

Hand Hygiene Compliance of Healthcare Workers in a Pediatric Intensive Care Unit

We conducted an observational study over 11 months to assess the hand-hygiene compliance of health-care workers in a Pediatric intensive care unit. The overall compliance was 80.9%, which decreased with increase in workload (79.2% vs. 82.9%). Assessment of hand hygiene compliance helps understand the gaps in practices followed by healthcare workers, and plan effective protocols.

Keywords: *Asepsis, Hand-washing, Infection control.*

Hospital-acquired Infections (HAI) represent an important cause of morbidity and mortality in Intensive care units, particularly in the pediatric age group. HAIs increase the length of stay, and are associated with substantial risk of mortality [1]. Good hand hygiene reduces HAI rates and cross-transmission of antimicrobial-resistant pathogens [2]. Healthcare workers' hands become progressively colonized with potential pathogens during patient care [3,4]. Several HAI outbreaks have been associated with contaminated healthcare workers' hands [5-7]. The present study was undertaken to assess the hand-hygiene compliance of healthcare workers in the pediatric intensive care unit (PICU) of All India Institute of Medical Sciences, New Delhi, India. Ethical clearance was obtained from the Institutional Ethics Committee.

Hand hygiene observation sessions were conducted over a period of 11 months (13 February 2012-13 January 2013) by a single observer. These sessions lasted for 10 minutes each, and were randomly done, either during morning hours (9:30 am -12:30 pm) or in the afternoon (2:30 pm-5:30 pm). The PICU personnel were unaware of these observations. The hand hygiene followed by the healthcare workers was observed during 'opportunities' defined by WHO as '5 moments of hand hygiene' i.e. before touching a patient, before clean/aseptic procedure, after body fluid exposure risk, after touching a patient, and after touching a patients surrounding. The actions (hand washing or alcohol-based hand-rub) taken during these opportunities were noted and compliance was calculated by dividing number of actions with number of opportunities. The following formula: Compliance (%) = Actions/Opportunities × 100. Compliance was further categorized according to the professional category of the healthcare worker (Nurses and Doctors) and the timing (reflecting workload) of the sessions (**Table I**).

We conducted 100 hand hygiene observation sessions.

TABLE I HAND HYGIENE COMPLIANCE OF HEALTH-CARE WORKERS (N=100)

Personnel	Compliance		
	Morning slot	Afternoon slot	Overall
Nurses	78.8%	82.3%	80.7%
Doctors	80.6%	84.6%	82.4%
Total	79.2%	82.9%	80.9%

The overall hand hygiene compliance was 80.9%. Compliance to hand hygiene during afternoon was higher compared to morning hours (82.9% vs.79.2%). This possibly reflects the effect of peak workload during the morning shift (impending clinical rounds, new admissions etc.) on hand hygiene practices.

In a previous study done in our PICU, the important reasons for poor compliance to infection control practices included high workload, lack of knowledge, role models / rewards, and intuitional guidelines [8]. Limitations of our study include lack of time-trend analysis after feedback to healthcare workers, insufficient information on the accuracy of hand washing/rub technique, and the "opportunities" which were missed. Verbal feedback, hand hygiene education through posters/demonstration of hand washing technique, was given to the PICU staff at regular intervals.

We conclude that hand hygiene observation sessions conducted for as few as 10 minutes can help understand the gaps in practices followed by healthcare workers, thereby paving way for effective future hand hygiene protocols.

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