

## Supplemental Online Content

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This supplemental material has been provided by the authors to give readers additional information about their work.

**eTable 1: Cumulative outcomes, up to 14 days<sup>a</sup> following the index ED visit, among 3221<sup>b</sup> SARS-CoV-2 positive children. Data are n (%) [95%CI or one-sided 97.5%CI] unless otherwise stated.**

	All children	Sex		Age group					Chronic condition <sup>c</sup>	
		Male	Female	< 1 yr	1-<2 yr	2-<5 yr	5-<10 yr	10-<18 yr	No	Yes
	N=3221	N=1693	N=1528	N=828	N=425	N=576	N=551	N=842	N=2733	N=484
<b>Severe respiratory illness or ventilatory support</b>	73 (2.3) [1.8-2.8]	39 (2.3) [1.6-3.1]	34 (2.2) [1.5-3.1]	9 (1.1) [0.5-2.1]	5 (1.2) [0.4-2.7]	13 (2.4) [1.3-4.0]	12 (2.1) [1.1-3.6]	34 (4.0) [2.8-5.6]	43 (1.6) [1.1-2.1]	30 (6.2) [4.2-8.7]
Acute respiratory distress syndrome	20 (0.6)	12 (0.7)	8 (0.5)	5 (0.6)	1 (0.2)	5 (0.9)	2 (0.3)	7 (0.8)	13 (0.5)	7 (1.4)
Respiratory failure	40 (1.2)	23 (1.4)	17 (1.1)	5 (0.6)	4 (0.9)	6 (1.1)	7 (1.2)	18 (2.1)	21 (0.8)	19 (3.9)
Pleural effusion or pneumothorax <sup>e</sup>	6 (0.2)	4 (0.2)	2 (0.1)	0 (0)	0 (0)	0 (0)	2 (0.3)	4 (0.5)	4 (0.1)	2 (0.4)
Positive pressure ventilation	43 (1.3)	22 (1.3)	21 (1.4)	3 (0.4)	3 (0.7)	8 (1.5)	9 (1.6)	20 (2.4)	23 (0.8)	20 (4.1)
Chest drainage procedure	6 (0.2)	4 (0.2)	2 (0.1)	0 (0)	0 (0)	2 (0.4)	1 (0.2)	3 (0.4)	3 (0.1)	3 (0.6)
<b>Inotropic support</b>	34 (1.1) [0.7-1.5]	21 (1.2) [0.8-1.9]	13 (0.9) [0.5-1.5]	2 (0.2) [0-0.9]	6 (1.4) [0.5-3.0]	2 (0.4) [0-1.3]	9 (1.6) [0.7-2.9]	15 (1.8) [1.0-2.9]	26 (1.0) [0.6-1.4]	8 (1.7) [0.7-3.2]
<b>Cardiovascular illness</b>	9 (0.3) [0.1-0.5]	9 (0.5) [0.2-1.0]	0 (0) [0-0.2]	0 (0) [0-0.4]	1 (0.2) [0-1.3]	0 (0) [0-0.7]	2 (0.3) [0-1.2]	6 (0.7) [0.3-1.5]	7 (0.3) [0.1-0.5]	2 (0.4) [0.1-1.5]
Cardiac arrest	1 (0.03)	1 (0.06)	0 (0)	0 (0)	1 (0.2)	0 (0)	0 (0)	0 (0)	1 (0.04)	0 (0)
Heart failure	2 (0.06)	2 (0.1)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	2 (0.2)	1 (0.04)	1 (0.2)
Stroke	1 (0.03)	1 (0.06)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (0.1)	1 (0.04)	0 (0)
Myocarditis, endocarditis, pericarditis	6 (0.2)	6 (0.4)	0 (0)	0 (0)	0 (0)	0 (0)	2 (0.3)	4 (0.5)	5 (0.2)	1 (0.2)
<b>Other severe illness, intervention</b>	22 (0.7) [0.4-1.0]	11 (0.6) [0.3-1.2]	11 (0.7) [0.4-1.3]	3 (0.4) [0.1-1.1]	2 (0.5) [0.1-1.7]	6 (1.1) [0.4-2.4]	5 (0.9) [0.3-2.0]	6 (0.7) [0.3-1.5]	18 (0.7) [0.4-1.0]	4 (0.8) [0.2-2.1]
Meningitis or encephalitis	5 (0.2)	3 (0.2)	2 (0.1)	1 (0.1)	0 (0)	2 (0.4)	1 (0.2)	1 (0.1)	5 (0.2)	0 (0)

