



Save The Hands While Saving From Hands

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Abstract

There has been escalating stress on hand hygiene to ensure prevention of disease-transmission. However, it is time to concurrently give due consideration to counter-concerns inherent with hand hygiene precautions and hereafter, possibly suggest an alternative solution. Although gloves have been in use as barrier method, in the absence of technological advancement to aseptically wear on the clean gloves and then to aseptically tear off the dirty gloves, personnel are not able to do away with hand washing and/or hand rubbing prior to wearing on gloves as well as after tearing off gloves. The possible solution can be auto-glove dispenser and auto-glove remover that can prevent disease-transmission due to hands while avoiding wet-work-exposure dermatitis of the hands due to repetitive hand washing and/or hand rubbing.

Opinion

There has been escalating stress on hand hygiene to ensure prevention of disease-transmission.¹ However, it is time to concurrently give due consideration to counter-concerns inherent with hand hygiene precautions and hereafter, possibly suggest an alternative solution. Hand washing with soap and water and hand rubbing with sanitizers aim at cleansing the "dirty" hands instead of barricading the hands to stay in a "clean" state.²⁻³ Although gloves have been in use as barrier method, in the absence of technological advancement to aseptically wear on the clean gloves and then to aseptically tear off the dirty gloves, personnel are not able to do away with hand washing and/or hand rubbing prior to wearing on gloves as well as after tearing off gloves.

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The possible solution can be auto-glove dispenser and auto-glove remover that can prevent disease-transmission among human beings. Being innocently unaware about pre-existing products and patents,⁴⁻⁵ our independently thought-out schematic diagrams for the same to explain our current perspective are shown in Figures 1 and 2 wherein dispensing and removing of gloves under strict sterile conditions, with the ring of each to-be-dispensed glove acting as the sterile barrier for all other gloves

next-in-the-line, can possibly make single-use non-sterile examination gloves redundant unless the futuristic auto-glove dispenser and auto-glove remover turn cost-prohibitive. In regards to their environmental burden, the single-use gloves dispensed by auto-glove dispenser can be collected in the specifically designed bins attached to auto-glove remover. Hereafter, depending on the manufacturers' recommendations and the environmental protection agencies' regulations, the material used for manufacturing gloves can determine the collected gloves' reusability or recyclability.Â Â Â Â Â Â Â Â

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Other avenues worth investigating can be (a) installing copper linings across the hospitals as an antiseptic measure;⁶⁻⁷ (b) cautioning against hugs/kisses/handshakes across workplace environments and possibly promoting no-touch greetings;⁸ and (c) inventing robots with cost-prohibitive and yet futuristically possible disposable mechanical hands to replace non-disposable human hands.⁹ However, in the interim, auto-glove dispenser and auto-glove remover can be explored to barricade human hands; this may not only curtail the spread of diseases but may also contain the risk of developing allergies and autoimmunity secondary to evolving hygiene hypothesis.¹⁰

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While the Joint Commission may be asked to consider elaborating about (a) which all interactions amount to direct patient care and (b) disease transmission risks during workplace human interactions where patients are NOT involved,¹¹ it can be safely assumed that workplace human interactions with possibilities for unavoidable contact can induce transmission of disease agents by human hands.¹² However, the hygiene hypothesis raises concerns regarding obsessive-compulsive cleansing of hands wherein pathogens can get replaced by allergens/immunogens as with wet-work-exposure dermatitis.¹³⁻¹⁵

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Summarily, while the rules are followed, the rules concurrently get questioned so that the rules can get rewritten depending on implications and complications recognized during "post-market-safety-surveillance" of current rules so as to equilibrate whatever is underdone with whatever is overdone. Henceforth, the futuristic calling can be multiple size

(small-medium-large-extra-large) auto-glove dispenser and auto-glove remover at the entry-exit points of each uniquely occupied workspace and each hospital floor space uniquely catering to patients.

