Evidence of Overall Glove Use

"Hanging up the Gloves on Poor Practice"

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Nothing to Disclose

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Learning Objectives

- Describe the current recommendations on the use of gloves during the healthcare delivery process and recognize the inappropriate use of those in healthcare

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When I was a new IP…

Journal of Food Protection, Vol. 68, No. 1, 2005, Pages 187–190

Research Note

A Preliminary Evaluation of the Effect of Glove Use by Food Handlers in Fast Food Restaurants

ROBERT A. LYNCH,* MARGARET L. PHILLIPS, BRENDA L. ELLEDGE, SRIDHAR HANUMANTHAIAH, AND DANIEL T. BOATRIGHT

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MS 04-131: Received 30 March 2004/Accepted 30 June 2004

Images: Generated by Microsoft Copilot

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Similar Challenges in Healthcare

Images: Generated by Microsoft Copilot

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Glove Use in Healthcare

- Since 1987, glove use has dramatically increased[1]
- Reduces risk of hand contamination and transmission
- Protects healthcare workers

The New York Times

THURSDAY, JULY 23, 1987

Health Workers to Get AIDS Protection

By ROBERT PEAR

Employers will be required to provide safety equipment.

AIDS-Infected Are Found To Produce Virus-Killers

Lake's Re

CDC. (1987). Recommendations for prevention of HIV transmission in health-care settings. MMWR

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Infection Control & Hospital Epidemiology (2023), **44**, 355–376
doi:10.1017/ice.2022.304

SHEA

SHEA/IDSA/APIC Practice Recommendations

SHEA/IDSA/APIC Practice Recommendation: Strategies to prevent healthcare-associated infections through hand hygiene: 2022 Update

Janet B. Glowicz PhD, RN, CIC[1], Emily Landon MD[2], Emily E. Sickbert-Bennett PhD, MS, CIC[3,4], Allison E. Aiello PhD[5], Karen deKay MSN, RN, CNOR, CIC[6], Karen K. Hoffmann BSN, MS, CIC[7], Lisa Maragakis MD, MPH[8], Russell N. Olmsted MPH, CIC[9], Philip M. Polgreen MD, MPH[10], Polly A. Trexler MS, CIC[11], Margaret A. VanAmringe MHS[12], Amber R. Wood MSN, RN, CNOR, CIC[6], Deborah Yokoe MD, MPH[13] and Katherine D. Ellingson PhD[14]

- 2 New Essential Practices:
  - Environmental contamination and **glove use**
- Additional recommendations for appropriate **glove use**:
  - Competency-based training
  - No double-gloving (only with specific rec. e.g., high-consequence pathogens)

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Practice Recap: Appropriate Non-Sterile Glove Use

- Standard Precautions:[1]
  - Potential contagious exposure
  - Regardless of infection status
- Transmission-Based Precautions:
  - Pathogen or syndrome-driven
- Hand hygiene → Donning
- Doffing → Hand hygiene

[1]CDC. (2023). Isolation Precautions Guideline

Image https://www.cdc.gov/infection-control/hcp/isolation-precautions/appendix-a-figure.html

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Evidence: Impact of Gloves on Patient Outcomes

- Hand contamination **increased** when gloves not worn with *C. difficile*[1]
  - One-quarter of HCW hands contaminated after non-clinical care (e.g., tray)
  - Number of contacts and duration matter
- In special populations – extremely preterm infants
  - **Fewer** gram-positive BSI and CLABSIs when providers donned gloves after HH[2]
  - Gloves prior to patient and vascular device contact may **lessen** the risk of infection[2]

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[1]Landelle et al. (2014). ICHE
[2] Kaufman et al. (2014). JAMA Pediatrics

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Evidence: Gloves and Hand Hygiene

- Transfer of pathogens comparing gloved vs. un-gloved hands
  - Burden on gloves was 4.7% lower than un-gloved hands[1]
  - Compared to no gloves,[2]
    - Fomite-to fingerpad transfer reduced by 56%
    - Fingerpad-to-fomite transfer reduced by 47%
- Gloves showed **decreasing** loads on fingers during sequential contacts[1]
- Gloves **increase** hand contamination through poor fit (increased surface area)[1] and during doffing

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[1]King et al. (2020). Indoor Air
[2]Greene et al. (2015). AJIC

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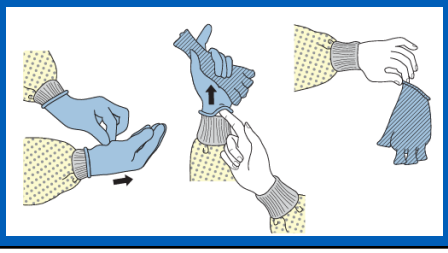
Evidence: Doffing Gloves → Contamination

- After doffing:
  - Hand contamination with a pathogen in 10 (19.6%) of 51 encounters[1]
  - Often the fingertips and wrists contaminated
- Contamination reduced:
  - When doffing included removal of first glove without touching the hand followed by inserting fingers into the dorsal side of remaining gloved hand[2]



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[1]Bingham et al. (2016). AJIC
[2]Alhmidi et al. (2019). AJIC

Image: https://www.cdc.gov/infection-control/media/pdfs/Toolkits-PPE-Sequence-P.pdf

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Evidence: Barriers to Appropriate Practice

- Failure to change gloves at appropriate moments[1]
- Donning with wet hands = unpleasant[2]
- Saves time – avoid HH for anticipated brief contact (delivering tray)[2]
- Access points – HH avoided if alcohol-based hand sanitizer not accessible[2]

