

27 March 2020

Dear Colleagues,

Infection prevention and control during healthcare when COVID-19 is suspected

The Northern Region DHBs are following the best available evidence on infection control and prevention (IPC) strategies to prevent or limit transmission of COVID-19 in healthcare settings. These are aligned with World Health Organization guidelines.

For your safety and the safety of your patients and colleagues please ensure you are familiar with and implement the following strategies:

1. **Ensure triage, early recognition, and source control (isolating patients with suspected COVID-19).** Hand hygiene and respiratory hygiene (patients and staff using appropriate cough and sneeze etiquette and medical masks for patients when appropriate) are essential preventative measures.
2. **Apply standard precautions for all patients;** including hand hygiene, respiratory hygiene, using physical distancing where practicable, environmental cleaning and disinfection, and appropriate use of personal protective equipment (PPE);
3. **Implement patient management systems to reduce droplet and contact exposure when managing suspected cases of COVID-19** (e.g. COVID-19 positive patient pathways, reducing patient movements, and managing equipment use).
4. **Use environmental and engineering controls when possible;** including use of single rooms, maintaining separation of at least 1 metre between all patients, and ensuring adequate ventilation.
5. **Implement staff supports;** including appropriate training of healthcare workers, surveillance, and adequate patient-to-staff ratios.

The correct and appropriate use of PPE is an essential part of reducing the spread of pathogens however incorrect use increases the risk of exposure.

The following guidance has been endorsed by the Northland, Waitematā, Auckland and Counties Manukau DHBs as the **Best Use of Personal Protective Equipment** at this stage of the COVID-19 pandemic. It will be regularly reviewed and updated.

This sits alongside a new process for the distribution of PPE that will ensure we have the right equipment in the right place at the right time to support our people, so they can safely care for patients.



Please ensure you and your teams are familiar with this guidance, and have been trained in the correct use of all the strategies above, including PPE. If you have questions, talk to your clinical leader or Infection Control and Prevention team.

Kind Regards,

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Best Use of Personal Protective Equipment

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Abbreviations

ABHR	-	alcohol-based hand rubs
AGP	-	Aerosol Generating Procedures
COVID-19		Infection caused by SARS-CoV-2 virus
IPC	-	Infection Prevention and Control
OSHA	-	US Occupational Safety and Health Administration
PPE	-	Personal Protective Equipment
TAG	-	Technical Advisory Group

1. Rationale

This guideline is in place to support all services to make the best use of Personal Protective Equipment (PPE). It seeks to make recommendations on best use of PPE, in the context of the COVID-19 pandemic and in a variety of situations. PPE as defined by the US Occupational Safety and Health Administration (OSHA) is “specialized clothing or equipment, worn by an employee for protection against infectious materials.”

Use of Personal Protective Equipment (PPE) is vital to clinical care as a part of wider Infection Prevention and Control (IPC) strategies. PPE is required for COVID-19 patients. It is also used in other situations where it is indicated for protection from specific infectious disease agents and/or for standard precautions against blood or body fluid exposure. It is important that PPE is used only to the extent required by the clinical and care-giving situation, which will ensure continued adequate supplies of appropriate PPE are available.

This guidance draws on international guidance on the use of PPE in the COVID-19 pandemic, and on the use of PPE in situations of high PPE demand.

2. Principles of Infection Prevention and Control

Infection Prevention and Control (IPC) strategies to prevent or limit transmission in healthcare settings include:

- Ensuring triage, early recognition and source control,
- Applying standard precautions for all patients,
- Implementing transmission-based precautions when dealing with suspected infectious cases,
- Implementing administrative controls,
- Using environmental and engineering controls.

PPE plays an important part in IPC as a technical enabler for transmission-based precautions. Which IPC measures to implement are decided by risk assessment in situ, although we recognise this can only be undertaken with the information to hand at the time.

3. Infection Prevention and Control and PPE use for priority staff

PPE should be prioritised for those health professionals providing direct patient care, including frontline staff (primary and secondary care) and emergency services.

The PPE required for health professionals providing direct patient care are:

- long sleeve fluid resistant gown,
- surgical masks,
- eye protection, and
- gloves.

The elements of PPE required for specific situations are described in the table starting on page 6. Requirements for PPE vary according to the task, the nature of the infection and the risk of exposure. People who do not have symptoms consistent with COVID-19 (fever, cough, shortness of breath, sore throat) are very unlikely to be transmitting COVID-19 and the advice therefore focuses on contact with those who are symptomatic and/or suspected or proven to have COVID-19.

