CLINICAL GUIDELINE
Coronavirus Disease (COVID-19) in the Paediatric Patients Admitted to the Children's Ward

Western Health

COVID - 19

Be Safe -- Be Smart -- Be Kind

VERSION 2: LAST UPDATED 01/10/2020

Contents

1. Definitions and Abbreviations

1.1 Definitions

For purposes of this procedure, unless otherwise stated, the following definitions shall apply:

Aerosol-Generating Procedures	Inclusive of: Non-invasive ventilation, suctioning, nebulisation therapy, cardiopulmonary resuscitation, manual ventilation before intubation, intubation.
Casual Contact	**LESS than 15 minutes** face-to-face and/or **Less than two hours** in a closed room with a person who is a confirmed case, in the 24 hours before they showed symptoms or while symptomatic where PPE was not used.
Child/Children	A child aged from 28 days of life if born ≥ 37 weeks gestation to 17 years and under.
Close Contact	Face to face contact in any setting with a confirmed or probable case, for **15 minutes or more cumulative over the course of the week**, in the period extending from 48 hours before the onset of symptoms in a confirmed or probable case. or **Two hours or more** sharing of a closed space with a confirmed or probable case in the period extending from 48 hours before the onset of symptoms in a confirmed or probable case.
Confirmed Cases	Positive SARS-CoV2/COVID-19 PCR
Parent/Caregiver	An adult in a significant primary caring role, including biological, adoptive, foster or step-parents and legal guardians.
Personal Protective Equipment	Clothing or equipment designed to be worn by someone to protect them from the risk of injury or illness.
Upper Airway Swabs	Oropharyngeal and deep nasal swab for coronavirus (COVID-19) and respiratory virus panel testing.

1.2 Abbreviations

For purposes of this procedure, unless otherwise stated, the following abbreviations shall apply:

AGP	Aerosol Generating Procedures
ARDS	Acute Respiratory Distress Syndrome
COVID-19	Coronavirus Disease 2019
CW	Children's Ward
CXR	Chest X-ray
DHHS	Department of Health and Human Services
ED	Emergency Department
EMR	Electronic Medical Record

GP	General Practitioner
HFNP	High Flow nasal Prongs
ID	Infectious Disease
NIC	Nurse in Charge
PPE	Personal Protective Equipment
QRG	Quick Reference Guide
RAC	Respiratory Assessment Clinic
WH	Western Health

2. References

1. British Paediatric Respiratory Society (2020). Guidance for the clinical management of children admitted to hospital with COVID-19 (Version 2). Cited 3 April, 2020. Retrieved from: http://patchsa.org/wp-content/uploads/2020/03/Guidance-for-the-clinical-management-of-children-admitted-to-hospital-with-suspected-COVID-19.pdf

2. Department of Health and Human Services (2020). Coronavirus Diseases 2019 (COVID-19) Infection Prevention and Control Guideline, Version 4.1 [updated 10 September, 2020]. Cited 18 September, 2020. Retrieved from: https://www.dhhs.vic.gov.au/coronavirus-covid-19-infection-control-guidelines-version-2-21-june-2020

3. Department of Health and Human Services (2020). Guidance for involvement of parents caring for a child in hospital during the coronavirus (COVID-19) pandemic [updated 23 June, 2020]. Cited 25 September, 2020. Retrieved from: https://www.dhhs.vic.gov.au/factsheet-parents-caring-child-hospital-during-coronavirus-covid-19-pandemic

4. Department of Health and Human Services (2020). Guidance for Respiratory support for children during the COVID-19 emergency [updated 23 September, 2020]. Cited 25 September, 2020. Retrieved from: https://www.dhhs.vic.gov.au/covid-19-guidance-respiratory-support-children

5. National Health Scheme, England (2020). Clinical guide for the management of paediatric patients during the coronavirus pandemic (Version 1). Cited on 3 April, 2020. Retrieved from: https://webcache.googleusercontent.com/search?q=cache:W_0CXp2PeTMJ:https://www.networks.nhs.uk/nhs-networks/eastern-paediatric-epilepsy-network/documents/covid-19/clinical-guide-for-the-management-of-paediatric-patients-during-the-coronavirus-pandemic/view+&cd=3&hl=en&ct=clnk&gl=au