[1]Kuruno et al. (2017). AJIC
[2]Baloh et al. (2019). AJIC

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Evidence: Barriers to Appropriate Practice

- ICU compared HH prior to donning to direct gloving (no HH)[1]
  - No difference in colony-forming units (CFU) on surface of the gloves (6.9 vs. 8.1 CFU)
  - Took avg 31.5 extra seconds to perform HH before donning
  - Means ~20 minutes extra line caring for a patient in isolation during 12-hr shift
- Neither CDC or WHO consider donning nonsterile gloves as indication for HH[2]

[1]Rock et al. (2019). AJIC
[2]Glowicz et al. (2023). ICHE

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Considerations for Infection Prevention Practice

- Strategies to maintain healthy skin
  - Risk for occupational irritation and allergic dermatitis [1-2]
  - Use of facility approved moisturizers
- Monitoring for HH compliance, paired with glove use
- Education to address:
  - HH and donning, changing during care, doffing to reduce hand contamination
  - Double-gloving or routinely disinfecting gloves in special circumstances

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[1]Glowicz et al. (2023). ICHE
[2]Rundle et al. (2020). J Am Academy Dermatology

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Journal of Infection Prevention

J Infect Prev. 2017 Jan 13;18(3):123–132. doi: 10.1177/1757177416680442

Public perceptions of the use of gloves by healthcare workers and comparison with perceptions of student nurses

Jennie Wilson [1], Aggie Bak [1,✉], Andrea Whitfield [1], Andrew Dunnett [1], Heather Loveday [1]

Author information · Article notes · Copyright and License information

PMCID: PMC5418898 PMID: 28989516

What is the intended reason for the gloves?

- Student nurses reported using gloves for tasks neither required nor recommended
- Public observe inappropriate glove use and are uncomfortable with use for some tasks

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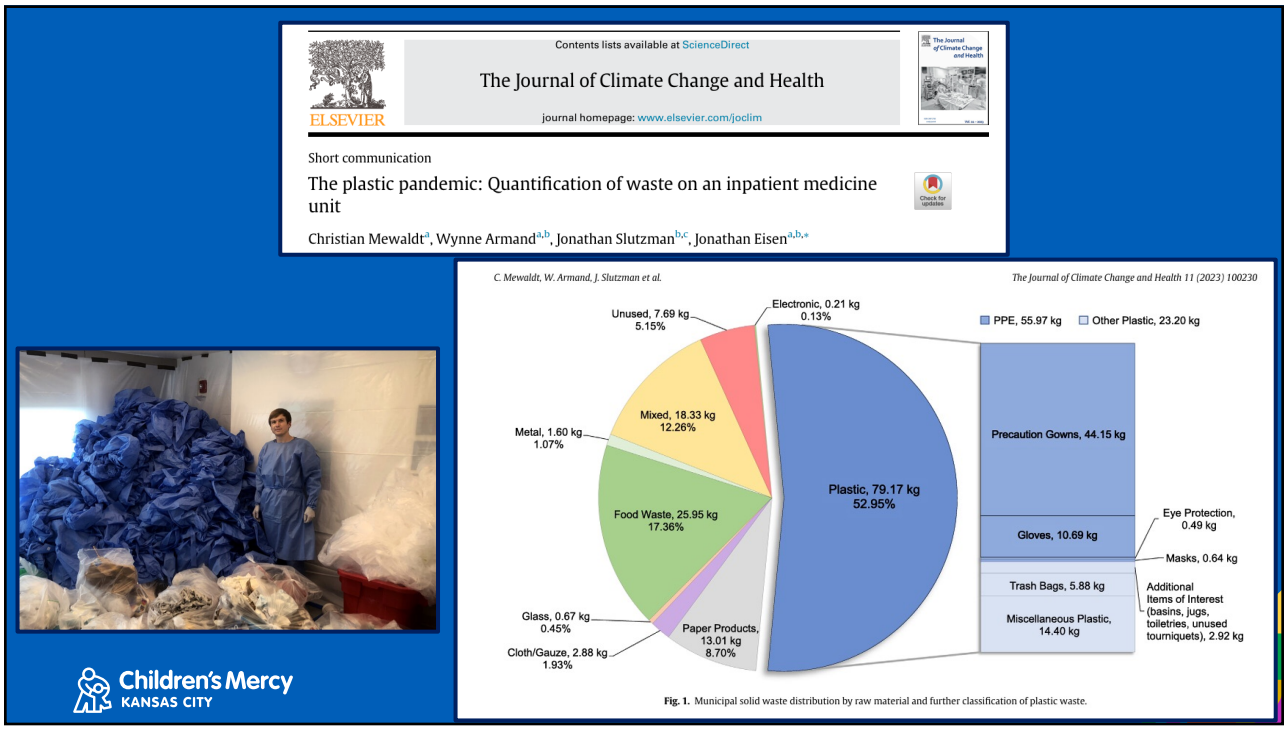

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Summary:

- High quality of evidence supports appropriate glove use to:
  - Reduce hand and environmental contamination
  - Care for preterm neonates with central lines prior to patient and vascular device contact
  - Educate HCW about potential for self-contamination and environmental contamination
    - Consider interactive methods for education

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Thank You!

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SHEA

Concise Communication

Healthcare workers' attitudes and practices around environmental sustainability in infection prevention

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Abstract

We assessed healthcare workers' knowledge, attitudes, and practices around disposable personal protective equipment (PPE) use. We observed that healthcare workers are interested in sustainable policies and identified areas for policy changes to reduce PPE waste.

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Major Article

Veteran patient perceptions of a universal gloving intervention for health care-associated infection prevention: A qualitative study

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