

Environmental Contact vs. Patient Contact In The ICU: What Do We Touch?

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Background

Healthcare associated infections (HAI) are the most common complication in hospitalized patients and affect approximately 1 in 25 hospitalized patients annually (CDC, 2014). They are a leading cause of morbidity, mortality and cost. The risks of infections include devices, treatments, antibiotic exposure, the immune status of the patient, hand hygiene practices of healthcare providers and contact with environmental surfaces in a patients' room.

In 2010, the CDC's Environmental Evaluation Workgroup developed a checklist of "high touch surfaces" in ICUs to guide terminal cleaning practices, which included: bedrails, bedside table, IV pole and pump, doorknobs, toilet, light switch, chair, telephone, call bell, monitor touch screen, cables and ventilator control panel (Guh & Carling, 2010).

Objectives

The purpose of this study was to observe health care worker contact with environmental surfaces in a surgical ICU. We also observed hand hygiene (HH) practices by health care workers during each patient interaction to gather compliance data.

We hypothesized that the CDC checklist is not a comprehensive reflection of the "high touch surfaces" in today's ICU and that hand hygiene rates differ among disciplines.

Methods

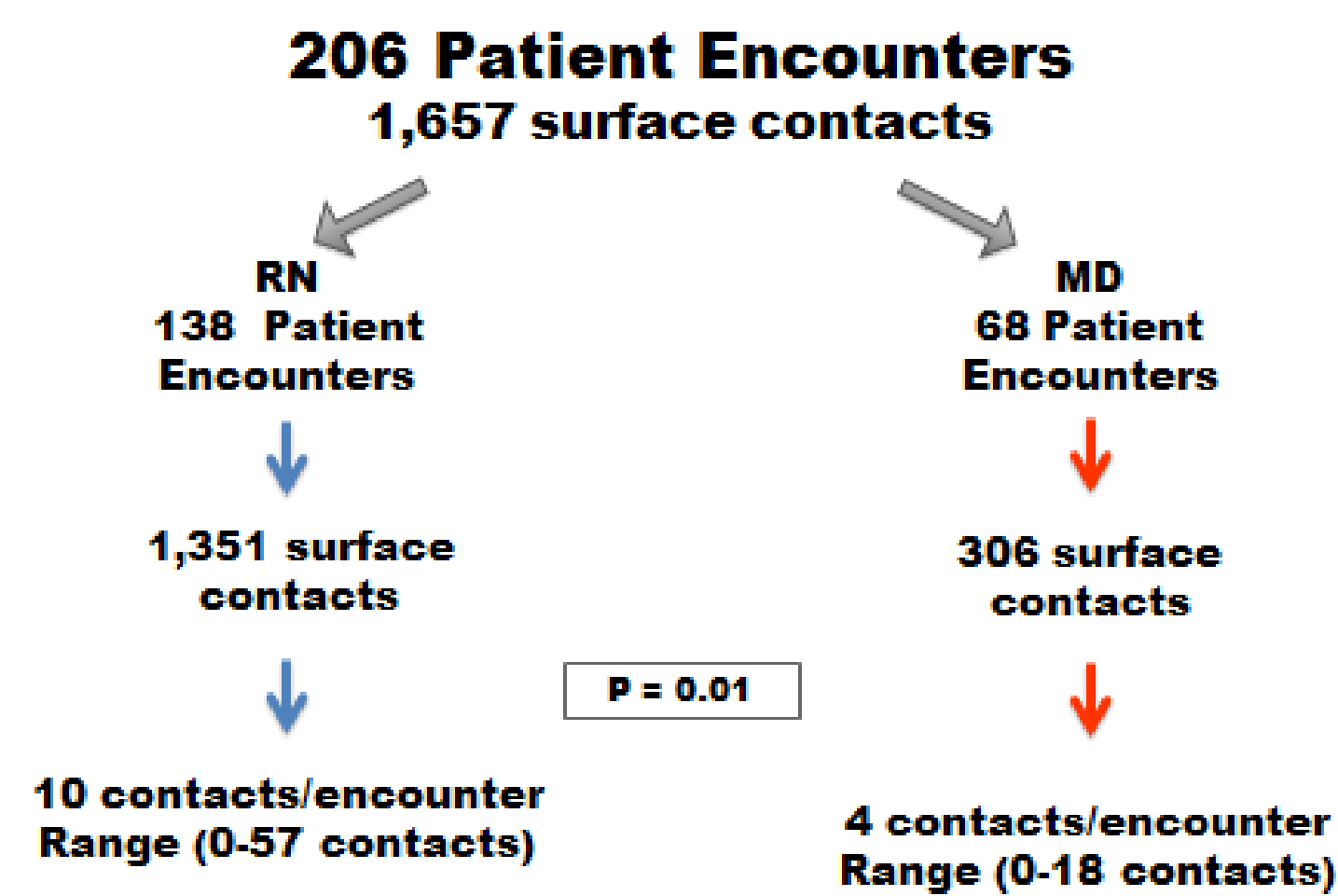
Two trained observers randomly observed patient encounters on all days of the week at random times of the day.