Reference(s)

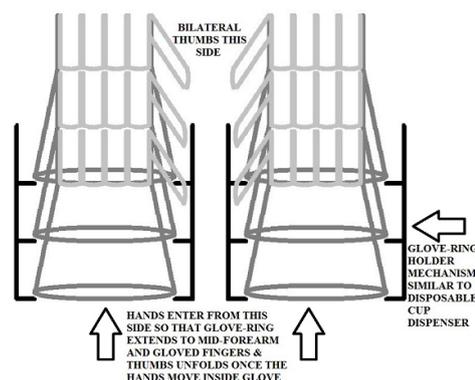
- Centers for Disease Control and Prevention. Show Me the Science - Why Wash Your Hands? (Updated Nov 18, 2015.) Accessed Feb 7, 2018. <https://www.cdc.gov/handwashing/why-handwashing.html>.
- Mayo Clinic. Hand-washing: Do's and don'ts. (Updated Jan 10, 2018.) Accessed Feb 7, 2018. <https://www.mayoclinic.org/healthy-lifestyle/adult-health/in-depth/hand-washing/art-20046253>.
- World Health Organization. Alcohol-Based Handrub Risks/Hazards. (Updated 2018.) Accessed Feb 7, 2018. <http://www.who.int/gpsc/tools/faqs/abhr2/en/>.
- Hanscraft Inc. AeroGlove. (Updated 2018.) Accessed Feb 7, 2018. <https://www.aeroglove.com/>.
- Vlock RS. Glove donning and removing machine. U.S. Patent 4,915,272. (Published Apr 10, 1990.) Accessed Feb 7, 2018. <http://www.google.com/patents/US4915272>.
- National Public Radio. A copper bedrail could cut back on infections for hospital patients. (Published Dec 15, 2014.) Accessed Feb 7, 2018. <https://www.npr.org/sections/goatsandsoda/2014/12/15/369931598/a-copper-bedrail-could-cut-back-on-infections-for-hospital-patients>.
- Copper Development Association Inc. Chile's oldest hospital uses oldest metal to protect youngest patients against harmful bacteria. (Published Jun 17, 2015.) Accessed Feb 7, 2018. <http://thinkcopper.org/healthcare/chiles-oldest-hospital-uses-oldest-metal-to-protect-youngest-patient-s/>.
- Gupta D. "Meet and greet and then treat" is no fun: Is it time to reinvent no-touch greetings for contact precautions? Indian Journal of Community Health. 2015 Mar;27(1):171-172. Accessed Feb 7, 2018. <http://www.ingentaconnect.com/content/doi/09717587/2015/00000027/00000001/art00031>.
- Inverse Innovation. The perfect robot starts with human-like hands. (Published Apr 26, 2017.) Accessed Feb 7, 2018. <https://www.inverse.com/article/30753-robot-human-hand>.
- U.S. Food & Drug Administration. Asthma: The Hygiene Hypothesis. (Updated May 31, 2017.) Accessed Feb 7, 2018. <https://www.fda.gov/BiologicsBloodVaccines/ResourcesforYou/Consumers/ucm167471.htm>.
- The Joint Commission. Update: Citing Observations of Hand Hygiene Noncompliance. (Published Dec 12, 2017.) Accessed Feb 7, 2018. https://www.jointcommission.org/assets/1/18/Update_Citing_Observations_of_Hand_Hygiene_Noncompliance.pdf.
- Arbogast JW, et al. Impact of a Comprehensive

Workplace Hand Hygiene Program on Employer Health Care Insurance Claims and Costs, Absenteeism, and Employee Perceptions and Practices. J Occup Environ Med. 2016 Jun;58(6):e231-240.

13. Medscape. The Hygiene Hypothesis - Redefine, Rename, or Just Clean It Up? (Published Apr 6, 2015.) Accessed Feb 7, 2018. <https://www.medscape.com/viewarticle/842500>.
14. Gupta D. Pathogens being replaced with allergens or immunogens: a theoretical perspective. Indian Journal of Community Health. 2013 Jun;25(4):498-499. Accessed Feb 7, 2018. <http://www.iapsmupuk.org/journal/index.php/IJCH/article/view/514>.
15. Behroozy A, Keegel TG. Wet-work Exposure: A Main Risk Factor for Occupational Hand Dermatitis. Saf Health Work. 2014 Dec;5(4):175-180.

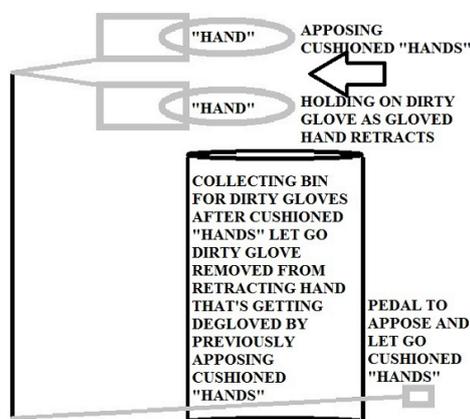
Figures

Figure 1: Schematic Representation of Auto-Glove Dispenser



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Figure 2: Schematic Representation of Auto-Glove Remover



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