

CADTH RAPID RESPONSE REPORT: SUMMARY OF ABSTRACTS

# Protective Eyewear for Health Care Workers: Clinical Effectiveness and Guidelines

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## Research Questions

1. What is the clinical effectiveness of protective eyewear for health care workers caring for patients with suspected or confirmed respiratory tract infections?
2. What are the evidence-based guidelines regarding the use of protective eyewear by health care workers caring for patients with suspected or confirmed respiratory tract infections?

## Key Findings

No relevant literature was identified regarding the clinical effectiveness of protective eyewear for health care workers caring for patients with suspected or confirmed respiratory tract infections. Additionally, no evidence-based guidelines were identified regarding the use of protective eyewear by health care workers caring for patients with suspected or confirmed respiratory tract infections.

## Methods

### Literature Search Methods

A limited literature search was conducted by an information specialist on key resources including MEDLINE, PubMed, the Cochrane Library, the University of York Centre for Reviews and Dissemination (CRD) databases, the websites of Canadian and major international health technology agencies, as well as a focused internet search. The search strategy was comprised of both controlled vocabulary, such as the National Library of Medicine's MeSH (Medical Subject Headings), and keywords. The main search concepts were eye protection and healthcare workers caring for patients with suspected or confirmed respiratory tract infections. Methodological filters were not used to limit the search. The search was limited to English language documents published between Jan 1, 2010 and Aug 31, 2020. Internet links were provided, where available.

### Selection Criteria and Summary Methods

One reviewer screened literature search results (titles and abstracts) and selected publications according to the inclusion criteria presented in Table 1. Full texts of study publications were not reviewed. The Overall Summary of Findings was based on information available in the abstracts of selected publications. Open access full-text versions of evidence-based guidelines were reviewed when abstracts were not available, and relevant recommendations were summarized.

**Table 1: Selection Criteria**

<b>Population</b>	Health care workers caring for patients with suspected or confirmed respiratory tract infections (e.g., coronavirus disease, influenza)
<b>Intervention</b>	Protective eyewear (e.g., safety glasses, face shields, goggles)
<b>Comparator</b>	Q1: Alternative protective eyewear Q2: Not applicable

<b>Outcomes</b>	Q1: Clinical effectiveness (e.g., risk of transmission) Q2: Recommendations regarding best practices (e.g., guidance related to the selection of protective eyewear in various clinical scenarios, information relating to the cleansing of protective eyewear)
<b>Study Designs</b>	Health technology assessments, systematic reviews, randomized controlled trials, non-randomized studies, evidence-based guidelines

## Results

No relevant health technology assessments, systematic reviews, randomized controlled trials, or non-randomized studies were identified regarding the clinical effectiveness of protective eyewear for health care workers caring for patients with suspected or confirmed respiratory tract infections. Additionally, no evidence-based guidelines were identified regarding the use of protective eyewear by health care workers caring for patients with suspected or confirmed respiratory tract infections.

References of potential interest that did not meet the inclusion criteria are provided in the appendix.

## Overall Summary of Findings

No relevant literature was found regarding the clinical effectiveness of protective eyewear for health care workers caring for patients with suspected or confirmed respiratory tract infections. Additionally, no evidence-based guidelines were identified regarding the use of protective eyewear by health care workers caring for patients with suspected or confirmed respiratory tract infections; therefore, no summary can be provided.

## References Summarized

### Health Technology Assessments

No literature identified.

### Systematic Reviews and Meta-analyses

No literature identified.

### Randomized Controlled Trials

No literature identified.

### Non-Randomized Studies

No literature identified.

### Guidelines and Recommendations

No literature identified.

## Appendix — Further Information

### Previous CADTH Report

1. Lee KM, Shukla VK, Clark M, Mierzwinski-Urban M, Pessoa-Silva CL, and Conly J. Physical Interventions to Interrupt or Reduce the Spread of Respiratory Viruses — Resource Use Implications: A Systematic Review. Ottawa: Canadian Agency for Drugs and Technologies in Health; 2011. Available from: [https://www.cadth.ca/media/pdf/M0024\\_respiratory\\_viruses\\_tr\\_e.pdf](https://www.cadth.ca/media/pdf/M0024_respiratory_viruses_tr_e.pdf) Accessed 2020 Sep 8.

### Systematic Review and Meta-Analysis – Unclear Population

2. Chu DK et al. Physical distancing, face masks, and eye protection to prevent person-to-person transmission of SARS-CoV-2 and COVID-19: a systematic review and meta-analysis. *Lancet*. 2020; 395(10242):1973-1987. <https://www.sciencedirect.com/science/article/pii/S0140673620311429?via%3Dihub> Accessed 2020 Sep 8.

