COVID-19

Paediatric care in the community: What's new?

HNEkidshealth
Children, Young People & Families

13th January 2021

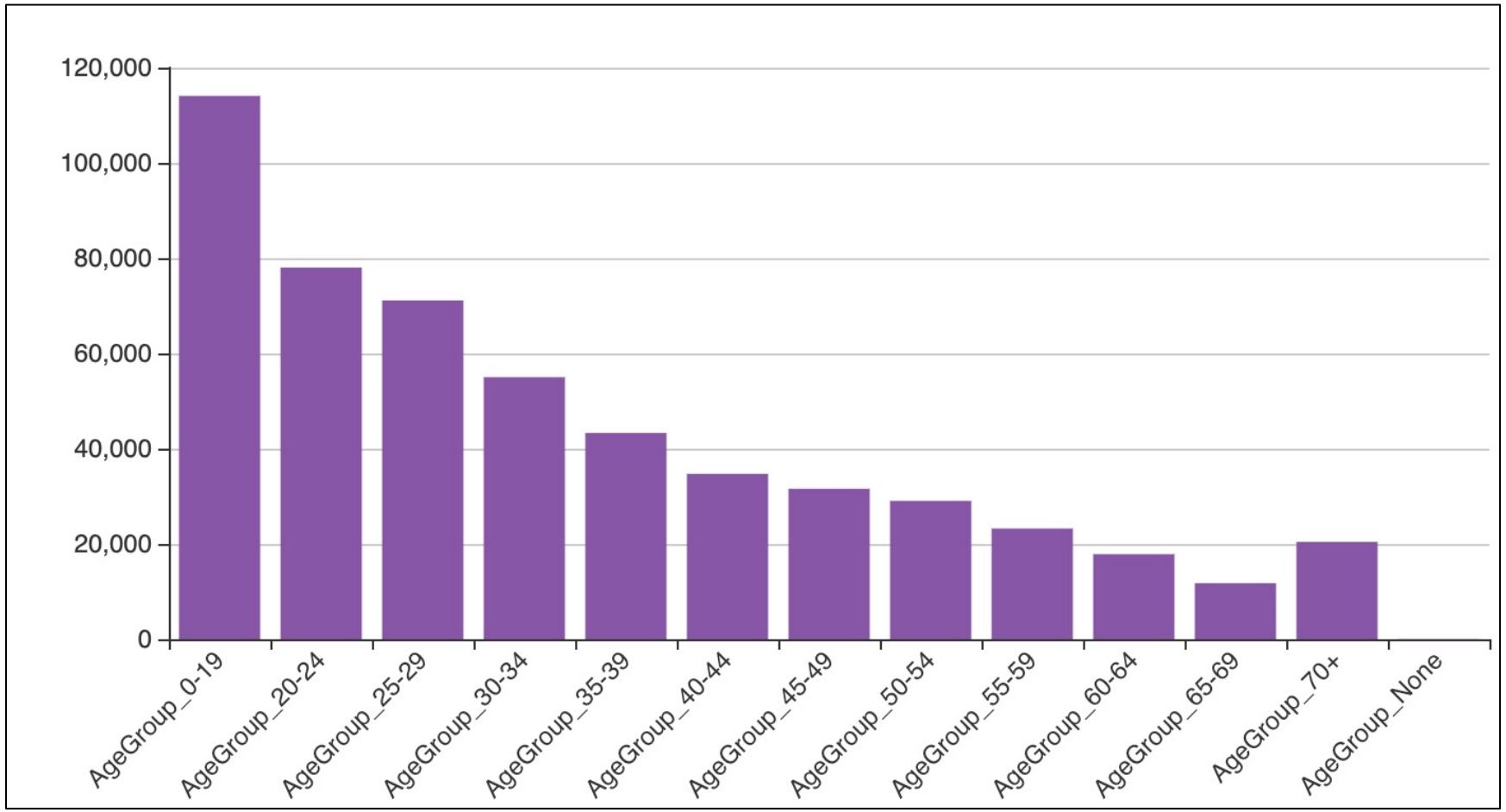
Primary Health Network

Dr Coen Butters

Infectious Diseases Physician, John Hunter Children's Hospital