All hand hygiene events and contact with environmental surfaces in the patient room were observed and recorded. A complete encounter was defined as entry and exit of the healthcare worker from the patient room. Hand hygiene was defined as the use of waterless gel product or the use of soap and water at entry and exit of the patient room.

Environmental surfaces were defined and all surfaces HCW touched with their hands during the patient encounter were recorded. We compared findings to pre-established ICU high touch, medium touch and low touch zones as defined by Huslage et al (Huslage, 2013). Data analysis was performed as appropriate, $p < 0.05$.

Results

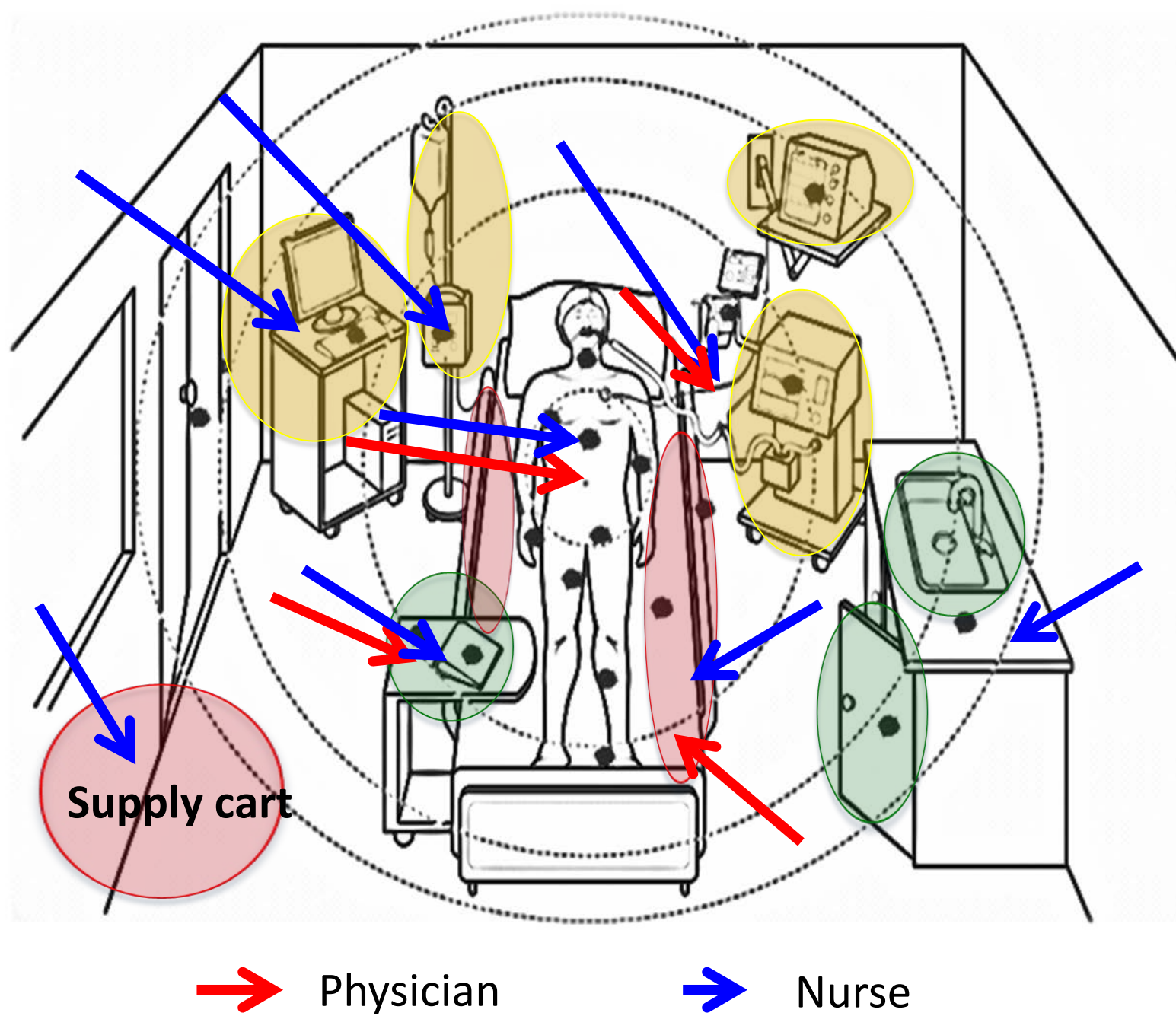
The majority of observations occurred in non-isolation patient rooms for both groups (MD: 53 (78%), RN: 124 (90%).



