Reusable Filtered Mask

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Guidance

In settings where facemasks are not available, HCP might use homemade masks (e.g., bandana, scarf) for care of patients with COVID-19 as a last resort.

-Centers for Disease Control and Prevention
Timeline

3/22/2020  Joe Savoie, Director of Imaging Services, texts 3D printed mask
3/23/2020  Prototype printed over night
3/24/2020  Meeting with Infection Prevention
3/25/2020  Fit test with Respiratory Support
            Asked Facebook to for people with 3D printers
3/26/2020  Connect groups in LA on getting masks made
            • CRASH Space - [https://blog.crashspace.org/](https://blog.crashspace.org/)
            • Sunweaver Creative
            • Trojan Family
            • Iovine and Young Academy
            • USC School of Architecture
            • USC School of Engineering
Reusable Filtered Mask

Reusable
  • Can be sanitized in a hospital setting

Filtered
  • Has to be able to provide filtration comparable to N95 or better

Mask
  • Must be able to fit on the face of the healthcare worker
Disinfection

1.4% Hydrogen Peroxide

THE UV Box
UV 254 nm germicidal wavelength

Pulsed Xenon Robot
UV Disinfection
Filter Material

• We are not creating our own filter material.
• We are assessing different material for efficacy and ease of installation.
• We are looking to partner with laboratories to quantitatively test filter materials.
Filter Material

Required Criteria:
• Needs to be MERV 16 or better
• Must not have fiberglass

Nice to have:
• Easy to adapt

Honeywell HEPA Filter
Model: HRF-R1
Finishing the Mask
Finished Mask
3D Printed Mask
Reusable Filtered Mask

For more information:

https://keckmedicine.org/covid/ppe

FIGHT ON!