Septic shock	11 (0.3)	4 (0.2)	7 (0.5)	1 (0.1)	2 (0.5)	2 (0.3)	3 (0.5)	3 (0.4)	10 (0.4)	1 (0.2)
Sepsis with bacteremia	2 (0.1)	1 (0.06)	1 (0.07)	0 (0)	1 (0.2)	1 (0.2)	0 (0)	0 (0)	2 (0.1)	0 (0)
Renal replacement therapy	5 (0.2)	4 (0.2)	1 (0.07)	1 (0.1)	0 (0)	0 (0)	2 (0.3)	2 (0.2)	2 (0.1)	3 (0.6)
<b>Death</b>	4 (0.1) [0.04-0.3]	2 (0.1) [0.02-0.5]	2 (0.1) [0.02-0.5]	0 (0) [0-0.6]	0 (0) [0-1.1]	1 (0.2) [0-1.1]	3 (0.5) [0.1-1.7]	0 (0) [0-0.6]	0 (0) [0-0.2]	4 (0.8) [0.3-2.3]
<b>MIS-C or Kawasaki</b>	50 (1.6) [1.2-2.0]	30 (1.8) [1.2-2.5]	20 (1.3) [0.8-2.0]	2 (0.2) [0-0.9]	4 (0.9) [0.3-2.4]	12 (2.2) [1.1-3.8]	23 (4.0) [2.7-6.2]	9 (1.1) [0.5-2.0]	45 (1.6) [1.2-2.2]	5 (1.0) [0.3-2.4]
Severe outcome	16 (0.5)	11 (0.6)	5 (0.3)	0	2 (0.5)	2 (0.3)	7 (1.3)	5 (0.6)	15 (0.5)	1 (0.2)

<sup>a</sup> May extend to 4 weeks for children hospitalized within 2 weeks, whose hospitalization extends past the 2-week follow-up time-point.

<sup>b</sup> No outcome information is known for the 1/3222 children without any emergency department discharge/hospitalization information

<sup>c</sup> Chronic condition is missing for 5/3221

<sup>d</sup> A child may have multiple diagnoses / interventions (categories are not mutually exclusive)

<sup>e</sup> requiring drainage

**eTable 2: Reasons for return to care among 320 SARS-CoV-2 positive children discharged on day 0 with complete follow-up.**

Reason for return	n (%)
<b>Return to ED/hospital, reason unknown<sup>a</sup></b>	<b>151/320 (47.2)</b>
<b>Worsening or persistent symptoms general</b>	<b>18/320 (5.6)</b>
<b>Specific reason given for return<sup>b</sup></b>	<b>151/320 (47.2)</b>
Fever	47/151 (31.1)
Cough	42/151 (27.8)
Other reason (presumed linked to COVID-19) <sup>c</sup>	28/151 (18.5)
Difficulty breathing	25/151 (16.6)
Rash (not specific to hands/feet)	21/151 (13.9)
Vomiting	19/151 (12.6)
Diarrhea	10/151 (6.6)
Abdominal pain	10/151 (6.6)
Dehydration	6/151 (4.0)
Rash on hands	6/151 (3.5)
Rash on feet	2/151 (1.2)

<sup>a</sup>Question asked as 'return related to initial reason for ED visit or possible complications of illness?', 36/151 of these children were hospitalized.

<sup>b</sup>Children may have more than one reason noted.

<sup>c</sup>Symptom presumed by guardian/caregiver to be possibly linked to COVID-19.

