



UNIVERSITY *of* MARYLAND
MEDICAL CENTER

Use of N95 APRs at UMMC

NAS-IOM Workshop on the Integration of FDA and NIOSH
Processes Used to Evaluate Respiratory Protective Devices for
HCWs

University of Maryland Medical Center

772 bed academic medical center located in the heart of Baltimore, MD

Approximately 8,200 staff and 1,160 faculty members

30,500 admissions, 332,000 outpatient visits (2015)

Full range of services including trauma, cancer care, NeuroCare, women's and children's health, organ transplantation and psychiatry.

Respiratory Protection Uses

Infectious diseases

- Tuberculosis, varicella, measles, etc.
- Novel pathogens
 - *H1N1 (2009)*
 - *MERS CoV*
 - *Ebola*

Hazardous medications



Types of Respiratory Protection in use

Current state:

- Elastomeric respirators with P100 cartridges
- Disposable N95s (3M1860, 1860S, 1870 Plus)
- PAPRs

Future state:

- Moving elastomeric respirator users to disposable N95s*
- PAPRs

New requests for respiratory protection

- Evaluated on a case by case basis
- User needs, hazard, frequency of use

Disposable N95 characteristics

Surgical vs. non-surgical N95's

- Not an issue today.
- Was raised during the pandemic shortages when Grainger and Home Depot became potential suppliers

Testing parameters

- Flammability. Not considered an issue.
- Fluid resistance. Of concern. Resistance to viral penetration. Resistance to hazardous medications splashes.
- Biocompatibility. Not evaluated
- Filtration. Of concern.

Disposable N95 challenges

User perceptions

- While many users were happy to return to the disposable N95 world a small portion favor remaining with the reusable N95 respirators for comfort and greater feeling of safety reasons

Fit testing

- Disposable N95s less forgiving when fit testing (more time to get a good fit/more failures)
- Inability to reliably fit check

Hazardous medications

- New USP800 seems to discount the usefulness of disposable N95s (“...offer...little protection against direct liquid splashes”)

Cross contamination

- Can you catch the flu from your disposable N95?

Top 3 opportunities to improve, effective usage of disposable N95s in health care settings

Reliable consistent fit with a realistic means to fit check the mask

Resistance to hazardous medications splashes

Uniform guidance on antimicrobial treated N95s