6. Queensland Health (2020). Health Alerts: Coronavirus (COVID-19). [updated 16 March, 2020]. Cited on 20 April, 2020. Retrieved from: https://www.health.qld.gov.au/news-events/news/novel-coronavirus-covid-19-how-it-spreads-transmission-infection-prevention-protection

7. The Royal Children's Hospital, Melbourne, Australia (2020). Clinical Practice Guideline on COVID-19 [updated April, 2020]. Cited on 14 September, 2020. Retrieved from: https://www.rch.org.au/clinicalguide/guideline_index/COVID-19/

8. The Royal Children's Hospital, Melbourne, Australia (2020). Clinical Practice Guideline on COVID-19 swabbing [updated June, 2020]. Cited on 25 September, 2020. Retrieved from: https://www.rch.org.au/clinicalguide/guideline_index/COVID-19_swabbing/

9. Royal College of Paediatrics and Child Health (2020). COVID-19 guidance for paediatric services [updated 24 March, 2020]. Cited on 2 April, 2020. Retrieved from: https://www.rcpch.ac.uk/resources/covid-19-guidance-paediatric-services

10. Wei, M., Yuan, J., Liu, Y., Fu, T., Yu, X., & Zhang, Z. J. (2020). Novel coronavirus infection in hospitalized infants under 1 year of age in China. *Jama*.

11. World Health Organization (2020). Q&A on coronaviruses (COVID-19). [updated 8 April, 2020]. Retrieved from: https://www.who.int/news-room/q-a-detail/q-a-coronaviruses

3. Overview

Note: The advice in this document may change frequently, even daily as new evidence becomes available. Please be aware and stay up to date with other channels of communication from Western Health via the live site and/or email which may supersede the advice in this document.

This procedure outlines the admission and management guidelines for children with suspected or confirmed COVID-19 on the Children's Ward (CW) at Western Health.

3.1 Background

Coronaviruses are a large family of viruses that cause respiratory infections, including the common cold and more severe diseases such as Severe Acute Respiratory Syndrome (SARS). COVID-19 is the disease caused by the most recently discovered new strain of the coronavirus; novel coronavirus (SARS-CoV-2).

The clinical presentation of COVID-19 in children may be:

- Upper respiratory tract diagnoses such as: common cold symptoms
- Lower respiratory tract diagnoses such as: bronchiolitis and pneumonia
- Gastrointestinal symptoms: diarrhoea and/or vomiting
- Systemic: inflammatory disease similar to Kawasaki's Disease, or fever of unknown origin
- Rare: conjunctivitis

Worldwide experience to date suggests that children are less commonly affected than the general population. Data is limited but special consideration should be given to children with pre-existing medical illness and who are immunocompromised who could be infected with SARS-CoV-2, until the evidence base provides clearer information.

3.2 Incubation Period

The time from exposure to developing first signs and symptoms may be up to 14 days.

3.3 Mode of Transmission

Human to human transmission occurs through contamination of mucous membranes by infectious droplets. Infectious droplets may be transmitted through coughing, sneezing and talking, or through contact with an infected surface, usually via hands. Therefore, transmission of the SARS-CoV-2 virus can occur by direct contact with infected people and indirect contract with surfaces in the immediate environment this includes equipment used on the infected person.

There is limited information on the transmission of the virus through breast milk. Based on this, breast milk feeding should be supported in infants to mothers with suspected or confirmed COVID-19, while applying necessary precautions for infection prevention.

4. Procedure Detail

Coronavirus (COVID-19) resources for the general public and health professionals (including translated resources) are available on the Australian Government, Department of Health website: Coronavirus (COVID-19) resources.

4.1 Admission to the Children's Ward

All children presenting to the Sunshine Hospital (SH) Emergency Department (ED) with fever OR respiratory symptoms must be treated as **suspected cases** of COVID-19 as per the definition criteria by the DHHS: Health services and general practice - coronavirus disease (COVID-19).

