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BRIEF COMMUNICATION

Safety Guidelines for Sterility of Face Shields During COVID 19 Pandemic

Mubarak M. Khan[1] · **Sapna R. Parab**[1]

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Abstract Face shields are personal protective equipment devices that are to be used by many health care workers during COVID 19 pandemic for protection of the facial area and associated mucous membranes (eyes, nose, mouth) from droplet spread of infection. Face shields are generally not used alone, but in conjunction with other protective equipment like cap, mask, goggle, and are therefore classified as adjunctive personal protective equipment. In the wake of scarcity of face shields during the COVID 19 Pandemic, consideration of innovating newer methods of manufacturing must be considered to overcome the present day scarcity without jeopardising the safety of front line Heath care workers. All initial fast innovations comes with advantages and disadvantages, hence we thought of putting down simple guidelines for new emerged face shield use.

Keywords PPE · Face shields · Corona pandemic · Covid 19 · Sterilisation · Safety

Face shields are personal protective equipment devices that are to be used by many health care workers during COVID 19 pandemic for protection of the facial area and associated mucous membranes (eyes, nose, mouth) from droplet spread of infection. Face shields are generally not used alone, but in conjunction with other protective equipment like cap, mask, goggle, and are therefore classified as adjunctive personal protective equipment. Since Corona Pandemic has started many innovations have evolved for Face shield to avoid droplet infection. In the wake of scarcity of face shields during the COVID 19 Pandemic, consideration of innovating newer methods of manufacturing must be considered to overcome the present day scarcity without jeopardising the safety of front line Heath care workers. All initial fast innovations comes with advantages and disadvantages, hence we thought of putting down simple guidelines for new emerged face shield use for front line Heath care workers.

We must consider following points while dealing with face shields.

1. Snug/tightly fitting.

   *The face shield must be snugly fitting around head without any gaps between forehead and shield. The readymade plastic bands are not tight fitting and may fall off with repeated use. Use of sponge in between forehead and face shield gives good comfort, but such face shields should be used as disposable as sterilisation of sponge is incomplete.

2. Disposable/Reusable

   *In case of disposable face shield, removal to be done with utmost care and dispose properly.
   *Reusable Face Shields: Utmost care to be taken while removing the shield after use and then sterilise it before reuse. Reusable face shields must be free from any sponges or sticking material or stapler pins to achieve good sterilisation.
   *Minimum 5 reusable face shields must be kept in reserve to use it alternately with sterilisation.

✉ Sapna R. Parab
drsapnaparab@gmail.com

[1] Sushrut ENT Hospital and Dr. Khan's ENT Research Center, Talegaon Dabhade, India

3. Quality of Material for face shield

Best thickness is OHP of 150–200 micron (for repeated sterilisation and handling and avoiding crimping).

4. Methods of Handling

*Never touch the front side of face shield.
*With gloved hands remove face shields from behind by untying the ribbon knot.
*Dispose along with gloves.

5. Methods of sterilisation [1–3]

*1% Sodium Hypochlorite solution for minimum of 10 min.
*Drying in Sun light and cleaning with Sanitisers with gloved hands.
*2% Glutaraldehyde for 10 min, wash it with normal saline, again dry it.
*Best way of sterilisation is ETO.

6. It's prudent to *avoid all supplementary materials like sponge, stapler pins, sticking materials, adhesives and any other fancy materials for aesthetic appeal*

We propose simplest way of preparing the Face shields.

(a) Take A4 size OHP sheet of 150–200 micron thickness.
(b) With office punching machine, make 8 holes across length of OHP sheet leaving 2 cm margin.
(c) Thread cotton ribbon gauze of 60 cm alternately through created holes for tying around head.
(d) This can be reused after sterilisation.

Advantages

1. Comfortable to use.
2. Protects a larger portion of the face.
3. Less retained dermal facial heat.
4. Minimal or no fogging than goggles.
5. Less claustrophobic.
6. No impact on breathing resistance.
7. No fit testing required.
8. Can be disinfected/sterilised easily.
9. Wearers do not need to be clean shaven.
10. Extremely cheap.
11. No impact on vocalization.
12. Do not impede facial nonverbal communication.
13. Protects against self-inoculation over a wider facial area.
14. May extend the useful life of a protective facemask when used concurrently.

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Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

References

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