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Reducing hand recontamination of health workers during COVID-19

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To the Editor,

Worldwide, the response to the COVID-19 pandemic requires hand hygiene compliance by everyone – as the WHO #SafeHands campaign and numerous documents highlight. Hand hygiene is particularly critical for front-line health workers who are overstretched and for whom this key routine task must be easy to complete and effective.(1) However, a neglected aspect of hand hygiene – even in the absence of a global pandemic – is the risk of touching surfaces or objects that could recontaminate hands after handrubbing/washing, whether gloves worn or not. Infection prevention is key during this pandemic, and reducing hand recontamination is important to ensuring patient and health worker safety at all times.

Avoiding recontamination is implicit in the WHO Hand Hygiene guidelines for health facilities.(2) Failure to comply with hand hygiene can result from not washing/rubbing hands at the right time or from subsequent hand/glove recontamination. In a recent study in Tanzania during which 781 hand hygiene indications were observed, about half of the times when birth attendants handrubbed/washed, they then recontaminated their hands on potentially unclean surfaces before performing an aseptic procedure.(3) Similar findings come from labour wards in Nigeria and Ghana.(4,5) Recontamination is not only a problem in low-income settings. A study from the USA demonstrated microbiological recontamination of hands at the point of care despite high levels of self-reported hand hygiene compliance.(6) Reports from the UK and Australia shows that health workers touch privacy curtains between hand hygiene and touching a patient (Conference abstracts from Stewardson et al., and Wilson et al. from ICPIIC 2017 - <https://aricjournal.biomedcentral.com/articles/supplements/volume-6-supplement-3>) The Tanzanian study also suggested that handrubbing/washing and glove recontamination are underpinned by different behavioural determinants.(7) Without targeting these two behaviours separately, hand hygiene initiatives during this pandemic may be undermined.

Health workers are able to prioritize patient needs when providing routine care. The COVID-19 pandemic however, has introduced significant uncertainty into the care environment and thus workflow, including timing of necessary procedures, anticipating and managing patient volumes, and rapidly evolving guidelines on patient management. During this crisis, hand hygiene, along with other infection control activities, may be compromised, not because it's not a priority but because staff may be too busy or uncertain on how to implement hand hygiene. In their ethnography of infection prevention in Australia, Hor et al. state that understanding the “boundaries of what is clean” is not straightforward in hospital departments and health workers have different perceptions over whether certain surfaces could potentially lead to cross-transmission or not.(8) Recontamination may be an indication that staff fail to understand the definition of the WHO Hand Hygiene recommendations or how those apply in rapidly changing healthcare settings.(3)

An understanding of surfaces that are safe to touch depend upon assumptions about appropriate cleaning of surfaces, cleaning frequencies, established methods and sufficient trained cleaning staff. In spite of incredible efforts from all staff including cleaners, standards are not always optimal in the UK as in many other countries.(9) Surface contamination played a plausible role in SARS, MERS, and pandemic influenza transmission in healthcare settings. Emerging evidence suggests that the virus responsible for the current pandemic (SARS-CoV-2) can survive on common surfaces for days, but viral demographics and characteristics are yet to be sufficiently studied.(10) Recontamination of hands is a consequence and a source of poor surface cleanliness (Figure 1 – step 5 and 7).

Figure 1. Example of hand recontamination during a triage scenario

We call for greater attention to the risk from hand recontamination and the opportunity for its prevention through empowering health workers and strengthening cleaning of the care environment. For those managing COVID-19 cases, these actions will improve their own and co-workers' as well as all patients and visitors.

