

# JHH UPDATE #17: COVID-19 SITUATION

## 24.4.2020

Dear Staff,

As we go into the weekend and recognise ANZAC Day, April 25<sup>th</sup> as a day of national remembrance, this year will be different with no community commemorative services or marches. I encourage you all to join the ANZAC Day Commemorative Service live from the Australian War Memorial in Canberra which will be broadcast across all 98 stations, on the both the Triple M and Hit networks, to honor our Anzacs and thank all those who have served and continue to serve Australia in our defence forces.

As ANZAC Day falls on a Saturday this year, for those in our fair state, things will be business as normal on Monday.



### Current Situation

As we reflect on the ANZAC spirit, I also encourage you to reflect on the work of our own frontline staff who continue to provide world class care to every patient, ever time. To those who are working over the weekend, please accept my sincere thanks.

I am very pleased to report that as of today 24.4.2020, all COVID positive patients have been discharged home.

### Staff Wellbeing

The weekly draw for all health care workers at JHH to win a free SUBO at home experience continues. To enter, register using this link: <https://mailchi.mp/841a74d183d9/suboathome>.

One lucky winner per week will be selected at random to win an interactive three course meal from Subo's delicious menu.

Leanne Johnson  
General Manager  
Incident Controller

## COVID-19: How do healthcare staff protect themselves reliably during clinical care?

### *How does the COVID-19 virus (SARS-COV-2) spread from person to person?*

The evidence to date indicates that transmission is predominantly by respiratory droplets. These arise from an infected person with either transfer directly during prolonged face-to-face contact (more than 15 minutes) or transfer of the virus to one's nose, mouth or eyes by contaminated hands. This is the same transmission mode as seen with the influenza virus. Clinical and epidemiological evidence suggest that airborne transmission is rare, but some aerosol-generating procedures (AGP) may increase the risk – for instance, intubation and extubation, non-invasive ventilation and operative procedures involving the respiratory tract (see below).

### *What are the recommended approaches to prevention of healthcare staff infection?*

Please refer to this [HNE LHD poster](#) for the overview of requirements.

**Standard precautions**<sup>1</sup> protect staff caring for of patients at low COVID-19 risk, including those who may have asymptomatic COVID-19 infection.

**Additional Contact AND Droplet precautions-** required for most COVID care situations:

- long-sleeved fluid-resistant gown (does not need to be closed at the back)
- gloves donned after hand hygiene
- standard surgical mask (single use, discard when moist)
- eye protection (wrap around glasses<sup>2</sup> or visor/face shield or both)

**Additional Contact, Droplet AND Airborne precautions-** required for AGP and ICU care:

- Fit-checked P2/N95 mask (single use) replaces surgical mask
- Long-sleeved fluid-resistant gown (preferably closed at back)
- Face shield is indicated for higher risk procedures (operating theatre / procedural settings/ intubation / extubation)

### *What are some key pointers for protecting yourself?*

- Always clean your hands before touching your face
- Adhere to the 5 Moments of Hand Hygiene standard- do the training! Hand hygiene essential before and after every patient contact. Bare-below-elbows.
- Make wearing eye protection a standard practice for every clinical care occasion
- Make sure you have done the necessary PPE training
- Don't touch the front of your mask while it is worn. Discard it after a single use. Replace it when moist.
- Take particular care when removing PPE not to contaminate your eyes, nose or mouth. Ensure that you have cleaned your hands again as a last step.
- Don't wear procedural or theatre scrubs and head gear outside of those zones.
- Never leave a COVID19 zone wearing PPE. Do NOT wear a mask around the hospital corridors.
- Wear clean scrubs / uniform underneath your PPE for COVID19 patient care. At the end of your shift change, shower & put on clean clothes. Wash/dry scrubs as usual.
- Take responsibility for reducing clutter at shared ward desks and wipe these down several times daily including computer keyboards
- Ensure that you always eat and drink only in a suitable non-clinical area.

<sup>1</sup> Also see - <https://aimed.net.au/2020/03/28/why-are-standard-infection-control-precautions-the-best-bulwark-against-spread-of-covid-19-in-healthcare/>

<sup>2</sup> Staff are recommended to have their own protective glasses (prescription if required) and clean and disinfect these with large alcohol wipes after use (then clean hands).

## **What important factors in workplace transmission of SARS and COVID-19?**

As yet, there is no description of workplace acquisitions from Australia. Data from China's extensive experience indicated that many acquisitions occurred early in the outbreak. This was when patients were not triaged appropriately and there was not full compliance with hand hygiene and inadequate PPE usage occurred. Once testing increased and PPE use became standardised, HCW acquisitions fell to zero. With SARS (2002), the highest risk to staff occurred during doffing of contaminated PPE. Exposure to some AGPs was also associated with SARS acquisition. Anecdotal reports have associated COVID-19 acquisition with ENT surgery which is acknowledged internationally as a distinct risk situation.

## **Is airborne spread of COVID-19 virus a significant general concern?**

The published evidence shows that COVID-19 rarely spreads more than 1 metre away from a patient. Small particle (<5 micron) aerosols are produced by all infected patients and travel further, but the quantity of virus in these particles is 1000-fold less than that in the large droplets and they appear not to be infectious<sup>3</sup>. This is in marked contrast to measles and tuberculosis which are highly infectious over longer distances via small airborne particles.

