope diaphragms before and after disinfection was the same (85.7%) for both disinfection protocols, however this was not statistically significant ($p > .05$).

CONCLUSIONS: Sixty-two percent ethyl alcohol hand rub is as efficacious as using 70% isopropyl alcohol pads to disinfect the stethoscope diaphragm.

Presentation Number 2-270

A Tarnished Gold Standard?: Direct Observation vs. Monitoring Product Use for Hand Hygiene Compliance

Ann Marie Pettis RN, BSN, CIC, Director of Infection Prevention, University of Rochester Medical Center

ISSUE: Direct observation of health care providers (HCP) hand hygiene has long been considered the "Gold Standard" for determining compliance. Alternative methods such as measurement of soap and alcohol based hand rub (ABHR) consumption, and novel means of electronic monitoring are gaining recognition as possible superior alternatives to direct observation.

PROJECT: Both direct observation and product use monitoring were concurrently employed on eight inpatient units over six months (including the ICU and step down unit) in our 260 bed community teaching hospital. This represented a total of 33,100 patient days. The direct observation was done by a combination of "light duty" staff when available and a 0.5 tech hired specifically to perform compliance monitoring. The product use monitoring was accomplished by a "sticker method" whereby each time a new product dispenser went up, a special sticker was affixed to it. Rounding was done twice per week and when a dispenser was missing the sticker, it was noted that the previous dispenser had been emptied and the use data was tabulated.

RESULTS: There were 4,871 hand hygiene (HH) opportunities observed. Overall compliance was 61.1% (2976 compliant). In 78.8% of compliant episodes, ABHR was used (2345/2976). During the same time we monitored replacement of hand hygiene product on these units (875 L of ABHR and 424 L of soap. The output of soap and ABHR per activation was also measured (ABHR 0.69 ml/pump and soap 1.42 ml/pump). Overall 1,560,000 HH episodes were indirectly measured over six months based on product use which corresponds to 47 pump activations per patient per day. Use was significantly higher in ICU and Stepdown. Use was lowest on the Orthopedic unit. There was only a very loose correlation between observed compliance and product use ($P=NS$). The observed compliance with ABHR correlated with the measured use ratio between alcohol and soap products.

LESSON LEARNED: Direct observations are difficult and labor intensive and though often considered the "gold standard" they indeed miss a vast majority of encounters. On average we made only one HH observation for every 6.8 patient days. Monitoring product use or dispenser activations at the point of care captures far more information about product use, however more information is needed to correlate this with optimum hand hygiene compliance.

Presentation Number 2-271

C-Section Infections: Taking Preoperative Skin Prep One Step Further

C. Marie Dalton RN, Infection Control Preventionist, UPMC Mercy; **Marie Fabrizio RN**, Infection Preventionist, UPMC Mercy; **Victoria Vukelich RN**, Clinician, UPMC Mercy; **Christine Bridge MHMS/MBA**, Systems Analyst, UPMC Mercy; **Julliet Ferrelli MS, MT(ASCP), CIC**, Infection Control Coordinator, UPMC Mercy; **Mohamed H. Yassin MD, PhD**, Medical Director of Infection Control, UPMC Mercy; **Marie Fabrizio**, BSN Infection Preventionist, UPMC Mercy

BACKGROUND/OBJECTIVES: The prevention of surgical site infections (SSI) is heavily dependent on preoperative preparation and disinfection. Single disinfection is less effective than repeated disinfection efforts preoperatively. Caesarean section (CS) incisions are in the lower abdominal wall, an area that is usually moist and heavily colonized. Colonization can be denser in populations of morbidly obese females requiring CS. Chart review of 8 months of CS SSI patients revealed morbid obesity to be a risk factor in all 8