All children with suspected or confirmed COVID-19 should be managed at the SH, however, not all children will require hospital admission.

The following principles must apply for children requiring admission with suspected or confirmed COVID-19:

- Children must be admitted under the treating unit and children admitted under a specialty surgery unit should be referred to the Paediatric Medicine Unit for engagement in care delivery.
- Diagnostic testing for SARS-CoV2/COVID-19 PCR must be attended as per the recommendations outlined in the case definition criteria by the DHHS or following discussion with the Consultant Paediatrician. This should preferably be completed in the SH ED prior to transfer to the CW.
  Note: Do NOT perform upper airway swabs if the child has signs of upper airway obstruction until it is deemed safe to do so by a Consultant Paediatrician.
- Coronavirus Serology (for storage) is not to be collected in suspected children; unless indicated for approved research, or if blood tests are being collected for another clinical reason.
- Patients over the age of two years must wear a surgical mask for transfer from the SH ED to the CW and other subsequent transfer if tolerated and not at risk of obstructing the airway; and the child must be continuously supervised when wearing a face mask.
  Note: Children two years old and under should never wear a face mask. Surgical mask present a risk of airway obstruction or strangulation in young children.
- Parents/caregivers must wear a surgical mask for transfer from the SH ED to the CW and any subsequent transfer.
- Children must be isolated and cared for in a single room, see Section 4.1.3
- Parents/caregivers planning to stay with their child during the hospital admission must be screened as outlined in the Visitation-Screening QRG prior to the child and parent being transferred to the CW from the SH ED, preferably by the Clinical Support and Retrieval Nurse (CSRN).

    - In the instance where parents/caregiver need to alternate staying with the admitted child; the parent returning to stay on the CW must be screened every time they represent.
    - Monday to Sunday between 8.00am – 8.00pm this will be conducted at the screening desks in the Joan Kirner Women's and Children's (JKWC) foyer.
    - Monday to Sunday between 8.00pm – 8.00am, CW nursing staff will need to complete this screening as outlined in the Visitation-Screening QRG, preferably via phone consultation prior to the parent/caregiver arriving to the CW.
    - This information needs to be conveyed to the parent/caregiver on admission.
    - In the event the parent/caregiver has been screened as 'suspected'; these parents/caregivers must be advised to attend to their local GP or the Respiratory Assessment Clinic (RAC) at SH.

    NOTE: For parents/caregiver that are symptomatic; screened as 'suspected' or are confirmed COVID-19 positive, it is preferable for another parent/caregiver who is well to remain with the child whilst in hospital. If no other parent/caregiver is available, the symptomatic parent/caregiver may be granted an exemption to remain and care for their child as per the Western Health Visitation Factsheet COVID-19.

When a child with confirmed COVID-19 is admitted to the CW the NIC should be informed immediately. Notification to the Operations Manager, Head of Unit-Paediatric Services, Divisional Director and Clinical Services Director will occur through the normal communication channels. After hours, this should be communicated to the Director on call via the After Hours Administrator.

NOTE: Ensure an infectious risk alert has recorded in the EMR and if not yet completed, enter immediately.

4.1.2 Room Allocation

- Immediately isolate children with confirmed, OR suspected COVID-19 in a single room with the doors closed.

- If the child requires or is expected to require AGP; including High Flow Nasal Prong oxygen, regular suction and/or nebulised medication then allocate the child to a negative pressure isolation room if available.*
- Children with confirmed COVID-19 can be cohorted together when single rooms are exhausted – refer to current CW Floor Plan displayed in the CW Meeting Room 6.39.
- Place in contact and droplet transmission based precautions or airborne precautions if AGP are undertaken.
- All patients that have screened negative will be admitted to the allocated beds highlighted in green on the CW Floor Plan as displayed in the CW Meeting Room 6.39

* Negative pressure isolation rooms should still be prioritised to patients with suspected or proven infectious diseases with potential airborne spread as per the WH QRG Patient Infection Prevention Management. If these are occupied, then single rooms allocated and used with the door closed.