An additional reassurance is that by the time that symptomatic patients are admitted to hospital (generally day 6 or later), their respiratory viral load is declining. After day 8, virus can only be detected by nucleic acid amplification (PCR) and viral culture are negative indicating a low infectious potential<sup>4</sup>.

## **Will a P2/N95 mask give me greater protection when caring for COVID-19 patient?**

There are two types of mask in use:

1. Surgical mask – this mask deals with larger respiratory droplets and is fluid repellent – able to withstand blood and body fluid splashes
2. P2/N95 (airborne) mask – this also traps the fine droplets provided an adequate facial seal is achieved.

There is substantial randomized trial evidence<sup>5</sup> in non-intensive care settings that shows that either type of mask provides equivalent levels of protection for staff against droplet spread of respiratory viruses similar to the COVID-19 virus.

## **What are the high risk AGPs that require high level airborne precautions?**

The main danger from AGP is exposure to excess quantities of respiratory aerosols (droplets) large and small, causing hazards to operators and perhaps other people within the room. Anaesthetic and procedural/surgical high risk AGPs are defined by a recent Australian Health Protection Principal Committee-endorsed statement from the Australian and New Zealand College of Anaesthetists (9/4/20)<sup>6</sup>.

<sup>3</sup> This [recent publication](#) is an example of several recorded instances where a high theoretical risk of airborne (distant) spread caused by AGPs (in this case, difficult intubation, ventilation and non-invasive ventilation in an ICU over 3 days, intubation did not cause infection in 41 exposed healthcare staff 85% of whom were only protected by surgical masks & eye protection. There is also anecdotal evidence of a similar exposure event in an HNELHD ICU where again no secondary spread occurred.

<sup>4</sup> [Wolfel-R et al 2020](#). Virological assessment of hospitalized cases of COVID-19.

<sup>5</sup> [Bartoszko-J et al 2020](#). Medical Masks vs N95 Respirators for Preventing COVID-19 in Health Care Workers: A Systematic Review and Meta-Analysis of Randomized Trials.

<sup>6</sup> [ANZCA statement on the use of PPE during the SARS-CoV-2 pandemic \(9 April\)](#)

## **What is fit checking?**

Fit checking is a process used for all P2/N95 masks at the time of donning, regardless of whether or not fit testing has been conducted (see next section). It ensures that the mask fits the user's face snugly (i.e. creates a seal) to minimise the number of fine particles that bypass the filter through gaps between the user's skin and the mask seal. Fit checking at time of use is the most reliable method of ensuring the health worker has achieved the required seal at every occasion of use. An experienced trainer should instruct the user in the correct method for donning and fit checking. This has been shown to significantly improve the fit of the mask (as shown by fit testing)<sup>7</sup>.

## **What is fit testing?**

A fit test is a validated method of matching a respirator to an individual. It is defined under the Australian/New Zealand Standard 1715 2009. Fit testing determines whether a specific type, model and size of mask provides an adequate facial seal that prevents fine particle aerosol entry. During the procedure, the operator provides valuable training on mask donning during the procedure. HNELHD uses a quantitative fit test that requires an instrument that numerically measures the 'fit factor', determined by the ratio of ambient (generated) salt particles detected on either side of the mask. It enables a dynamic demonstration of mask fit after donning and with a range of activities (speaking, head movement and deep breathing). Fit testing takes about 30 minutes per staff member and is conducted by an experienced hygienist.

## **Which healthcare staff are recommended for P2/N95 mask fit testing?**

Staff members (medical and nursing staff) who are at highest risk (i.e. they are intubating and extubating COVID-19 positive patients or assisting with same or are performing other high risk surgical AGPs) are currently offered fit testing.

## **What should I do if the P2/N95 mask is causing me discomfort?**

It may be that a different mask will fit better - try an alternative but do not stick tape over the bridge of your nose. If your work definitively requires airborne protection and your skin integrity has been compromised, then you should either adopt an alternative protective method or arrange with your manager to be allocated to a non COVID duty to allow the pressure areas to heal. Note that when moulding the mask during donning, there is a useful technique of performing the initial moulding step around one finger. This then reduces the pressure on the nasal bridge required during initial moulding. It is recommended to get instruction from an experienced nurse educator or your local infection prevention and control professional.

## **What is a "dry airborne" P2/N95 mask?**

This is a round, white mask with yellow elastic (3M 8210). It is suitable for airborne and droplet protection but is much less fluid repellent than other models. During procedures where blood or fluid splashes may occur, a visor is required as an additional barrier to protect the integrity of the mask.

## **Is hospital ventilation a concern due either to recirculation of air or positive pressure within rooms where COVID-19 patients are managed?**

Therapies that increase aerosol production (non-invasive ventilation, intubation, extubation, high flow oxygen therapy and others) must be conducted in single rooms with the door kept closed. Where possible, a single room with negative pressure to the outside is chosen. To date, in rooms with positive pressure flows, no increased risk of COVID19 transmission into the area outside the room has been demonstrated. This indicates that physical containment behind a closed door may be sufficient.

<sup>7</sup> [Or-P et al, 2012](#). Does Training in Performing a Fit Check Enhance N95 Respirator Efficacy?