Research Fellow, Murdoch Children's Research Institute

COVID-19 NSW cases by age range June 2021-January 2022



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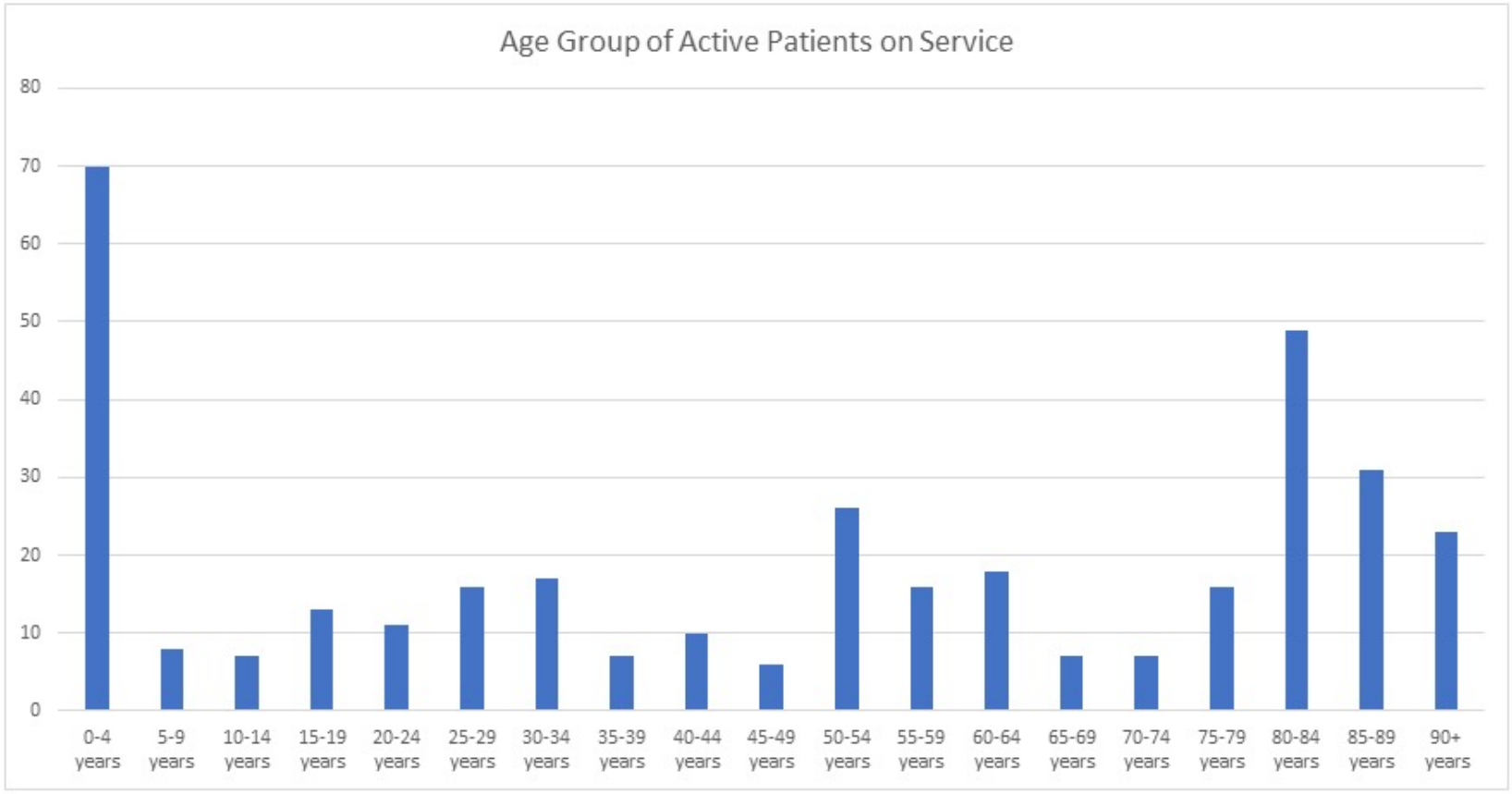
HNELHD as of 13th January 2021