4.1.2 Preparation of the Room

- Ensure appropriate Infectious Disease ALERT signage is placed on the door.
- Place a COVID-19 Negative Pressure or Single Room Log Sheet recording sheet at the entrance to the room. All staff and visitors who enter the room must print their details on the recording sheet for contact tracing purposes.
- Ensure adequate supply of hand rub and disinfectant wipes.
- Remove all non-essential items from the room.
- Allocate non-critical equipment to the room – stethoscope, thermometer, sphygmomanometer.

4.1.3 Isolation Plans for the Child and Parent/Caregiver

A fundamental children's right in health is to be supported by their parent/caregiver. Parents/caregivers have an imperative role in providing direct physical and emotional care to their unwell child and there is a need to minimise any psychological harm arising from separating children from their parent/caregiver during their hospital stay.

TWO parents/caregivers are permitted to stay with their child and ONE parent/caregiver can stay overnight for the duration of the child hospital admission on the CW.

No caregivers under 16 years of age are permitted, unless they are the parent of the admitted child.

Table 1: Isolation plans for single parents/caregivers and child who require admission to the CW meeting COVID-19 case definition criteria whilst awaiting virology results.

Child	Parent	Isolation Management Plan
Unwell, symptomatic	Well	Child in single room, parent with child.
Unwell, symptomatic	Unwell, symptomatic	Child in single room. Parent: ○ Should not attend CW if possible. ➢ Home isolation or adult ward. ➢ Should allocate alternate carer who is well to stay with the child if parents are unable. ○ If no other parent/caregiver is available, the symptomatic parent/caregiver may be granted an exemption to remain and care for their child as per the Western Health Visitation Factsheet COVID-19.

- Parents/caregivers must remain in the room with the door closed in isolation with their child.
- Limit parents/caregivers from leaving the room if their child has suspected and confirmed COVID-19.
- If the parents/caregivers need to leave the room, they MUST wear a surgical mask.

- All meals will be provided by the hospital's kitchen services to parents/caregivers who are in isolation with their child.

4.2 Clinical Inpatient Management of Children with Suspected or Confirmed COVID-19

Medical literature suggests that the vast majority of children will have self-limiting illness without complications. Reassure children and parents/caregivers that most children will have much milder illness than is seen in adults. Observations, monitoring and supportive therapy is the best strategy for treatment of COVID-19 in children.

Personal Protective Equipment (PPE) can look alarming to children, and it is important that parents and healthcare professionals proactively discuss the need for such measures, and reassure children.

4.2.1 Clinical Management

It is imperative that children continue to receive timely and effective respiratory support. Outcomes of children requiring respiratory support are excellent overall and must not be compromised.

Clinical management of children with suspected or confirmed COVID-19 should be as per the acute respiratory illnesses they require admission for and clinicians should be guided by patient's signs and symptoms.

Adhere to the Clinical Practice Guidelines - The Royal Children's Hospital where applicable.

In practice, all levels of respiratory support, including high-flow oxygen, high-flow nasal prongs therapy and non-invasive ventilation (NIV), remain indicated. Adhere to the recommendations made for respiratory support in children with suspected or confirmed to have COVID-19 in the DHHS Guidance for Respiratory support for children during the COVID-19 emergency.

4.2.1.1 General Principles

- Respiratory support therapies must remain available to children to ensure continued good health outcomes.
- Children must continue to receive timely and effective respiratory support and must not be compromised by undue changes in practice or restrictions on resources.
- There is usually no indication for blood tests or chest X-rays.
- Patient regular medication should be continued.
- There is no evidence that antibiotics improve patient outcomes; they should be used appropriately for suspected bacterial infection.
- There is no evidence that steroids improve patient outcomes; they should be used appropriately for co-morbidities such as asthma and croup.
- If invasive rehydration is required; nasogastric rehydration is preferred over intravenous rehydration.
- Fluid restriction may be indicated in moderate to severe respiratory distress (to two-thirds maintenance) to minimise the risk of ARDS.
- Airborne precautions; full PPE and N95 mask must be worn by staff for all AGP such as: HFNP oxygen, suction, nebulisation therapy, bag and mask ventilation, intubation or other ventilation support.
- Chest physiotherapy is not to be performed; including for patients with chronic lung disease.
- PPE equipment is to be worn by staff as per the Western Health COVID-19 PPE Guideline.