4. Appropriate PPE use and effective IPC management

Incorrect use of all elements of PPE, including masks, increases the risk of exposure. We need to support anyone using PPE to use it correctly and safely, and at the same time address wider IPC strategies to reduce risk:

1. Patient care should be planned to minimise the number of health professionals exposed:
 - a. this includes ensuring that only essential health professionals enter the patient area. Medical records and shared patient equipment should not be taken into the patient area.
2. Donning and doffing of PPE requires training.
3. Signage to support donning and doffing should be easily visible at the point of entry to rooms and where possible it should be supervised.
4. Particulate Respirators (N95/P2) are only needed for aerosol generating procedures (AGP).
 - a. AGP, such as the use of nebulisers, should be avoided as this has been associated with cross transmission of viruses in healthcare settings.
5. Clean hands save lives by minimising the transmission of infectious material between health professionals, patients and the environment.
 - a. The use of alcohol-based hand rubs (ABHR) is the most effective and efficient means of decontaminating hands which are not visibly soiled.
 - b. Rooms with COVID-19 patients are prioritised for ABHR use.
 - c. If there ABHR is not available then health professionals will need to wash their hands with soap and water and dry thoroughly.
 - d. Alternative hand sanitiser products may be used provided that the product has been demonstrated to have activity against enveloped viruses.
6. All staff providing direct patient care are required to wear closed -in shoes.
 - a. Shoe covers are not required to be worn.
7. Social/physical distancing should be supported;
 - a. Maintain at least 1-meter distance during interactions with patients and other healthcare professionals.

8. In DHB hospital settings, IPC equipment (PPE, ABHR) should be centralised in secure areas within the wards.
9. Usage of PPE and ABHR should be monitored where possible.
 - a. This requires an initial stocktake followed by regular audits of usage.
 - b. This may be done centrally reviewing on-line ordering data.

5. Employer Obligations

Employers must:

- Provide PPE appropriate for the exposure risk for employees
- Ensure that PPE is disposed of safely and that reusable PPE is cleaned, laundered, repaired and stored after use

6. PPE Selection

Factors influencing PPE selection

- Type of exposure anticipated
 - Splash/spray versus touch
 - Category of transmission-based isolation precaution
- Durability and appropriateness for the task
 - Gown vs apron
 - Fluid resistant or not

7. PPE Types and area of protection

- Gloves
 - Protects hands
 - Single use gloves for patient care
 - Change during use if torn or heavily soiled
 - Change after use on each patient
 - Reusable heavy-duty gloves can be used when cleaning the environment
- Gowns
 - Protect skin and clothing
 - Isolation gown should be fluid resistant if contamination of clothing following contact with blood, body fluids and secretions or excretions is anticipated.
 - Aprons can be used when limited contamination of clothing is anticipated
 - Gowns made of reusable cotton or a spun synthetic material can be laundered and reused. If not fluid resistant, then a plastic apron can be worn under the gown.¹
- Face protection

A combination of PPE can be used to protect all or part of the face.

 - Masks
 - Protect nose and mouth
 - Goggles or safety glasses
 - Protect eyes
 - Face shield
 - Protects face, nose, mouth and eyes

¹ When wearing a non-fluid resistant gown, a plastic apron it should be worn under it. If splashes or spills occur the gown will absorb the fluid and the plastic apron will prevent the fluid from coming in contact with the individuals clothing. If the apron was worn on top of the gown then the fluid could run off the apron, be absorbed by the gown and contaminate the individuals clothing underneath.

- When skin protection, in addition to nose, mouth and eye protection is needed, a face shield can be used as a substitute to wearing mask and goggles
- Respiratory protection
 - To protect from inhalation of infectious aerosols
 - Droplets > 5 microns (μ)
 - Droplet nuclei <5 μ

Whilst it is important to wear the correct PPE, it is equally important to don and doff PPE safely, and to perform hand hygiene to minimise the risk of self-contamination prior to donning, and during doffing of PPE.