**eTable 3: Cumulative outcomes, up to 14 days<sup>a</sup> following the index ED visit, among 2510<sup>b</sup> SARS-CoV-2 positive children who were discharged to home from the index emergency department visit. Data are n (%) [95%CI or one-sided 97.5% CI] unless otherwise stated.**

	All children	Sex		Age group					Chronic condition <sup>c</sup>	
		Male	Female	< 1 yr	1-<2 yr	2-<5 yr	5-<10 yr	10-<18 yr	No	Yes
	N=2510	N=1306	N=1204	N=647	N=362	N=432	N=449	N=620	N=2204	N=303
<b>Returned to care</b> (new symptoms, worsening condition, or persistent symptoms)	320 (12.7) [11.5-14.1]	167 (12.8) [11.0-14.7]	153 (12.7) [10.9-14.7]	107 (16.5) [13.8-19.6]	49 (13.5) [10.2-17.5]	44 (10.2) [7.5-13.4]	37 (8.2) [5.9-11.2]	83 (13.4) [10.8-16.3]	270 (12.3) [10.9-13.7]	50 (16.5) [12.5-21.2]
<b>Hospitalized</b>	50 (2.0) [1.5-2.6]	28 (2.1) [1.4- 3.1]	22 (1.8) [1.1-2.8]	16 (2.5) [1.4-4.0]	9 (2.5) [1.1-4.7]	8 (1.9) [0.8-3.6]	4 (0.9) [0.2-2.3]	13 (2.1) [1.1-3.6]	36 (1.6) [1.1-2.3]	14 (4.6) [2.5- 7.6]
Median stay in days [IQR] <sup>d</sup>	3.0 (1.0, 5.2)	3.0 (1.0, 4.0)	3.0 (2.0, 9.0)	1.0 (0, 2.5)	3.5 (0.3, 5.5)	3.0 (1.0, 6.0)	5.0 (1.0, 11.0)	5.0 (3.0, 9.8)	3.0 (1.0, 4.0)	7.0 (2.0, 10.3)
<b>ICU admission</b>	8 (0.3) [0.2, 0.7]	1 (0.1) [0-0.5]	7 (0.6) [0.3-1.3]	0 [0-0.7]	0 [0-1.2]	1 (0.2) [0.01-1.5]	1 (0.2) [0.01-1.4]	6 (0.2) [0.01-1.4]	4 (0.2) [0.06-0.5]	4 (1.3) [0.4, 3.6]
Median stay in days [IQR]	6.0 (3.0, 11.0)	3.0 (NA)	7.0 (3.5, 11.0)	NA	NA	2.0 (NA)	11.0 (NA)	6.0 (3.5, 9.5)	3.4 (2.3, 7.0)	11.0 (6.0, 11.0)
<b>Severe outcome<sup>e</sup></b>	12 (0.5) [0.2-0.8]	3 (0.2) [0-0.7]	9 (0.7) [0.3-1.4]	2 (0.3) [0-1.1]	0 [0-1.0]	2 (0.5) [0.1-1.7]	1 (0.2) [0-1.2]	7 (1.1) [0.5-2.3]	6 (0.3) [0.1-0.6]	6 (2.0) [0.7-4.3]
Severe respiratory illness <sup>f</sup>	9 (0.4)	2 (0.2)	7 (0.6)	2 (0.3)	0	1 (0.2)	1 (0.2)	5 (0.8)	4 (0.2)	5 (1.7)
Inotropic support	1 (0.04)	0	1 (0.1)	0	0	1 (0.2)	0		1 (0.05)	0
Myocarditis	1 (0.04)	1 (0.1)	0							
Sepsis with bacteremia	1 (0.04)	0	1 (0.1)	0	0	1 (0.2)	0	0	1 (0.05)	0
Coagulation abnormality	1 (0.04)	0	1 (0.1)	0	0	0	0	1 (0.2)	0	1 (0.3)

<sup>a</sup> May extend to 4 weeks for children hospitalized within 2 weeks, whose hospitalization extends past the 2 week follow-up time-point.

<sup>b</sup> Outcomes were censored (and not presented here) for 26/2536 children who were discharged at Day 0 but were lost-to-follow-up.

<sup>c</sup> Chronic condition information is missing for 3/2536.

<sup>d</sup> Missing length of stay for 8 hospitalized children.

<sup>e</sup> A child may have multiple diagnoses / interventions (categories are not mutually exclusive).

<sup>f</sup> Includes use of positive pressure ventilation or diagnosis of respiratory failure or diagnosis of acute respiratory distress syndrome .