Like so much in the COVID-19 responsiveness, behaviour change plays a key part. Behaviour change needs to be tailored and targeted, and following Michie's principles for behaviour change during the COVID-19 pandemic,(1) we recommend:

1. A mental model: Training, monitoring and feedback should include **clear guidance for understanding the “boundaries of what surfaces are clean”** with directions on what health workers can and cannot touch within the patient zone (See example in Figure 1), in relation to hand hygiene, especially before a clean or aseptic procedure.
2. Social norms: Managers and colleagues should lead by example by demonstrating appropriate hand hygiene including avoiding recontamination. There should be the **reciprocal expectation that hand hygiene protocols are followed by everyone involved in patient care.**
3. Emotion: The importance of recontamination in patient and health workers **safety** needs to be clearly emphasized.
4. Replace the behaviour to stop the habit: **“Keep hands off unsafe surfaces”** rather than “do not touch unsafe surfaces”
5. Make it easy: A user-friendly environment that facilitates hand hygiene and reduces opportunities for recontamination. The environment needs to account for the **workflow for patient management** allowing for minimal opportunities to recontamination when collecting equipment or moving between patients. The environment should also include appropriate cues to remind and trigger hand hygiene, e.g. strategic placement of handrub dispensers.

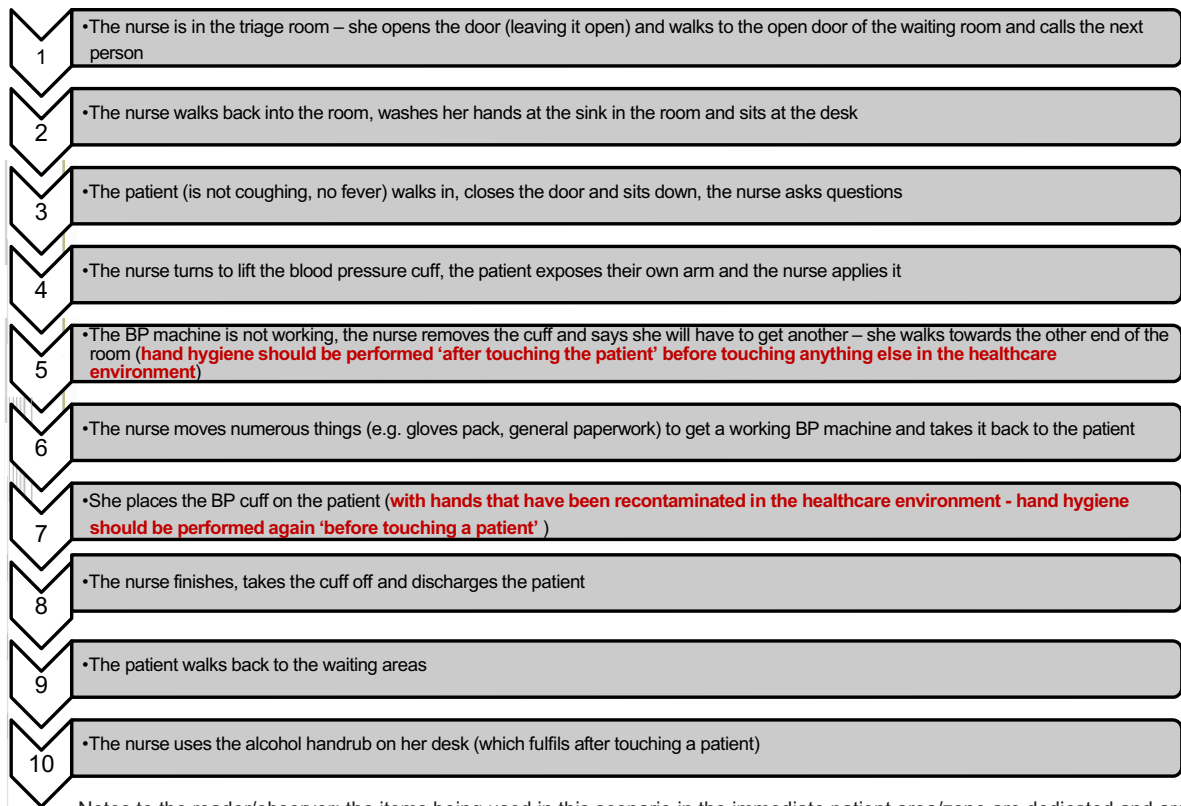
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Figure 1.

Triage scenario



Notes to the reader/observer: the items being used in this scenario in the immediate patient area/zone are dedicated and are cleaned on the agreed schedule - other items are in the 'healthcare environment'