

# OPERATING ROOM HAND HYGIENE PRACTICES: ARE PATIENTS REALLY SAFE? AN OBSERVATIONAL STUDY

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## ABSTRACT

**Background:** Health care providers (HCP) who work in the operating room (OR) or post anesthesia care unit (PACU) have a greater opportunity to cross contaminate patients because of high workloads and frequent patient contact events. The current prevalence of health care-associated infections (HCAI) is a major health concern and patient contact in the OR and PACU can be a contributing factor due to microbial contamination. **Methods:** An observational study was conducted on the hand hygiene (HH) compliance of HCP working in the OR and PACU of a tertiary health-care facility in Saudi Arabia. The participants in the study comprised of surgeons, anesthetists, and circulating and PACU nurses. The observations and data collection were performed by two OR and PACU clinical resource nurses, who had been trained by the infection control and prevention department. **Results:** The study included 2300 opportunities for HH compliance and observed 200 nurses, 100 surgeons and 100 anesthetists. HH compliance in the OR and PACU was highest among nurses; > 90% and lowest among physicians, surgeons < 70%; followed by anesthetists < 50%. **Conclusion:** Adherence to HH guidelines by OR and PACU nurses was acceptably higher than anesthetists and surgeons.

**Keywords:** *Operating Room, Hand Hygiene, Patients Safety*

## INTRODUCTION

Biblically, HH was first mentioned in Exodus 30:18 - 21. "So they shall wash their hands and feet, so they die not." In Islam, the Qur'an (5.6) affirms that washing and cleanliness "Wudhu" (ablution) is paramount without exception (Mortell *et al.*, 2013). Scientific application of infection control practices commenced more than 180 years ago, in the historic study by Dr. Ignaz Semmelweis (Hebra, 1847; Hebra, 1848; Routh, 1849). HH is endorsed internationally as the single most important factor in preventing HCAI (Momen & Fergie, 2010; Takahashi & Turale, 2010; Ott & French, 2009; Akyol, 2007; NHS, 2007; Pratt, 2007; CDC, 2002), which is any infection that a person develops as a result of treatment in hospital. However, despite more than one century of HH knowledge and evidence based recommendations; the magnitude of HCAI and the importance of adherence to HH practices amongst HCP, continues to be low (Takahashi & Turale, 2010;

Askarian & Khallooe, 2006; Trampuz & Widmer, 2004; Pittet *et al.*, 2004). Non-compliance with HH recommendations is widely acknowledged as the most imperative amendable cause of HCAI with compliance ranging from 20-50% (Maxfield & Dull, 2011; Mani *et al.*, 2010; Ott & French, 2009; Aragon *et al.*, 2005).

It has been estimated that HCAI are responsible for 90,000 deaths per year in the United States of America (USA) (Maxfield & Dull, 2011; Smith & Lokhorst, 2009), Canada 8,000 deaths annually (Momen & Fergie, 2010) and 5,000 deaths per annum in the United Kingdom (UK) (Smith, 2009). HCAI are the most frequently reported adverse event in health care delivery (Kaier *et al.*, 2012). This is a global dilemma with more than 1.4 million people are acquiring infections in hospitals per year (Devnani *et al.*, 2011; Momen & Fernie, 2010; Pittet & Donaldson, 2005), and HCAI costs in the USA escalating to approximately 4.7 – 6.5 billion dollars per year (Stone *et al.*, 2005;