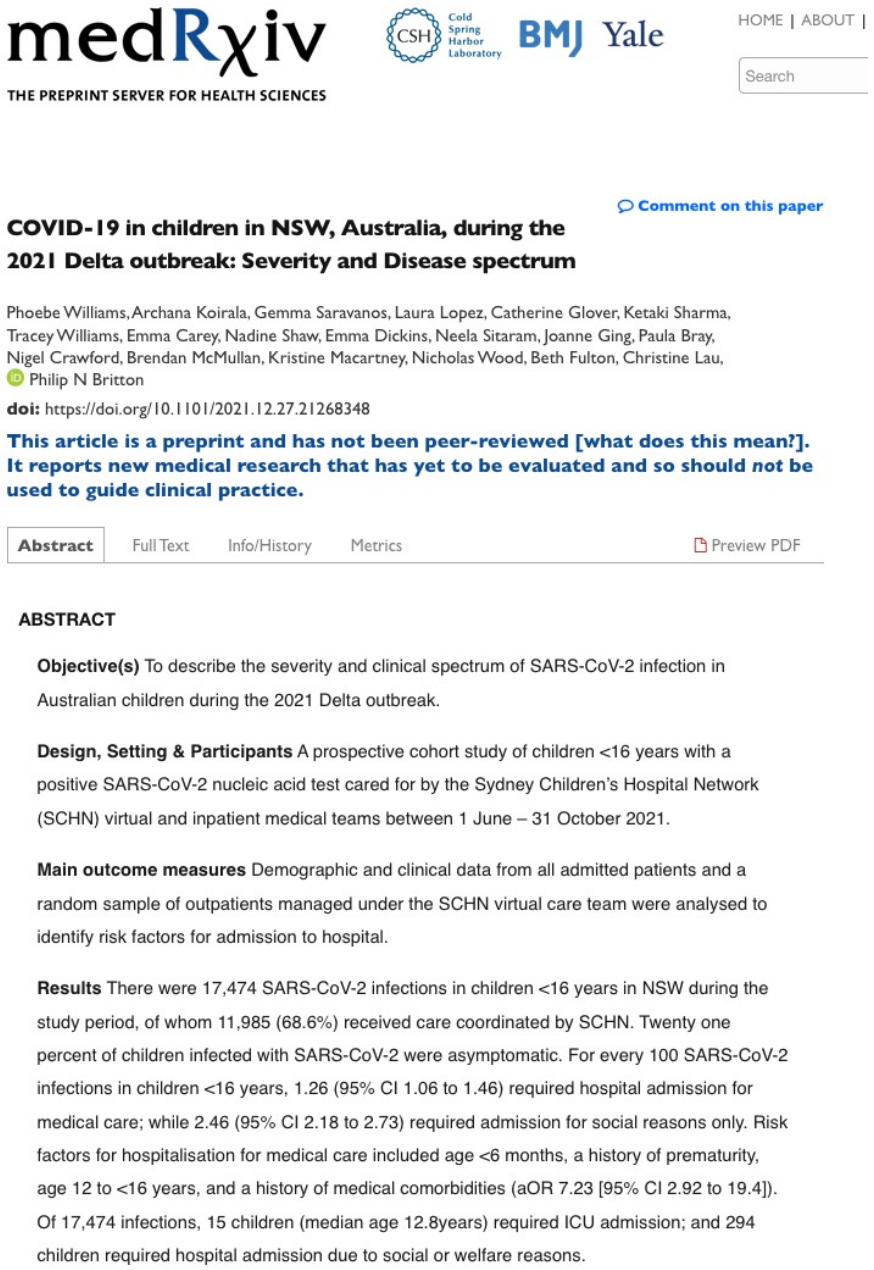
Data courtesy of Julie Evans

Limitations to paediatric case numbers

- Access to PCR testing
- Recent system for logging positive RATs
- Many RATs not validated < 5 year old
- Less incentive for testing

SCHN experience

- **17,474** patients aged < 16y with COVID-19 June-October 2021
  - 21% asymptomatic
  - Medical admission 1.26%
  - ‘Social Admission’ 2.46%
- **15**/17474 (0.09%) children required ICU



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COVID-19 in children in NSW, Australia, during the 2021 Delta outbreak: Severity and Disease spectrum

Phoebe Williams, Archana Koirala, Gemma Saravanos, Laura Lopez, Catherine Glover, Ketaki Sharma, Tracey Williams, Emma Carey, Nadine Shaw, Emma Dickins, Neela Sitaram, Joanne Ging, Paula Bray, Nigel Crawford, Brendan McMullan, Kristine Macartney, Nicholas Wood, Beth Fulton, Christine Lau, Philip N Britton

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Abstract | Full Text | Info/History | Metrics | Preview PDF

ABSTRACT

Objective(s) To describe the severity and clinical spectrum of SARS-CoV-2 infection in Australian children during the 2021 Delta outbreak.