### Non-Randomized Study – No Comparator

3. Lindsley WG, Noti JD, Blachere FM, Szalajda JV, Beezhold DH. Efficacy of face shields against cough aerosol droplets from a cough simulator. *J Occup Environ Hyg*. 2014;11(8):509-518. [PubMed: PM24467190](https://pubmed.ncbi.nlm.nih.gov/24467190/)

### Guidelines and Recommendations – Unclear Methodology

4. Alberta Health Services. IPC COVID-19 PPE Recommendation for the Preservation and Reuse of Eye Protection; 2020. <https://www.albertahealthservices.ca/assets/healthinfo/ipc/hi-ipc-covid-ppe-eye-protecton-z0-emerging-issues.pdf> Accessed 2020 Sep 8.  
*See: Prevention Strategies and Principles for Reusing Disposable Eye Protection*
5. Alberta Health Services. Care of the Adult Critically Ill COVID-19 Patient. Annex D; 2020 Jul. <https://www.albertahealthservices.ca/assets/info/ppih/if-ppih-covid-19-care-adult-critically-ill.pdf> Accessed 2020 Sep 8.  
*See: F. Infection Prevention Precautions - Eye protection (disposable face shields/goggles) (p. 8)*
6. Australian Government Department of Health. Distribution of eye protection through Primary Health Networks Addendum to Tranche 4; 2020 Aug 10. <https://www.health.gov.au/sites/default/files/documents/2020/08/addendum-to-tranche-4-guidance-distribution-of-eye-protection-through-primary-health-networks.pdf> Accessed 2020 Sep 8.
7. Australian Government Department of Health. ICEG guidelines on cleaning and disinfection of protective eyewear in health and residential care facilities; 2020 Aug 21. <https://www.health.gov.au/sites/default/files/documents/2020/08/iceg-guidelines-on-cleaning-and-disinfection-of-protective-eyewear-in-health-and-residential-care-facilities.pdf> Accessed 2020 Sep 8.

8. BC Centre for Disease Control. Interim Guidance: Public Health Management of cases and contacts associated with novel coronavirus (COVID-19) in the community; 2020 Aug 25.  
[http://www.bccdc.ca/resource-gallery/Documents/Guidelines%20and%20Forms/Guidelines%20and%20Manuals/Epid/CD%20Manual/Chapter%201%20-%20CDC/2019-nCoV-Interim\\_Guidelines.pdf](http://www.bccdc.ca/resource-gallery/Documents/Guidelines%20and%20Forms/Guidelines%20and%20Manuals/Epid/CD%20Manual/Chapter%201%20-%20CDC/2019-nCoV-Interim_Guidelines.pdf)  
 Accessed 2020 Sep 8.  
*See: Recommended Use of Personal Protective Equipment – Eye protection (p. 17)*
9. Centers for Disease Control and Prevention. Interim Infection Prevention and Control Recommendations for Healthcare Personnel During the Coronavirus Disease 2019 (COVID-19) Pandemic; 2020 Jul 15.  
<https://www.cdc.gov/coronavirus/2019-ncov/hcp/infection-control-recommendations.html> Accessed 2020 Sep 8.  
*See: 2. Recommended infection prevention and control (IPC) practices when caring for a patient with suspected or confirmed SARS-CoV-2 infection - Eye Protection*
10. Health and Safety Executive. Rapid evidence review. Part one: Equivalence of N95 and FFP2 masks Part two: Aprons, Gowns and eye protection; 2020 Mar.  
<https://www.hse.gov.uk/coronavirus/assets/docs/face-mask-equivalence-aprons-gown-eye-protection.pdf> Accessed 2020 Sep 8.  
*See: Eye protection (p. 13-14)*
11. Ministry of Health Ontario. COVID-19 Guidance: Acute Care; 2020 Jun.  
[http://www.health.gov.on.ca/en/pro/programs/publichealth/coronavirus/docs/2019\\_acute\\_care\\_guidance.pdf](http://www.health.gov.on.ca/en/pro/programs/publichealth/coronavirus/docs/2019_acute_care_guidance.pdf) Accessed 2020 Sep 8.  
*See: Occupational Health & Safety - Personal Protective Equipment (PPE) (p. 7-8)*
12. Ministry of Health Ontario. COVID-19 Guidance: Primary Care Providers in a Community Setting; 2020 May.  
[http://www.health.gov.on.ca/en/pro/programs/publichealth/coronavirus/docs/2019\\_primary\\_care\\_guidance.pdf](http://www.health.gov.on.ca/en/pro/programs/publichealth/coronavirus/docs/2019_primary_care_guidance.pdf) Accessed 2020 Sep 8.  
*See: Occupational Health & Safety - Personal Protective Equipment (PPE):25 (p. 8-9)*
13. Office of the Chief Medical Officer of Health, New Brunswick. COVID-19: Guidance for Long-Term Care Facilities (LTCF); 2020 Apr.  
[https://www2.gnb.ca/content/dam/gnb/Departments/h-s/pdf/covid-19\\_ltcf\\_guidance\\_e.pdf](https://www2.gnb.ca/content/dam/gnb/Departments/h-s/pdf/covid-19_ltcf_guidance_e.pdf) Accessed 2020 Sep 8.  
*See: Appendix H: Eye Protection, Surgical/Procedural Masks & Gloves (p. 28)*
14. Public Health England. COVID-19: Guidance for the remobilisation of services within health and care settings Infection prevention and control recommendations; 2020 Aug.  
[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/910885/COVID-19\\_Infection\\_prevention\\_and\\_control\\_guidance\\_FINAL\\_PDF\\_20082020.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/910885/COVID-19_Infection_prevention_and_control_guidance_FINAL_PDF_20082020.pdf) Accessed 2020 Sep 8.  
*See: Eye or face protection (including full-face visors) must: (p. 17)*

