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In response to request from:	Date of request:
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Comment on planned updates :	
<p>Recommendation for healthcare facilities in Switzerland for storing protection FFP masks following the norm EN149 (FFP1-3, N95, or equivalent)</p>	
<p>Summary of request/problem</p> <p>A global increased demand of personal protection face FFP masks threaten worldwide to become a bottleneck in hospitals in their response to the COVID-19 crisis. The National COVID-19 Science Task Force (NCS-TF) recommends that, for the duration of the crisis, used personal protection masks should be stored by healthcare facilities for an eventual future sterilization in the event of a complete shortage. Recommendations for the implementation of a coordinated, state of the art procedure, are required.</p>	
<p>Executive summary:</p> <p>The National COVID-19 Science Task Force (NCS-TF) recommends the authorities (FOPH) to ask healthcare facilities keeping their used FFP (Filtering Facepiece Particles) facemasks meeting the criteria of the norm EN 149 (e.g. FFP1, FFP2, FFP3, N95) and apply the following recommendations for storage before an eventual sterilization in the event of a complete shortage, making way for reusing them.</p> <p>In short, we recommend to collect FFP1-3 masks or equivalent individually. To do so, the mask is placed in a sterilization pouch closed with a scotch tape in the ward where the mask was used. Moisture accumulated in the mask during its use by healthcare professionals can lead to a proliferation of bacteria and moulds. Therefore the mask should be dried before final storage in a closed bag or container. To allow drying, masks should be placed in a metal wire basket or a container with holes and air gaps allowing air drying . Masks should not be compressed. Collection containers should then be transported safely to a closed and dry room, containing a dehumidifier (recommended). After drying, the sterilization pouches are sealed and stored either in air tight bags or larger sealed boxes containing silica gel.</p> <p>When: immediately until the end of the COVID-19 emergency situation</p> <p>Who: Concern the FOPH and all healthcare facilities using FFP or equivalent masks in Switzerland</p>	
<p>Main text</p> <p>Glossary</p> <p>FFP Masks or Filtering Facepiece Particles facemasks, or personal protection facemasks are masks meeting the criteria of the norm EN 149 (e.g. FFP1, FFP2, FFP3, N95, or equivalent)</p>	

The user The user means the healthcare professional that used a FFP mask and is asked to start the storage procedure of the mask after wearing it.

General consideration

All healthcare professionals, including the user, involved in handling such masks before final storage should be instructed according to these recommendations and wear surgical masks and gloves and apply hand hygiene before and after the procedure. Used FFP or equivalent masks should not be stored in the wards, but carried at least once a day to the dedicated drying room. The user should avoid wearing cosmetics, makeup, or lipstick because such products leave particles and spoils within the mask and renders reprocessing impossible.

Recommended process

1. For hygienic and safety reasons, the masks will be collected individually in a sterilization pouch.
2. To identify the mask, the user writes name, surname, department, name of the hospital, matriculation number on the plastic side of the pouch as well as the current date. It is imperative to use a dedicated pen (see "material" below).
3. Before manipulating the mask, healthcare professionals must perform hand hygiene (using alcohol-based handrub).
4. The user should remove his/her mask according to hospital recommendations
5. The user should visually inspect the mask after use to identify parts or areas that are damaged, deformed or soiled – if present, the mask must be thrown away.
6. The user should place the mask in the sterilization pouch without touching the outside of the mask. Position the mask with its inside facing the transparent side of the pouch. The mask should not be compressed or folded.
7. The user should proceed to hand disinfection.
8. Close the pouch with a tape on its top.
9. Place the closed pouch in a metal wire basket or a container with holes and air gaps that allows air drying. For not hindering the mask drying, the pouches must not be compressed.
10. Cover or close the metal wire basket or container, and place it in a cart or trolley for safe transport to the mask storage room. Place a cover on the cart and add a visible biohazard warning sticker to the cart.
11. Store the cart or trolley in a closed and dry room at ambient air; A dehumidifier is recommended. Date and hour of entry in the room should be noted.
12. Drying time of the masks depends on various factors including type and brand of mask. Basically, two types can be distinguished: Masks that absorb little and masks that absorb

plenty humidity. The recommended drying process works for both types of masks after at least 24 hours.

13. Seal the sterilization pouch using a laminator at the end of the drying process.
14. Place the sealed sterilization pouches in air-tight (ideally stackable) box (or in a plastic bag placed within a box); add 30 g silica gel per 10 masks in the air-tight box or in the plastic bag to keep the masks dry.
15. Store the boxes in a dry place.
16. For testing and quality insurance purposes a randomly selected sample of healthcare facilities will be asked to provide with preserved masks stored according to the present procedure.

Required resources

Material

- Closed, dedicated, and dry room
- Sterilization pouches
- Dehumidifier device, placed away from the masks to avoid air flow towards the masks
- UV lamp (or disinfectant) for the water tank of the dehumidifier exhaust
- metal wire basket or container with holes and air gaps allowing air drying
- Cart or trolley (any transport cart, but if possible a cart that store the masks during the drying process to minimize handling, with cage like structure or large holes allowing air drying of its content)
- Sterilization environment utility marker
- Tape
- Laminator
- Large air-tight box
- Silica gel

Contact

2 persons of contact with a primary contact; TBD

Unresolved issues

1. Definitive storage timeline as a sterilization process will be proposed at a future date.
2. Contacts person for coordinating the implementation and answering questions should be defined

References

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5. Drying Process of FFP2 Masks. Unpublished results 07.04.2020

Appendices

Implementation example