Design, Setting & Participants A prospective cohort study of children <16 years with a positive SARS-CoV-2 nucleic acid test cared for by the Sydney Children’s Hospital Network (SCHN) virtual and inpatient medical teams between 1 June – 31 October 2021.

Main outcome measures Demographic and clinical data from all admitted patients and a random sample of outpatients managed under the SCHN virtual care team were analysed to identify risk factors for admission to hospital.

Results There were 17,474 SARS-CoV-2 infections in children <16 years in NSW during the study period, of whom 11,985 (68.6%) received care coordinated by SCHN. Twenty one percent of children infected with SARS-CoV-2 were asymptomatic. For every 100 SARS-CoV-2 infections in children <16 years, 1.26 (95% CI 1.06 to 1.46) required hospital admission for medical care; while 2.46 (95% CI 2.18 to 2.73) required admission for social reasons only. Risk factors for hospitalisation for medical care included age <6 months, a history of prematurity, age 12 to <16 years, and a history of medical comorbidities (aOR 7.23 [95% CI 2.92 to 19.4]). Of 17,474 infections, 15 children (median age 12.8years) required ICU admission; and 294 children required hospital admission due to social or welfare reasons.

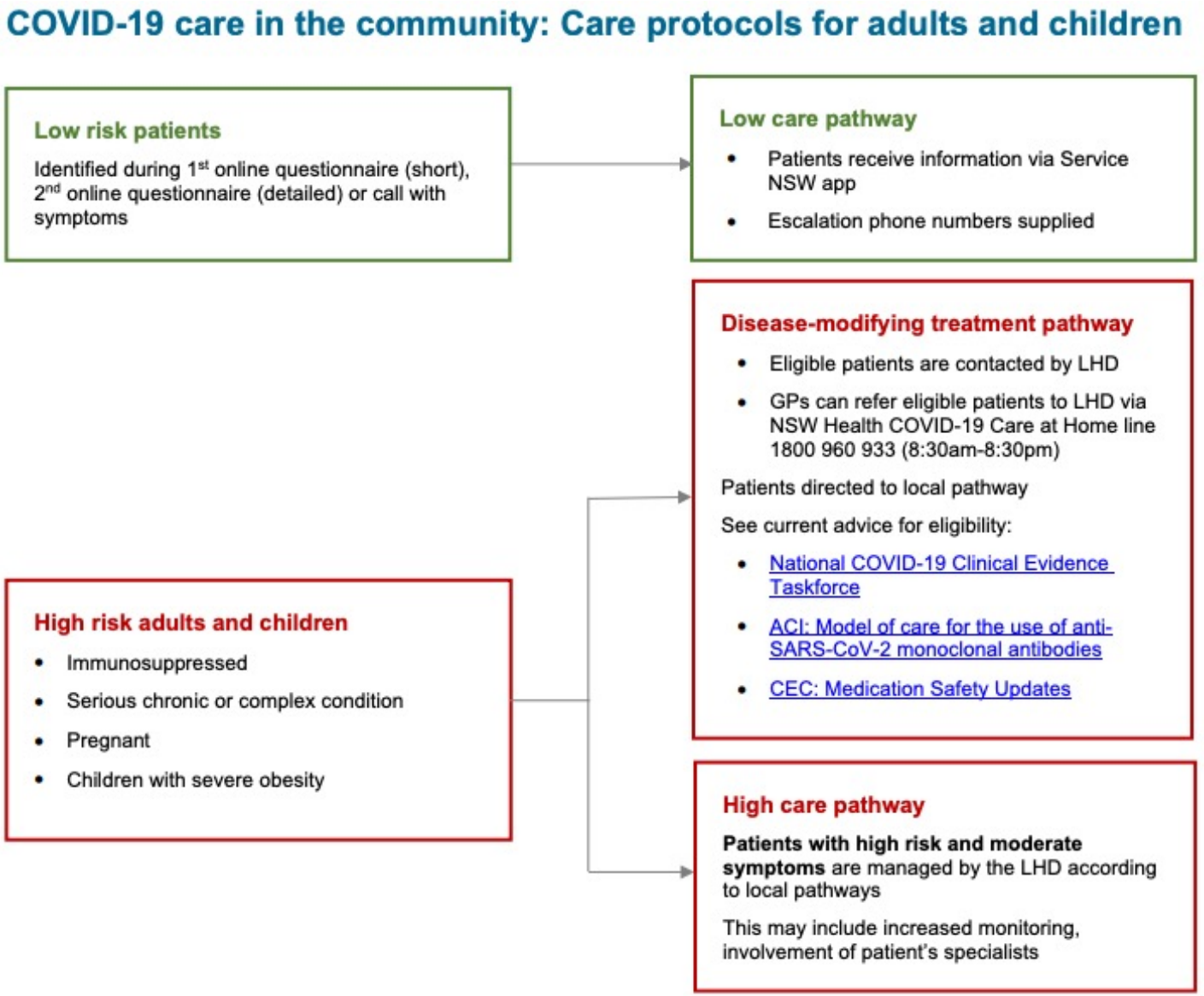
SCHN Experience: Risk factors associated with admission

