

## The COVID-19 pandemic and face shields

### Editor

The global shortage of personal protective equipment (PPE) for healthcare workers (HCW), has resulted in their vulnerability to the transmission of coronavirus disease 2019 (COVID-19) and mortality. The current standard PPE recommendation for high risk procedures on patients with COVID-19 includes fluid repellent long gown and respirator, gloves, and a full face shield or visor<sup>1</sup>.

HCW's face is most commonly contaminated by body fluids. Face shield (FS) is a PPE that provides barrier protection to the facial area by capturing body fluid splatters, and alters the particle size distribution and magnitude of inhaled aerosols. It is composed of the visors, frame, and suspension system. The shield's length varies from mid-face to the neck, and the width should reach at least to the point of the ear to reduce the likelihood a splash going around the edge to reach the eyes. Crown and chin protection is recommended for improved infection control purposes. This will reduce the risk of possible ocular inoculation.

In surgical practice, transmission of the highly contagious SARS-CoV-2 via the conjunctival mucosa presents a real risk via blood splashes, droplets or aerosols with viable virus.

There is an overall 22.3–76.9 per cent risk of contamination from blood and body fluid splash on protective eye shields during surgery<sup>2</sup>. Traditionally surgeons have not worn eye protection

as this is thought to influence vision through the eyepiece of the microscope, discomfort, fogging, reflection and refraction of light, routine lack of availability of eye/face protection, or spectacles not fitting under protection. These may be less of a problem with FS.

Many HCW erroneously believe that prescription glasses provide adequate protection. HCW often do not detect ocular contaminations. One of the expert taskforce who visited Wuhan developed COVID-19 despite fully gowned with protective suit and N95 respirator<sup>3</sup>. His first symptom was unilateral conjunctivitis<sup>3</sup>. While van Doremalen N *et al*'s modelling reported viability of SARS-CoV-2 in aerosols<sup>4</sup>, others reported the contrary with a lack of its presence in air samples obtained from rooms of hospitalised patients with COVID-19 regarding the extent of aerosol transmission<sup>5</sup>.


Many modelling and simulation have shown importance of the face shield use in droplet precaution. While it is hard to be tested in isolation as it is part of the package of PPE used in droplet precaution, the limited reports from SARS, COVID-19 and influenza season supports its use.

J. F. Ha<sup>1,2,3</sup> 

<sup>1</sup>Department of Paediatrics Otolaryngology Head & Neck Surgery, Perth Children's Hospital, 15 Hospital Avenue, Nedlands, 6009, Western Australia, Australia,

<sup>2</sup>Murdoch ENT, Wexford Medical Center, Suite 17-18, Level 1, 3 Barry Marshall Parade, Murdoch, 6150, Western

Australia, and <sup>3</sup>Department of Surgery, University of Western Australia, Stirling Highway, Nedlands, 6009, Western Australia, Australia

 @drjenna, @PerthChildrens, @urwanews, @sjog\_healthcare),

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