

Monitoring hand hygiene compliance upon entry and exit of a patient's room overestimates compliance with all five hand hygiene indications

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Introduction and Purpose

- Contaminated hands of healthcare workers (HCWs) are the most common vehicles for transmission of healthcare-associated pathogens, leading to spread from patient to patient and within the health care environment.
- Therefore, optimal hand hygiene behavior with correct performance is a cornerstone of prevention of healthcare-associated infections.
- The adherence to hand hygiene indications is, however, commonly low.
- Studies on compliance with hand hygiene indications commonly focus on observations of hand hygiene performance upon entry and exit of a patient's room - therefore only assessing two of the five indications for hand hygiene as outlined by the World Health Organization (WHO).¹
- Such assessments may be a poor marker for overall compliance.
- We therefore observed compliance with all five moments for hand hygiene and aimed to determine correlation of adherence to the two most commonly observed indications with all other hand hygiene indications.

Methods

- This prospective observational study was performed from July 2010 to February 2015 at the University Hospital Basel, Switzerland.
- Hand hygiene observations were performed throughout the hospital (internal medicine, surgery, obstetrics and gynecology, intensive care unit, emergency department, as well as the outpatient departments) by five trained researchers.
- HCWs were selected randomly by the observer and were only informed about the function of the observer, but did not know the definite criteria of observation. Observation times varied randomly during dayshifts.
- Information regarding compliance with the five indications for hand hygiene as outlined by the WHO was collected, i.e.:
 - Before touching a patient
 - Before clean/aseptic procedure
 - After body fluid exposure risk
 - After touching a patient
 - After touching patient surroundings
- Chi-square and Fisher's exact test (where appropriate) were used for comparisons of proportions. Two-tailed p-values smaller than 0.05 were considered significant.

Results

- During the study period, 3655 indications for hand hygiene were observed. Overall compliance was 86.6% (3166/3655).
- The most commonly observed indications were "after touching a patient" (38.7%, 1415/3655) and "before touching a patient" (30.0%, 1097/3655), followed by "after touching patient surroundings" (12.5%, 456/3655), "after body fluid exposure risk" (11.2%, 411/3655), and "before clean/aseptic procedure" (7.6%, 276/3655).
- Compliance differed significantly between indications (p<0.001), with highest adherence observed for the indication "after touching a patient" (90.1%, 1275/1415), followed by "after body fluid exposure risk" (88.8%, 365/411), "before touching a patient" (86.8%, 952/1097), "before clean/aseptic procedure" (85.5%, 236/276), and "after touching patient surroundings" (74.1%, 338/456) (Figure 1).

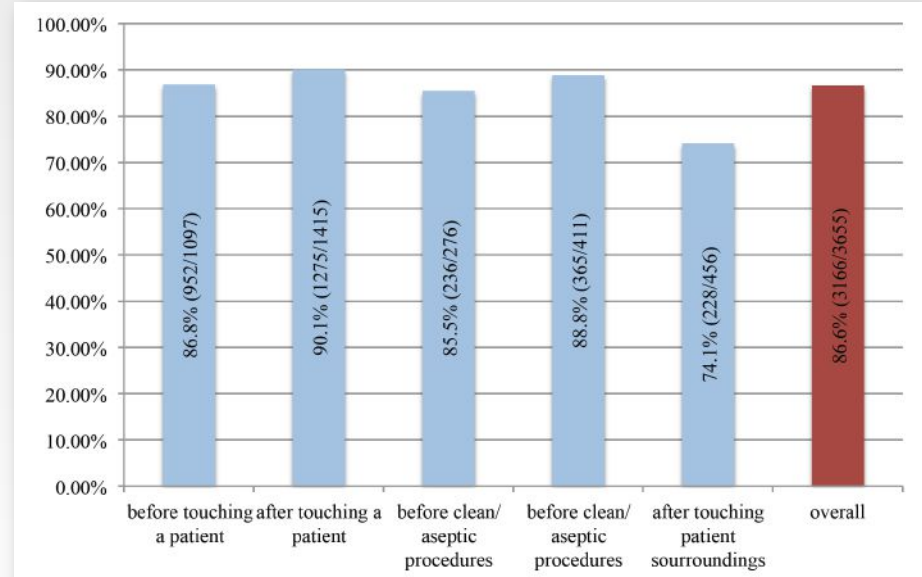


Figure 1: Compliance according to indication

- Compliance with the two indications "before and after touching a patient" was 88.6% (2227/2512) differing from compliance with all other indications (82.2%, 939/1143) p<0.001 (Figure 2).

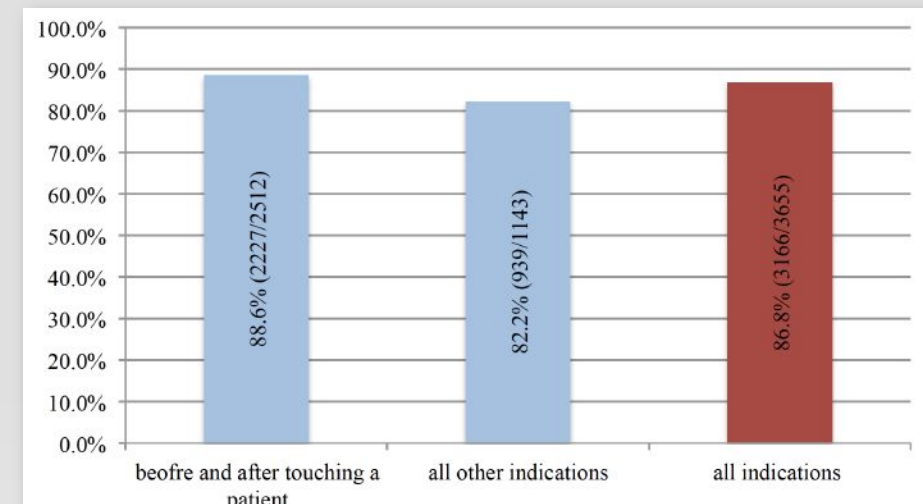


Figure 2: Compliance with the two most commonly observed indications as compared to all other indications

Conclusions

- Surveillance of compliance with the two most commonly observed indications for hand hygiene, i.e. before and after touching a patient - commonly corresponding to observations of hand hygiene upon entry and exit of a patient's room - overestimates compliance with all other hand hygiene indications.
- Effective hand hygiene compliance measurement therefore needs to take all five WHO indications into account.

References

- World Health Organization: WHO guidelines on hand hygiene in health care. Geneva: WHO Press 2009