Definitions of Touch Zones:

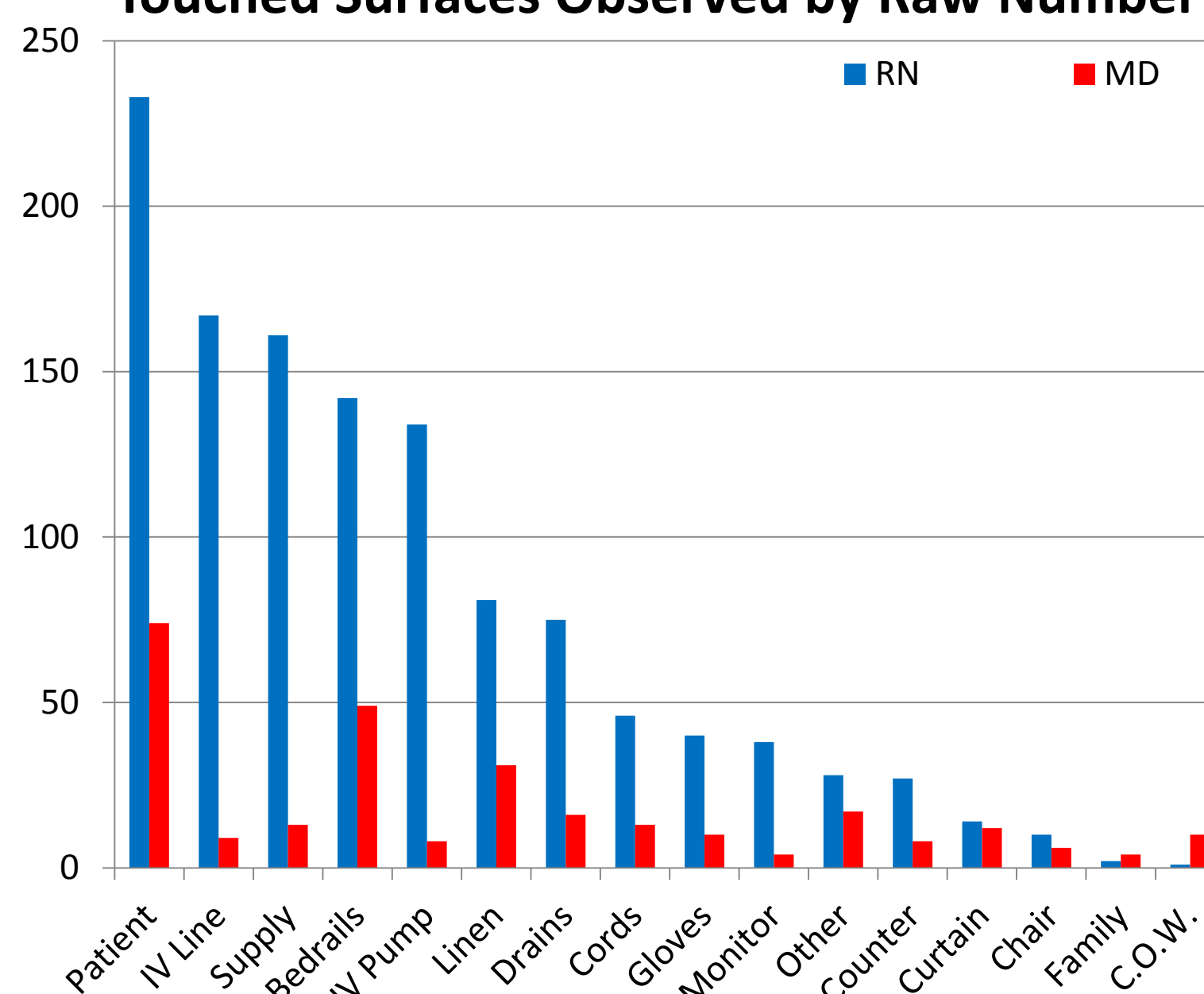
- High touch zone:** (touched > 3x/encounter)
- Medium touch zone:** (2x per encounter)
- Low touch zone:** (1x per encounter)

