**Primary Outcome: 2.** Contamination of skin or clothing measured with any type of test material to visualize contamination;

**Question**: PAPR compared to E-RCP for respiratory protection in healthcare workers dealing with patients infected with highly virulent viral diseases?

**Setting**: Aerosol Generating Procedures or Prolonged Contact with Infected Patients

**Bibliography**: Zamora 2006(1) Chughtai 2018 (2);

| **Certainty assessment** | | | | | | | **№ of patients** | | **Effect** | | **Certainty** | **Importance** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **№ of studies** | **Study design** | **Risk of bias** | **Inconsistency** | **Indirectness** | **Imprecision** | **Other considerations** | **PAPR** | **E-RCP** | **Relative (95% CI)** | **Absolute (95% CI)** |
| **Any contamination** | | | | | | | | | | | | |
| 1  Zamora et al 2006 | randomised trials  (Zamora2006) | serious | serious | serious | serious | all plausible residual confounding would suggest spurious effect, while no effect was observed | 13/50 (26.0%) | 48/50 (96.0%) | **RR 0.27** (0.17 to 0.43) | **701 fewer per 1,000** (from 797 fewer to 547 fewer) | ⨁◯◯◯ VERY LOW | IMPORTANT |
| **Contamination greater than 1 cm** | | | | | | | | | | | | |
| 1 | randomised trials  (Zamora2006) | serious | serious | serious | serious | all plausible residual confounding would suggest spurious effect, while no effect was observed | 10/50 (20.0%) | 48/50 (96.0%) | **RR 0.21** (0.12 to 0.36) | **758 fewer per 1,000** (from 845 fewer to 614 fewer) | ⨁◯◯◯ VERY LOW | IMPORTANT |
| **Size of the contamination area** | | | | | | | | | | | | |
| 1 | randomised trials  (Zamora2006) | serious | serious | serious | serious | all plausible residual confounding would suggest spurious effect, while no effect was observed | 50 | 50 | - | mean **81.1 lower** (96.07 lower to 66.13 lower) | ⨁◯◯◯ VERY LOW | IMPORTANT |
| **Donning non-compliance** | | | | | | | | | | | | |
| 1 | randomised trials  (Zamora2006) | serious | serious | serious | serious | all plausible residual confounding would suggest spurious effect, while no effect was observed | 15/50 (30.0%) | 2/50 (4.0%) | **RR 7.50** (1.81 to 31.10) | **260 more per 1,000** (from 32 more to 1,000 more) | ⨁◯◯◯ VERY LOW | IMPORTANT |
| **Doffing non-compliance** | | | | | | | | | | | | |
| 1 | randomised trials  (Zamora2006) | serious | serious | serious | serious | all plausible residual confounding would suggest spurious effect, while no effect was observed | 6/50 (12.0%) | 12/50 (24.0%) | **RR 0.50** (0.20 to 1.23) | **120 fewer per 1,000** (from 192 fewer to 55 more) | ⨁◯◯◯ VERY LOW | IMPORTANT |
| **Any contamination** | | | | | | | | | | | | |
| 1 | observational studies  (Chughtai2018) | serious | serious | serious | serious | all plausible residual confounding would suggest spurious effect, while no effect was observed | 0/6 (0.0%) | 4/24 (16.7%) | not estimable |  | ⨁◯◯◯ VERY LOW |  |

**CI:** Confidence interval; **RR:** Risk ratio

**Secondary Outcomes: 1.** level of wearer comfort, visibility and audibility whilst using the PAPR over alternative respiratory protection;

**2.** objective and/or subjective measures of work of breathing during the use of PAPR versus alternative respiratory protective equipment;

**Question**: PAPR compared to other respiratory protection for infection control methods for level of wearer comfort

**Question: What is the level of wearer comfort with PAPR**

**Setting**: Aerosol Generating Procedures or Prolonged Contact with Infected Patients

**Bibliography**: Chughtai et al 2020 (3), Chughtai et al 2018 (2), Powell et al 2017, (4) Scumacher et al 2020, Scumacher et al 2013 , Schumacher et al 2009 (5-8)

