

Medical Gowns – Disposable vs Reusable

Reference list

[Am J Infect Control](#). 2020 Oct 20
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Disposable versus reusable medical gowns: A performance comparison

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Background

Medical gowns are essential personal protective equipment (PPE) that prevents the spread of microorganisms and bodily fluids. During surge capacity situations, such as the COVID-19 pandemic, reusable PPE is often recommended due to shortages.

Methods

This research evaluated the performance of disposable versus reusable medical gowns by assessing their ability to provide adequate protection across their expected service lifespan. Level I, II, and III gowns were tested for water resistance and hydrostatic pressure, along with other durability assessments (breaking, tear, and seam strength, pilling resistance, dimensional stability, and air permeability, colorfastness, and fabric hand) per standard test methods. Data were collected at new for the disposable gowns and after 1, 25, 50, and 75 industrial launderings for the reusable gowns. Results were compared to the Association of the Advancement Instrumentation® (AAMI) PB70 performance specifications.

Results

Level I and II disposable gowns did not meet AAMI performance specifications for impact penetration water resistance. All 3 levels of disposable gowns also failed to meet the American Society for Testing and Materials performance requirements for breaking strength in the crosswise direction.

Conclusions

The adoption of reusable gowns may result in increased protection and significant cost savings due to their superior durability and sustainability when compared to disposable gowns.

Disposable versus reusable gowns

A major challenge of the CDC's recommendation to adopt reusable gowns during surge capacity is that cloth gowns have a much lower market share than disposable gowns in US health care. Presently, disposable gowns make up at least 80% of the isolation gown market (Jenkins, 2018). However, this market share trend is expected to change over time in favor of reusable gowns. Especially as the protection of disposable gowns has been called into question after recent epidemics such as the Ebola crisis of 2014 which claimed the lives of over 11,000 people, including 500 health care personnel. Following this crisis, in 2016 it was found that some medical gowns on the market were defective, allowing fluids to leak through, ultimately infecting surgeons and nurses in contact with infected patients.¹¹

The impact of industrial laundering did not affect fabric weight for any of the reusable gowns.

Study of the gowns using the AAMI PB70 standard requirements.

In Google Search, type AAMI PB70 – this is what pops up and it is excellent

www.cdc.gov › [PPEInfo](#) › [Standards](#) › [AAMIPB70Cla...](#) ▼

[ANSI/AAMI PB70 - Class 3 - PPE-Info - Standard Details - CDC](#)

The ANSI/AAMI PB70 standard includes four standard tests to evaluate the barrier effectiveness of surgical gowns, isolation gowns, and surgical drapes.

<https://www.cdc.gov/PPEInfo/Standards/Info/ANSI/AAMIPB70Class3>

› [AORN J. 2020 Mar;111\(3\):315-325. doi: 10.1002/aorn.12885.](#)

An Environmental Analysis of Reusable and Disposable Surgical Gowns

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Abstract

Surgical gowns help protect patients from exposure to microorganisms and serve as personal protective equipment for perioperative staff members. Medical textiles, including surgical gowns, are available as reusable and disposable products. Health care facility administrators and leaders who endeavor to use environmentally sustainable practices require current data for decision making.

This study analyzed all activities from the extraction of fossil materials from the earth to the end-of-life disposal of reusable and disposable surgical gowns.

The researchers included calculations for laundry and wastewater treatment operations and compared the environmental effects of the two surgical gown systems.

The study results showed that selection of reusable gowns rather than disposable gowns:

- reduced natural resource energy consumption (64%),
- greenhouse gas emissions (66%),
- blue water consumption (83%), and
- solid waste generation (84%).

Perioperative nurses can use this information to assist facility leaders as they make informed decisions related to gown system selection.

New study shows reusable textiles' benefit to healthcare facilities

By Joseph Ricci / Special to Healthcare Facilities Today
September 15, 2014

The independent study, commissioned by TRSA, the leading global textile services trade association,

- compared three types of reusable textiles against alternative disposable products. Those products included isolation gowns, wipers and food-service napkins

Eliminating this – hospital - waste has a significant financial aspect

According to the Joint Commission on Accreditation of Healthcare Organizations, the average U.S. hospital spends between \$44 and \$68 per ton to dispose of waste.

Most American hospitals generate about 6,600 tons of waste per day.

Using that waste model, a 2005 study from Phillips & Associates, Inc., found that if a 300-bed hospital were to use disposable surgical products rather than reusables, they would incur additional costs of upwards of \$250,000.

COVID-19 vaccine – Freezer failure, Seattle, WA

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Late-night freezer failure in Seattle sends hundreds scrambling to get a fast-expiring COVID-19 vaccine

Jan. 29, 2021 at 6:39 am | Updated Jan. 29, 2021 at 3:39 pm

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By Evan Bush , Paige Cornwell and Mike Reicher
Seattle Times staff reporters

<https://www.seattletimes.com/seattle-news/health/late-night-freezer-failure-in-seattle-sends-hundreds-scrambling-to-get-a-fast-expiring-covid-19-vaccine/>