High Touch Zones by Discipline

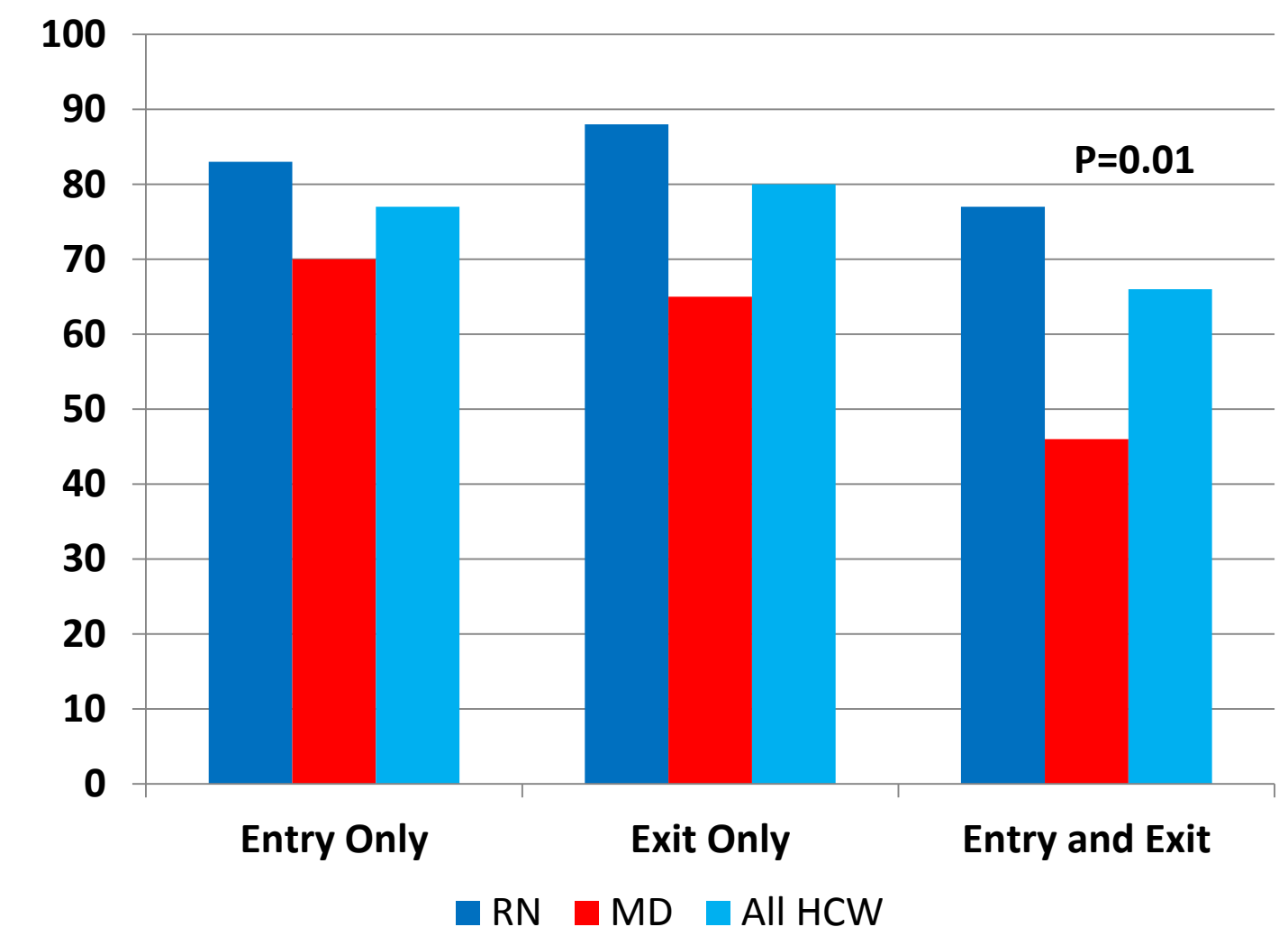


CDC Terminal Cleaning Zones: Bedrails, bedside table, IV pole and pump, doorknobs, toilet, light switch, chair, telephone, call bell, monitor touch screen, cables and ventilator control panel

Touched Surfaces Observed by Raw Number



Percent HH Compliance



Overall entry and exit hand hygiene by RN and MD was only 66%

Conclusions

- Even with increased surveillance for HH, entry and exit HH is only 66%
- We found a significant difference between professional status and hand hygiene behavior. The majority of nurses washed their hands on entry (83%) or on exit (88%) from the patients' room compared to physicians (entry 71%, exit 64%), $p = 0.01$
- The majority of interactions in a patient room are NOT with the patient they are with the environment
- High touch zones observed in this study do not match the CDC surface cleaning checklist
- More research is needed to refine CDC surface cleaning checklist and to analyze identified high touch surfaces for evidence of pathogens

References

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