4.2.1.2 Patient and Parent/Caregiver Use of Personal Protective Equipment

Adhere to the recommendations made for patient use of PPE in children with suspected or confirmed to have COVID-19 in the DHHS Coronavirus (COVID-19) Infection control guidelines Version 4.1.

Children 0-2 years of age

Children two years old and under should NEVER wear a surgical face mask/covering due to choking and strangulation risks**.**

Children 3-17 years of age

Children three to seventeen years of age only need to wear a surgical face mask if they are suspected or confirmed COVID-19 if this can be tolerated, when they are:

- Unable to be located in a single room in the CW.
- Anytime they are outside of their room e.g. transfer from one clinical area to another.

Note: If confirmed case are in a shared room together, they do NOT need to wear a face mask.

Parent/Caregiver

Parents/caregivers must remain in the child's room with the door closed in isolation with their child at all times during the child's admission on the CW.

All parents/caregivers of children with suspected or confirmed COVID-19 **MUST** wear a surgical mask at all times if:

- The child is unable to be located in a single room in the CW.
- They need to leave their child's room at any time.

4.2.1.3 Standard Oxygen Therapy

- Avoid unnecessary use at all times if possible.
- Administer as indicated.
- Use lowest flow necessary to achieve specified oxygen saturation target.
- Patients must be cared for in a single room with the door closed if available.

4.2.1.4 High Flow Nasal Oxygen/Air Therapy

- HFNP must be avoided at all times if possible.
- It should be provided as indicated and only be considered as rescue therapy for ongoing hypoxia despite attempts of treatment with face mask, nasal prongs or non-rebreather mask oxygenation options.
- When considering HFNP oxygen, the on-call consultant paediatrician must be consulted prior to commencement.
- The need to continue HFNP oxygen must be reviewed by a paediatric registrar in consultation with the on-call consultant paediatrician within 1-2 hours of initiation.
- The need to continue HFNP oxygen must be reviewed by the paediatric registrar and documented in the EMR every 6 hours
- Patients must be cared for in a negative pressure or single room with the door closed.
- Strict contact and airborne precautions must be adhered to by clinical staff for the duration of treatment, inclusive of the use of an N95 mask.
- Place a surgical mask on the patient if tolerated and not at risk of obstructing the airway and the child is continuously supervised (risk of airway obstruction or strangulation in young children)

4.2.1.5 Nebulised Treatment

- Nebulised treatment is considered significantly aerosol-generating.
- Nebulised treatment should be avoided at all times if possible.
- **Nebulised adrenaline for the treatment of severe croup is lifesaving and should be used as clinically indicated.**
- Preferably, the consultant paediatrician should be consulted prior to the administration of nebulised adrenaline, however, treatment should not be delayed to obtain this consultation if the child's condition is severe.
- When used, the patient should be cared for in a negative pressure or single room with the door closed.
- Strict contact and airborne precautions must be adhered to by clinical staff for the duration of treatment, inclusive of the use of an N95 mask.
- Place a surgical mask on the patient if tolerated and not at risk of obstructing the airway and the child is continuously supervised (risk of airway obstruction or strangulation in young children)
- Other nebulised treatment must be avoided if possible, including for children with chronic lung disease.

NOTE: For the treatment of moderate to severe asthma, avoid nebulised salbutamol if possible and consider alternative treatment such as more frequent or higher dose Meter Dose Inhaler treatment via spacer and /or mask or more prompt escalation to intravenous therapies.

4.2.1.6 Other Respiratory Interventions

For the management of other respiratory support therapies such as CPAP, BiPAP, mechanical ventilation and care of a tracheostomy in children with suspected or confirmed COVID-19; adhere to the recommendations outlined in the DHHS Respiratory support for children during the COVID-19 emergency.

