**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 associationall 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 2020Chughtai 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 2013And 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 2020Schumacher et al 2013Schumacher 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 2013Schumacher 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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