	Univariate analysis		Multivariable analysis[1]	
Predictor	**OR (95% CI)**	***P* value**	**aOR (95% CI)**	***P* value**
Age group[2]		**<0.001**		**<0.001**
<6 months	23.2 (11.4-50.3)		71.0 (18.5-326)	
6 months to <2 years	4.80 (2.50-9.29)		10.5 (3.19-37.9)	
2 to <5 years	1.80 (0.93-3.44)		4.51 (1.28-16.8)	
5 to <12 years	1.0 (ref)		1.0 (ref)	
12 to <16 years	3.47 (1.99-6.16)		6.60 (2.14-22.2)	
Sex (M)	0.91 (0.63-1.33)	0.6	0.71 (0.32-1.56)	0.4
Indigenous[3]	1.45 (0.59-3.44)	0.4	2.25 (0.31-14.6)	0.4
Household contact[4]	0.86 (0.42-1.85)	0.7	1.31 (0.24-6.94)	0.8
Prematurity	2.45 (1.18-5.25)	0.017	0.55 (0.15-2.07)	0.4
Weight in the 95th percentile[5]	0.73 (0.47-1.14)	0.2	0.76 (0.30-1.86)	0.5
Comorbid condition	2.63 (1.73-4.00)	**<0.001**	7.23 (2.92-19.4)	**<0.001**
Asthma/VIW[6,7]	0.38 (0.18-0.78)	**0.008**	Not entered	
Other respiratory disease[7]	9.21 (1.61-174)	**0.009**	Not entered	
Cardiac disease[7]	2.19 (0.65-8.59)	0.2	Not entered	
Clinical features				
Fever	14.6 (8.83-24.7)	**<0.001**	21.1 (9.14-54.1)	**<0.001**
Cough	2.73 (1.78-4.22)	**<0.001**	2.89 (1.16-7.57)	**0.022**
Rhinorrhoea	1.48 (0.99-2.23)	0.056	0.53 (0.22-1.22)	0.14
Fatigue/malaise	1.80 (1.18-2.77)	**0.007**	1.40 (0.61-3.23)	0.4

COVID Kids @ Home Program

1. Preventing mortality from COVID-19 in children (rare)
2. Preventing hospital presentation/admission in children with COVID-19
3. Ensuring access to healthcare for COVID-19 positive children
4. Identifying vulnerable children and supporting all families