4.2.1.7 Chest X-rays

Chest X-ray is not routinely recommended in children with suspected COVID-19 and should only be performed if there is a specific clinical question to support patient management. When required, this should be undertaken as a portable CXR in the patient's room using PPE.

4.3.2 Children who Develop New Symptoms during Admission

As the estimated incubation period is up to 14 days, staff must be aware of the possibility that an infected child may be present asymptomatically, developing COVID-19 symptoms later during their hospital admission.

In the event of new onset respiratory symptoms or unexplained fever and without epidemiological criteria:

- Immediately transfer the child to a single room.
- If the child meets diagnostic testing criteria as per the Health services and general practice - coronavirus disease (COVID-19), medical and/or nursing staff should perform SARS-CoV2/COVID-19 PCR testing in the CW.
- Full PPE must be worn by the clinician performing the testing.
- Adhere to the WH QRG: How to collect Nose and Throat swabs for COVID-19 PCR when obtaining the specimen.

If the child is symptomatic and does not meet the diagnostic testing criteria, refer to consultant paediatrician for further advice.

4.3 Release from Isolation

As per the WH Patient Management - De-isolation Guideline.

*A lower respiratory tract specimen (sputum) may not be possible in children.

*A chest X-ray should not be obtained in children purely for the purposes of categorising a child into low risk or high risk suspected COVID-19.

4.4 Children's Ward Visitor Guidelines

The following principles apply for visitors in the CW during the COVID-19 pandemic:

- TWO parents/caregivers are permitted to stay with their child on the ward at any one time.
- Only ONE parent/caregiver is permitted to stay with their child overnight.
- Parents/caregivers admitted with their child must stay in the child's room with the doors closed at all times until discharge or confirmed negative screening test. Food will be provided by kitchen staff for one parent/carer.
- No visitors under the age of 16 years are permitted, including siblings.
- While in the room, with no healthcare workers present, parent/caregiver is not required to wear PPE.
- Specific guidance should be provided to the parent/caregiver regarding PPE requirements based on their child's risk stratification.

- If parents/caregivers needs to leave the room, a surgical mask must be worn at all times.
- The indoor and outdoor play areas and the communal parent lounge are closed.
- Encourage families to use own personal electronic devices to enable visual communication with family and friends to provide them with 'virtual' visitors.

4.5 Other Considerations

- Limit contact to the minimum number of essential healthcare workers per patient to minimise unnecessary interactions.
- Where possible, only ONE member of medical staff should enter any patient's room at one time.
- Limit movement and transport of patients. If transport is necessary, place a surgical mask on the patient and parent/caregiver. Refer to Western Health COVID-19 PPE Guideline .
- Procedures required such as; insertion of intravenous cannula or nasogastric tube, blood collection, CXR, etc. should be performed where possible in the patients room; not in the treatment room with strict adherence to PPE guidelines.
- Do not introduce portable computers (Workstations on Wheels) into the patient rooms.

4.6 Discharge

At discharge, inform families regarding appropriate home isolation. Strict isolation must apply for patients until COVID-19 swab results are returned. Subsequent isolation requirements are dependent upon the result, patient symptoms and other clinical diagnosis.

For all patient isolation information:

Patient Information - Factsheet confirmed case coronavirus

Patient Information Coronavirus (COVID-19) suspected cases - what you need to know

Dorevitch are following up all COVID-19 results and will contact patients. If parents call the CW, reassure them and refer parent telephone query to the paediatric medical team for follow up.

4.6.1 Follow-Up

Discuss the appropriate method of follow up with the duty consultant paediatrician. Where possible, any investigations or follow-up should be completed locally with the child's General Practitioner.

If paediatric medicine follow up is required, referral to the General Paediatric Clinic should be made using BOSSnet.

For non-urgent paediatric medical conditions that require follow up, document in the discharge summary and do not make a BOSSnet referral. Child's GP to refer later if required.