| **Certainty assessment** | | | | | | | **№ of patients** | | **Effect** | | **Certainty** | **Importance** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **№ of studies** | **Study design** | **Risk of bias** | **Inconsistency** | **Indirectness** | **Imprecision** | **Other considerations** | **PAPR** | **other respiratory protection** | **Relative (95% CI)** | **Absolute (95% CI)** |
| **Comfort of donning PAPR** | | | | | | | | | | | | |
| 1  Chughtai et al 2020 | observational studies | extremely serious | serious | serious | serious | all plausible residual confounding would reduce the demonstrated effect | 14/20 (70.0%) | - | - | - | ⨁◯◯◯ VERY LOW | IMPORTANT |
| **Comfort of doffing PAPR** | | | | | | | | | | | | |
| 1  Chughtai et al 2018 | observational studies | extremely serious | serious | serious | serious | strong association all plausible residual confounding would suggest spurious effect, while no effect was observed | 15/20 (75.0%) | 0.0% | not estimable |  | ⨁◯◯◯ VERY LOW | IMPORTANT |
| **Level of reported wearer discomfort** | | | | | | | | | | | | |
| 2  Chughtai et al 2020  Chughtai et al 2018 | observational studies | extremely serious | serious | serious | serious | all plausible residual confounding would suggest spurious effect, while no effect was observed | 8/30 (26.7%) | 24/24 (100.0%) | not estimable |  | ⨁◯◯◯ VERY LOW | IMPORTANT |
| 0.0% |  |
| **Level of wearer comfort on a self reported scale** | | | | | | | | | | | | |
| 1  Powell et 2017 | observational studies | serious | serious | serious | serious | all plausible residual confounding would suggest spurious effect, while no effect was observed | 36 | 12 | - | **0**  (0 to 0 ) | ⨁◯◯◯ VERY LOW |  |
| **Self reported work of breathing** | | | | | | | | | | | | |
| 1  Powell et al 2017 | observational studies | serious | serious | serious | serious | all plausible residual confounding would suggest spurious effect, while no effect was observed | 36 | 12 | - | **0**  (0 to 0 ) | ⨁◯◯◯ VERY LOW |  |
| **Facial temperature as a surrogate measure of wearer comfort** | | | | | | | | | | | | |
| 1  Powell et al 2017 | observational studies | serious | serious | serious | serious | all plausible residual confounding would suggest spurious effect, while no effect was observed | 36 | 12 | - | **0**  (0 to 0 ) | ⨁◯◯◯ VERY LOW |  |
| **Self-reported perception of heat build up as a measure of wearer comfort** | | | | | | | | | | | | |
| 2  Schumacher et al 2013  And Schumacher 2020 | randomised trials | serious | not serious | serious | not serious | all plausible residual confounding would suggest spurious effect, while no effect was observed | 116 | 232 | - | **0**  (0 to 0 ) | ⨁⨁⨁◯ MODERATE |  |
| **Self-reported perception of visibility as a measure of wearer comfort** | | | | | | | | | | | | |
| 1  Schumacher et al 2020 | randomised trials | serious | not serious | serious | not serious | all plausible residual confounding would reduce the demonstrated effect | 100 | 200 | - | **0**  (0 to 0 ) | ⨁⨁⨁◯ MODERATE |  |
| **Self-reported perception of audibility/communication** | | | | | | | | | | | | |
| 3  Schumacher al 2020  Schumacher et al 2013  Schumacher et al 2009 | randomised trials | serious | not serious | serious | not serious | all plausible residual confounding would reduce the demonstrated effect | 130 | 260 | - | **0**  (0 to 0 ) | ⨁⨁⨁◯ MODERATE |  |
| **Self-reported perception of mobility as a measure of wearer comfort** | | | | | | | | | | | | |
| 2  Schumacher et al 2013  Schumacher et al 2009 | randomised trials | serious | not serious | serious | not serious | all plausible residual confounding would suggest spurious effect, while no effect was observed | 30 | 60 | - | **0**  (0 to 0 ) | ⨁⨁⨁◯ MODERATE |  |
| **Self reported work of breathing** | | | | | | | | | | | | |
| 1  Schumacher et al 2009 | randomised trials | serious | not serious | serious | not serious | all plausible residual confounding would suggest spurious effect, while no effect was observed | 14 | 28 | - | **0**  (0 to 0 ) | ⨁⨁⨁◯ MODERATE |  |

**CI:** Confidence interval

**Secondary Outcome: 4.** impact of structured training programs on PAPR use over alternative training or no teaching;

**Question**: Should structured training in PPE( including PAPR) compared to no structured training be implemented for Healthcare workers?

**Setting**: Perioperative patient care

**Bibliography**: Andonian 2019 (9)

| **Certainty assessment** | | | | | | | **№ of patients** | | **Effect** | | **Certainty** | **Importance** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **№ of studies** | **Study design** | **Risk of bias** | **Inconsistency** | **Indirectness** | **Imprecision** | **Other considerations** | **structured training in PPE( including PAPR)** | **no structured training** | **Relative (95% CI)** | **Absolute (95% CI)** |
| **Number of Healthworkers contaminating at least one body surface with fluorescein** | | | | | | | | | | | | |
| 1  Andonian et al 2019 | randomised trials | serious | serious | serious | serious | all plausible residual confounding would suggest spurious effect, while no effect was observed | 11/13 (84.6%) | 13/13 (100.0%) | not estimable |  | ⨁◯◯◯ VERY LOW | IMPORTANT |

**CI:** Confidence interval; **RR:** Risk ratio

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