Care Pathway



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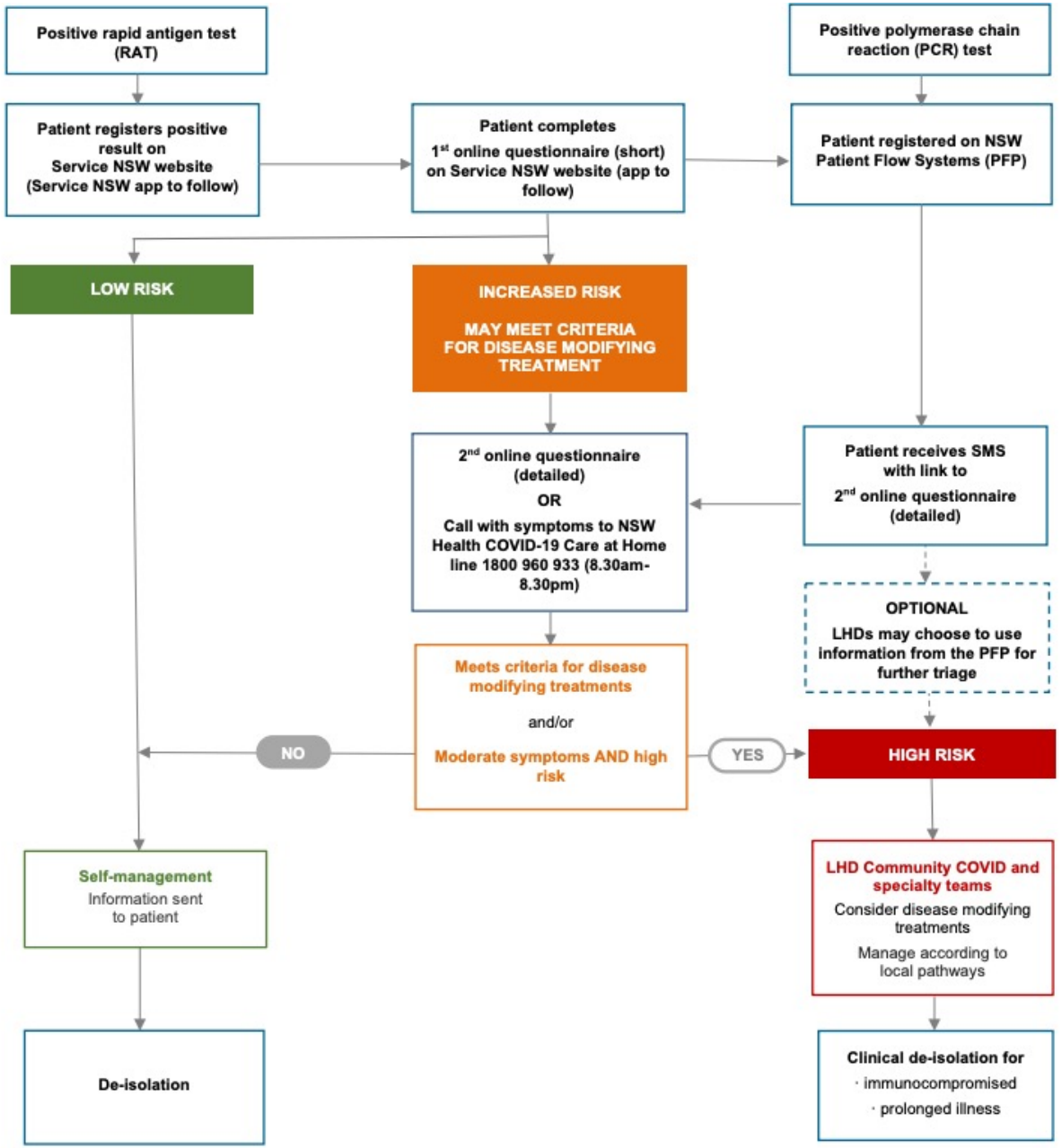
Admission criteria for COVID Kids @ Home

- Age < 3 months
- Obesity (> 95th percentile for age or >30)
- Paediatric Complex Chronic Conditions (PCCC)
- Asthma: ICU ever or ≥ 4 admissions/year
- Diabetes
- Immunocompromise: T cell disorder, organ or BM transplant, chemotherapy
- Moderate symptoms: dehydration, breathlessness, persistent fever



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Current data

- **132** Children admitted to COVID Kids @ Home
- 35 infants
- **25** patients requiring medical management
  - 3 very high risk: immunodeficiency, neonate with chronic lung disease, post transplant for malignancy
  - 7 high risk: infants, home oxygen, cardiac disease

