AB179. SOH21AS197. Protecting the personal protection equipment: an analysis of the effects of sterilisation methods for filtering facepiece masks for re-use

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Background: With advice from the World Health Organization (WHO) on the rational use of personal protective equipment (PPE), contingencies should be put in place when considering facial PPE supply during the current global climate. The purpose of this study is to assess the potential damage of readily available sterilisation methods on facial PPE filtration capacity when considering for reuse in the Irish Healthcare setting.
Methods: Filtering facepiece (FFP) class 2 and 3 respirators were obtained for analysis in this study. Autoclave and vaporised hydrogen peroxide (VHP) sterilisation used with protocols for SARS-CoV-2. Filtration capacity analysis was carried out. Each respirator variation was subjected to both sterilisation methods and underwent analysis of filtration capacity following one, three and five cycles. Testing of filtration capacity was then carried out following the wearing and subsequent sterilisation of each respirator in a controlled environment.
Results: Results have shown that autoclave and VHP sterilisation is suitable for both FFP 2 and 3 masks for certain respirator brands. One respirator brand was excluded from further analysis after failing to reach the current studies minimum filtration capacity requirements.
Conclusions: Our novel data has shown that both autoclave and VHP are potentially suitable for re-sterilisation of facial PPE. Our data has shown a difference in performances between respirator brand and so sterilisation may not be suitable for all respirator types. However, these results are promising in the future implementation of a back-up plan for potential dwindling facial PPE supplies.
Keywords: Coronavirus disease 2019; filtering facepiece (FFP); personal protective equipment (PPE); respirator; sterilisation; surgery

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Footnote

Conflicts of Interest: The authors have no conflicts of interest to declare.

Ethical Statement: The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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