

# Managing children with COVID-19 in a primary care setting

Shidan Tosif, MBBS FRACP PhD Respiratory Infection Clinic Lead Paediatrician, Royal Children's Hospital Melbourne Research Fellow, Murdoch Children's Research Institute



# **COVID-19: Australian Children**

Australia (all settings) :

- 23,500 children < 19 years</p>
- 22% of all COVID-19 in Australia

### Victoria :

8000 cases to date, 2981 active

## 2020 Victorian Experience:

- 3,261 cases (16% of all Victorian cases)
- 131 presented to ED: 115 (88%) required no medical intervention
- 51 admitted: most brief/precautionary
- 3 PICU (2 PIMS-TS, 1 CHD + severe COVID-19)





Source: NINDSS data 24/9/2021



NIC-

# COVID-19 in Children

#### Delta strain

- − ≠ more severe disease
- Higher transmissibility
- Numbers of cases overall and proportionate severe disease will be greater.
- Hospitalization rates 0.1 2%
- Death < 0.03%
- USA
  - 5.5m cases among 75 million children, with 480 deaths
  - Mortality rate of Covid-19 in children has decreased from 0.06% in 2020, to 0.01% 2021
- UK
  - 470,000 infections (Feb 2020 March 2021 pre-Delta), 25 deaths
  - Mar '21 Sept '21, 52 deaths, no increase in the death rate overall

MCRI Research Brief, https://www.mcri.edu.au/sites/default/files/media/documents/covid-19and-child-and-adolescent-health-140921.pdf



# **COVID-19 Symptoms in Children**

- Fever, cough, sore throat, rhinorrhea are most common symptoms
- Asymptomatic range from 14.6% to 42%
- Median illness duration older children (7 days, IQR 3–12), younger children (5 days, 2–9)



children's research institute The Royal Children's Hospital Melbourne

murdoch

# Spectrum of Disease

- Acute Respiratory Tract Infection
  - Respiratory distress
  - Bronchiolitis, croup, pneumonia
- Medical complications
  - MIS-C/PIMS-TS (<0.1%)</p>
    - Fever (≥3 days), signs of shock, rash and abdominal pain 2-6 weeks post COVID-19
  - Long COVID (4 66% \*limitations)
    - Prolonged symptoms > 3 months rare
  - PE/DVT

murdoch children's research institute The Royal **Children's** Hospital Melbourne

# **Risk Factors for Severe Disease**

- Older children > 12 years of age
- Unvaccinated
- Pre-existing comorbidities:



- cancer, obesity, chronic respiratory/kidney/cardiovascular/neurological disorders, immune disorders/ metabolic/hematologic disorders
- Severe COVID-19: 5.1% of those with comorbidities, and in 0.2% without
- Risk of severe disease/death is still low in children with comorbidities
- Children living with disadvantage, low socioeconomic or "minority" ethnic status

Tsankov et al (2020) <u>https://pubmed.ncbi.nlm.nih.gov/33227520/</u> Ward et al (2021) <u>https://www.medrxiv.org/content/10.1101/2021.07.01.21259785v</u>

#### SEVERE ILLNESS

- Respiratory distress or visible work of breathing and unable to measure oxygen saturations
- · Requiring Oxygen/NG/ IV fluids
  - Abnormal vital signs
  - Altered conscious state
- Febrile neonate <28 days
- · Symptoms of Kawasaki's disease or PIMS-TS

#### HIGH RISK (with mild symptoms)

- 1. Complex medical, cardiac, respiratory or neurodevelopmental comorbidities
- 2. Immunosuppressed
- 3. Extreme obesity
- 4. Afebrile neonates (<28 days corrected)

#### **MODERATE ILLNESS**

- 1. Decreased oral intake/ hydration concerns
- 2. Mild -mod work of breathing with SaO2 >94%

#### LOW RISK

- 1. Asymptomatic or Mild Disease
- 2. Comorbidities but asymptomatic

Refer to local ED for assessment	0.5 %	The Royal Children's Hospital Melbourne
Consider Paediatric Hospital in the Home admission after medical review, if additional monitoring required (refer below)	3-10%	COVID-19 Positive Pathway
GP led care: COVID-19 Positive Pathway	90-97%	

# **Primary Care Management**

## Treat the clinical syndrome

- Most will be mild viral respiratory infections
- Escalate if moderate/severe respiratory disease or symptomatic with significant comorbidities

## Red flags

- Fever/rash/abdominal pain/shock (PIMS-TS)
- Signs of thromboembolism
- Consider alternate/co-existing diagnosis in child who has positive test for SARS-CoV-2 (e.g. sepsis)

#### **Hospital Treatment:**

- Respiratory support
- Corticosteroids, if ongoing supplemental oxygen
- Corticosteroids/IVIG PIMS-TS
- Venous thromboembolism prophylaxis

# **COVID-19 Indirect Impact**

#### Indirect impact

- Wellbeing, anxiety
- Education gap disproportionate impact on disadvantaged, disengagement from education
- Disruption of support for students with disabilities, mental health issues
- Adverse impact on vulnerable children eg. free meal services, child protection
- Social impact
- Social risk factors
  - Social isolation
  - Risk of violence, abuse and neglect
  - Other child in home with significant disability, dev, behavioural or mental health problem
- Parents may be admitted leaving children without alternative carers
  - Parent / carer at high risk or in hospital
  - Children with complex medical needs (Tracheostomy/home ventilation, TPN etc.) likely to need hospital care if carers unwell
- Identify during intake whether there are care arrangements available if parents hospitalised





# Thank You

#### Shidan.Tosif@rch.org.au



# Acknowledgements

#### The Royal Children's Hospital

- Hospital in the Home
- General Medicine

#### Monash Childrens Hospital

• Sarah Jame, Hospital in the Home

#### SAEFVIC

A/Prof Nigel Crawford

#### **Research Team**

- Alissa McMinn
- Belle Overmars
- Jill Nguyen
- Kate Dohle



## References

## RCH CPGs

– COVID-19:

https://www.rch.org.au/clinicalguide/guideline\_index/COVID-19/

COVID-19 Positive Pathways:

https://www.rch.org.au/clinicalguide/guideline\_index/Victorian\_pathways\_for\_COVID-19\_positive\_children/

- Research Summary:
  - <u>https://www.mcri.edu.au/covid-19/research-briefs</u>

The Royal Children's Hospital Melbourne

murdoch children's