Markers of deterioration

- **Inadequate oral intake**: < 3 wet nappies in 24 hours, <2/3 oral intake, dizziness, syncope
- **Respiratory deterioration**: significant change in work of breathing, breathlessness, SaO2 < 95%, apnoea, colour change
- **Vomiting, abdominal pain or diarrhoea > 4/day**
- **Increased lethargy**
- **Fever lasting > 5 days**
- **Rash/conjunctivitis** > 5 days after symptom onset
- **Cardiac symptoms**

Disease modifying agents in children

- Budesonide/Flixotide
- Sotrovimab
- Remdesivir

Budesonide

- Consider for symptomatic COVID-19 in children and adolescents who do not require oxygen and who have one or more risk factors for disease progression (asthma, obesity, PCCC)
  - Budesonide 800 mcg BD
  - Age < 5: Fluticasone 125 mcg bd
  - 6- 11y: Ciclesonide 160 mcg BD
  - ≥ 12: Ciclesonide 320 µg bd

Sotrovimab

- Consider sotrovimab for children aged > 12 years and weighing > 40 kg who are:
  - Unvaccinated, OR
  - Partially vaccinated, OR
  - Vaccinated but significantly immunocompromised, AND
  - Are within 5 days of symptom onset, AND
  - Have risk factors for deterioration including:
    - Immunosuppression: cancer treatment, organ transplant, immunosuppressive medication, immune deficiency)
    - Significant comorbidity: obstructive lung disease, heart failure, severe asthma, IDDM, CKD, liver disease, complex chronic condition
    - Severe obesity: weight > 95th centile

Remdesivir

- Children < 12 years old or < 40 kg with significant risk factors for disease progression (in discussion with Paediatric Infectious Diseases)

Significant comorbidity (see Box 1 for specific criteria):

NATIONAL MEDICINES STOCKPILE (NMS) CRITERIA:

- **Chronic obstructive lung disease** (see specific criteria[1])
- **Heart failure** (see specific criteria[2])
- **Severe asthma** (see specific criteria[3])
- **Obesity** (BMI ≥95th [CDC] / ≥97th [WHO] centile for age)
- **Diabetes** (insulin-dependent)
- **Chronic kidney disease** (GFR <15 ml/min/1.73m^2)
- **Chronic liver disease**
- **Paediatric COMPLEX chronic conditions (PCCC):** congenital and genetic (incl trisomy 21), cardiovascular, gastrointestinal, malignancies, metabolic, neuromuscular, renal and respiratory conditions, sickle cell disease

***Significant immunosuppression:**

- **Primary or acquired immunodeficiency**
- **Haematologic neoplasms**: leukaemias, lymphomas, myelodysplastic syndromes
- **Post-transplant**: solid organ (on immuno-suppressive therapy), haematopoietic stem cell (within 24m)
- **Other significantly immunocompromising conditions** (discuss w ID/immunology consultant)
- **Immunosuppressive Rx** (current or recent) incl:
  - Chemotherapy - more intensive that maintenance-style ALL treatment
  - High-dose corticosteroids (≥0.5 mg/kg/d or ≥20 mg/d prednisone, or equivalent) for ≥14 days
  - Select biologics or disease-modifying anti-rheumatic drugs (DMARDs)[4]

Courtesy of Royal Children's Hospital Melbourne

PIMS-TS

- 11 year old girl
- No know COVID exposure
- Presented to Belmont ED: acute abdominal pain and vomiting
- Transferred to JHH for Paed Surg consult – US periportal echogenicity
- Developed diffuse rash, fevers and shock
- PICU: 80 ml/kg fluid and noradrenaline infusion
- IVIg, steroids and aspirin
- Normal echocardiogram

Paediatric Inflammatory Multisystem Syndrome Temporally associated with SARS-CoV-2 pandemic (PIMS-TS).

