

The objective of this observational study was to investigate whether a new glove packaging system in which gloves are dispensed one by one vertically with the cuff-end first has lower levels of contamination on the gloves and on the surface around the box aperture compared to conventional horizontally dispensed glove boxes” Assadian et al (2016).

Summary:

Background: Few studies have explored the microbial contamination of glove boxes in clinical settings. The objective of this observational study was to investigate whether a new glove packaging system in which gloves are dispensed one by one vertically with the cuff-end first has lower levels of contamination on the gloves and on the surface around the box aperture compared to conventional horizontally dispensed glove boxes.

Methods: Seven participating sites were provided with vertical glove dispensing systems and conventional boxes. Before opening boxes, the surface around the aperture was sampled microbiologically to establish base-line levels of superficial contamination. Once the boxes were opened, the first pair of gloves in each box were sampled for viable bacteria. Thereafter, testing sites were visited on a weekly basis over a period of six weeks and the same microbiological assessments made.

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Results: The surface surrounding the aperture of the modified dispenser boxes became significantly less contaminated than the conventional boxes ($P < 0.001$) with an average of 46.7% less contamination around the aperture. Overall, gloves from modified boxes showed significantly less colony-forming units contamination than gloves from conventional boxes ($P < 0.001$). Comparing all sites over the entire six-week period, modified dispensed gloves had 88.9% less bacterial contamination.

Conclusion: This simple improvement to glove box design reduces contamination of unused gloves. Such modifications could decrease the risk of microbial cross-transmission in settings that utilise gloves. However, such advantages do not substitute for strict hand-hygiene compliance and appropriate use of non-sterile, single-use gloves.

Reference:

Assadian, O., Leaper, D.J., Kramer, A. and Ousey, K.J. (2016) Can the design of glove dispensing boxes influence glove contamination? *The Journal of Hospital Infection*. September 15th. .

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