15. Ontario Health. Personal Protective Equipment (PPE) Use During the COVID-19 Pandemic; 2020 Aug 11.  
[https://www.ontariohealth.ca/sites/ontariohealth/files/2020-05/Ontario%20Health%20Personal%20Protective%20Equipment%20Use%20During%20the%20COVID-19%20Pandemic\\_rev10May20%20PDF\\_v2.pdf](https://www.ontariohealth.ca/sites/ontariohealth/files/2020-05/Ontario%20Health%20Personal%20Protective%20Equipment%20Use%20During%20the%20COVID-19%20Pandemic_rev10May20%20PDF_v2.pdf) Accessed 2020 Sep 8.  
 See: o) *Use 3D-printed face shields for eye protection (p. 14)*; t) *Decontaminate PPE using validated sterilization and disinfection methods (p. 14)*
16. Public Health Agency of Canada. Infection prevention and control for COVID-19: Interim guidance for outpatient and ambulatory care settings; 2020 May.  
<https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/guidance-documents/interim-guidance-outpatient-ambulatory-care-settings.html> Accessed 2020 Sep 8.  
 See: *Masking/eye protection for all staff providing or participating in patient care for duration of shifts*
17. Public Health Agency of Canada. Infection prevention and control for COVID-19: Second interim guidance for acute healthcare settings; 2020 Apr.  
<https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/health-professionals/infection-prevention-control-covid-19-second-interim-guidance.html> Accessed 2020 Sep 8.  
 See: *Personal protective equipment (PPE)*
18. World Health Organization. Rational use of personal protective equipment for coronavirus disease (COVID-19) and considerations during severe shortages Interim guidance; 2020 Apr 6.  
[https://www.who.int/publications/i/item/rational-use-of-personal-protective-equipment-for-coronavirus-disease-\(covid-19\)-and-considerations-during-severe-shortages](https://www.who.int/publications/i/item/rational-use-of-personal-protective-equipment-for-coronavirus-disease-(covid-19)-and-considerations-during-severe-shortages) Accessed 2020 Sep 8.  
 See: 2. *Ensure rationale and appropriate use of PPE (p. 3)*
19. World Health Organization. Rational use of personal protective equipment (PPE) for coronavirus disease (COVID-19). Interim guidance; 2020 Mar.  
[https://apps.who.int/iris/bitstream/handle/10665/331498/WHO-2019-nCoV-IPCPE\\_use-2020.2-eng.pdf](https://apps.who.int/iris/bitstream/handle/10665/331498/WHO-2019-nCoV-IPCPE_use-2020.2-eng.pdf) Accessed 2020 Sep 8.  
 See: *Table 1. Recommended personal PPE during the outbreak of COVID-19 outbreak, according to the setting, personnel, and type of activity (p. 3 – 5)*

## Additional Reference

20. Abramowicz JS, Basseal JM, Brezinka C, et al. ISUOG Safety Committee Position Statement on use of personal protective equipment and hazard mitigation in relation to SARS-CoV-2 for practitioners undertaking obstetric and gynecological ultrasound. *Ultrasound Obstet Gynecol.* 2020 06;55(6):886-891.  
[PubMed: PM32255535](https://pubmed.ncbi.nlm.nih.gov/32255535/)