8. PPE Use Recommendations – see table on following page

Based on international guidance, including:

- WHO: Infection prevention and control during health care when COVID-19 is suspected. Interim guidance 19 March 2020
- WHO: Advice on the use of masks in the community, during home care, and in health care settings in the context of COVID-19. Interim guidance 19 March 2020
- WHO: Rational use of personal protective equipment for coronavirus disease 2019 (COVID-19). Interim guidance 27 Feb 2020;
- UK: COVID-19 Guidance for infection prevention and control in healthcare settings. Adapted from Pandemic Influenza: Guidance for Infection prevention and control in healthcare settings 2020. Issued jointly by the Dept of Health and Social Care (DHSC), Public Health Wales (PHW), Public Health Agency (PHA) Northern Ireland, Health Protection Scotland (HPS) and Public Health England as official guidance;
- ADHB: COVID-19 (Coronavirus disease 2019): guide to early identification, infection prevention, and management. ADHB Clinical TAG. V13 16 March 2020

PPE USE RECOMMENDATIONS

IMPORTANT REMINDER: For all patient care staff should follow standard precautions.

PPE TYPE	TRIAGE	FRONTLINE HEALTH STAFF – Symptomatic/suspected COVID patient/SARI/proven COVID-19 ¹ – BAU body fluid exposure				PATIENTS	VISITORS	CARERS (e.g. in paediatric settings)	CLEANERS
	Health and non-health care (incl security guards)	Community ambulatory – Primary Care, A&M, EMS, home care/visiting services (unless AGP)	Community residential care - ARC, disability, hospice	DHB HOSPITALS		(Suspected/confirmed –symptomatic patients/ SARI/ proven COVID)	(Suspected/confirmed –symptomatic patients/ SARI/ proven COVID)	(Suspected/confirmed –symptomatic patients/ SARI/ proven COVID)	Current COVID positive case in room or after exit from rooms – hospital/hotel ⁴
				General care (all members of the health care team) ²	Aerosol generating procedures (AGP) ³				
SURGICAL MASKS	Yes ⁵	Yes	Yes	Yes	No	Yes, whilst waiting assessment and on transfer, not once in a room in isolation ⁶	Yes ⁷	No	Only if patient in the room
N95/P2 PARTICULATE RESPIRATORS	No	No	No	No	Yes	No	No	No	No
GOWNS/ APRONS	No	EMS and Ambulance Nonpatient contact: No gown Direct patient contact: ⁸ fluid-resistant long sleeve gown	Refer to MoH guidance for PPE usage in ARC. This is also appropriate advice for disability sector and hospice	Direct patient contact: fluid-resistant long sleeve gown Nonpatient contact: plastic apron	Fluid-resistant long sleeve gown	No	No ⁹	No	Nonpatient contact: plastic apron
GLOVES	No	Yes Single use	Yes Single use	Yes Single use	Yes Single use	No	No	No	Yes Single use or reusable heavy-duty gloves
EYE PROTECTION: DISPOSABLE OR REUSABLE – USE REUSABLE WHENEVER AVAILABLE¹⁰	No	Yes	Yes	Yes	Yes (Goggles or face shield where available)	No	No	No	Yes if patient is in the room
HAND HYGIENE	Adhere to the '5 moments for hand hygiene'								
OTHER ISSUES	Social (physical) distancing ¹¹						Social (physical) distancing	Carer to minimise the time spent in the hospital outside of the patient's room.	

1 Criteria will vary. Refer to current Ministry of Health case definition.

2 Minimise number of people in the room or transfer team.

3 Aerosol generating procedures include: tracheal intubation, non-invasive ventilation, tracheostomy, cardiopulmonary resuscitation, manual ventilation before intubation, bronchoscopy (and BAL), sputum induction, suctioning (except with in line ventilator attachment) and administration of high flow nasal oxygen.

4 Specific advice for primary care has already been developed on cleaning rooms between patients where COVID-19 is suspected.

5 Individual providers may have systems/facilities that mean this is not necessary e.g. maintaining greater than 1 metre distance or impermeable partitions.

6 Children may not tolerate wearing a mask.

7 It is important that visitors are made aware of the need to dispose of the mask safely and to preform hand hygiene when leaving the room.

8 Ambulance and Emergency Services health professionals may choose to wear a hazmat suit for ease of use in community settings and during transportation.

9 Visitors are not providing direct patient cares, nor do they provide care for other patients. For this reason, whilst in the room they need protection from droplets only. Guidance should be provided about safe laundering of clothing and hand hygiene when removing mask and exiting the room.

10 There needs to be a process in place to ensure reusable eye protection can be cleaned safely prior to reuse. Prescription glasses are not considered to be eye protection.

11 Maintaining greater than 1 metre distance between patient and staff member.