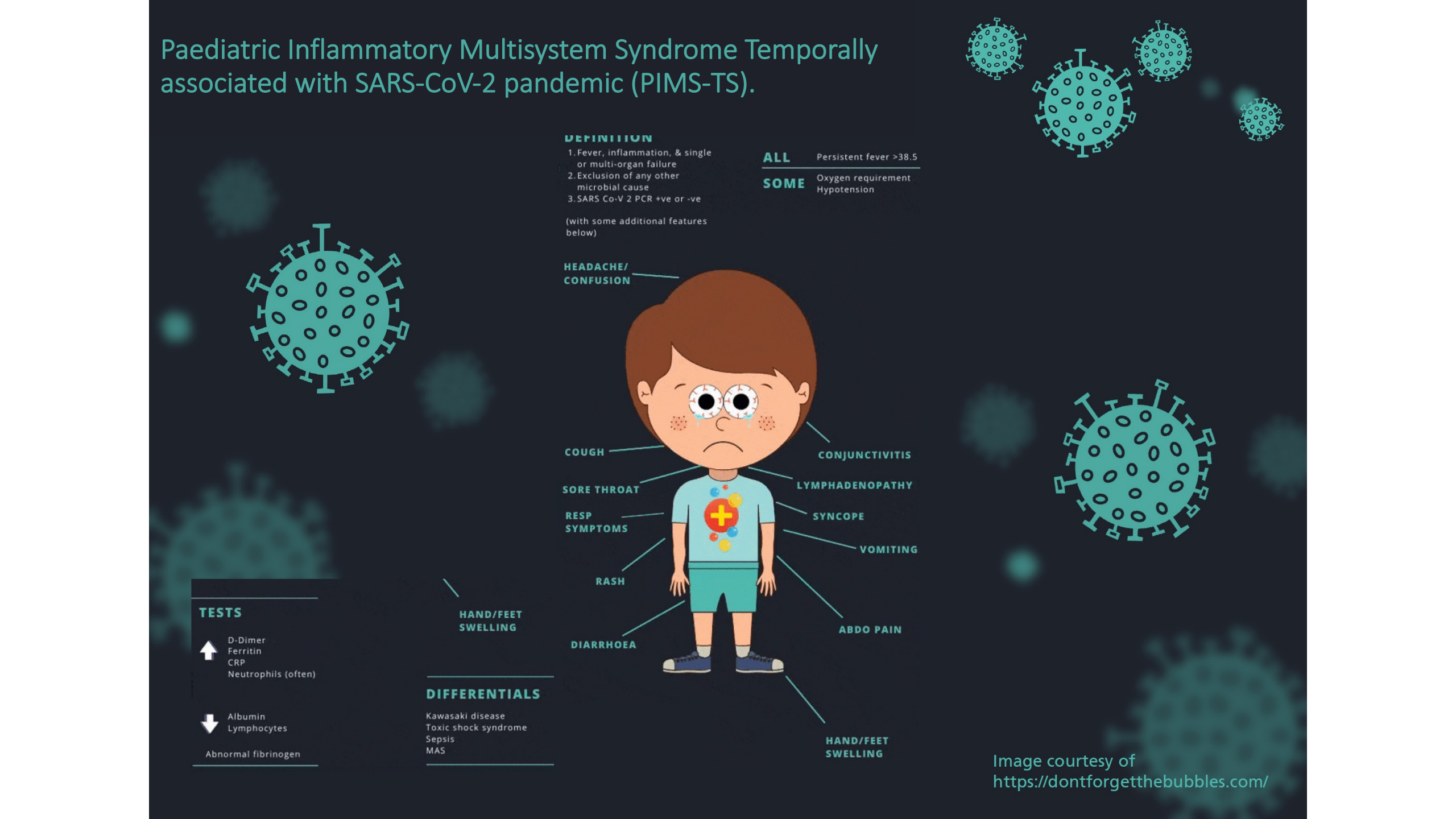

Image courtesy of https://dontforgetthebubbles.com/

Referring to COVID Kids @ Home

- Self referral via NSW COVID Care at Home- 1800 960 933
- Practitioner refers via email- HNELHD-JHCHPaedHITHCOVID@health.nsw.gov.au
- Call COVID Kids @ Home (0800-1630 hrs)- 0438 141 930

For clinical discussion of unwell patients:

- 49 21 3000 JHCH Paediatric COVID consultant or General Paediatrician on-call

Questions?

coen.butters@health.nsw.gov.au

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