**eTable 4: Association of demographic factors (including race and ethnicity) and medical history with severe outcomes among the 2001 SARS-CoV-2 positive children from the United States with complete covariate data. The following table reflects the final parsimonious model.**

	n/N	Adjusted Odds Ratio	95% Confidence Interval	P-value
<b>Sex</b>				
Female	32/975	ref		
Male	49/1026	<b>1.65</b>	0.96 – 2.83	0.07
<b>Age category</b>				
< 1 year	10/478	ref		
1 – <2 years	7/223	<b>1.52</b>	0.69 – 3.35	0.30
2 - <5 years	11/302	<b>1.51</b>	0.72 – 3.19	0.28
5 - <10 years	13/353	<b>1.56</b>	0.99 – 2.45	0.06
10 - <18 years	40/645	<b>2.69</b>	1.32 – 5.47	<b>0.006</b>
<b>Ethnicity and race<sup>a</sup></b>				
Hispanic	30/789	ref		
Non-Hispanic Black	30/736	<b>1.00</b>	0.47 – 2.13	>0.99
Non-Hispanic White	14/324	<b>0.92</b>	0.50 – 1.69	0.79
Non-Hispanic Other	7/152	<b>1.26</b>	0.38 – 4.20	0.71
<b>Chronic condition<sup>b</sup></b>				
No	53/1696	ref		
Yes	28/305	<b>2.51</b>	1.56 – 4.06	<b>&lt;0.001</b>
<b>Previous pneumonia<sup>b</sup></b>				
No	62/1838	ref		
Yes	19/163	<b>2.86</b>	1.57 – 5.19	<b>0.001</b>
<b>Asthma<sup>b</sup></b>				
No	66/1670	ref		
Yes	15/331	<b>0.60</b>	0.31 – 1.15	0.13
<b>Symptom duration before testing</b>				
Asymptomatic		<b>1.35</b>	0.48 – 3.79	0.57
0-3 days	25/886	ref		
4-7 days	30/484	<b>2.41</b>	1.28 – 4.55	<b>0.007</b>
8+ days	8/144	<b>1.79</b>	0.70 – 4.60	0.23
Unknown	18/487	<b>1.21</b>	0.66 – 2.21	0.54
<b>Date of SARS-CoV-2 infection</b>				
Mar 7 – May 31, 2020	14/195	<b>1.72</b>	0.58 – 5.06	0.33
Jun 1 – Aug 31, 2020	22/538	ref		
Sept 1 – Nov 30, 2020	20/474	<b>0.80</b>	0.42 – 1.52	0.49
Dec 1, 2020 – Feb 28, 2021	15/491	<b>0.57</b>	0.29 – 1.16	0.12
Mar 1 – June 15, 2021	10/303	<b>0.68</b>	0.30 – 1.54	0.36

<sup>a</sup> Race and ethnicity data were missing for 4 children from the United States.

<sup>b</sup> Chronic condition, previous pneumonia, and asthma data were missing for 2 children from the United States.

**eTable 5: Comparison of baseline characteristics, SARS-CoV-2 positive and SARS-CoV-2 negative participants enrolled in the PERN-COVID-19 cohort study.**

	SARS-CoV-2 positive N=3222	SARS-CoV-2 negative N=7160	P-value
<b>Male</b>	1694 (52.6)	3833 (53.5)	0.37
<b>Age group</b>			<0.001
<1 year	829 (25.7)	1426 (20.1)	
1 - <2 year	425 (13.2)	1291 (18.0)	
2 - <5 years	551 (17.1)	1616 (22.6)	
5 - <10 years	576 (17.9)	1371 (19.1)	
10 - <18 years	841 (26.1)	1446 (20.2)	
<b>Country</b>			<0.001
Argentina	28 (0.9)	61 (0.9)	
Australia	0 (0)	199 (2.8)	
Canada	532 (16.5)	2402 (33.5)	
Costa Rica	420 (13.0)	516 (7.2)	
Italy	18 (0.6)	3 (0)	
New Zealand	0 (0)	106 (1.5)	
Paraguay	35 (1.1)	21 (0.3)	
Singapore	30 (0.9)	40 (0.6)	
Spain	152 (4.7)	259 (3.6)	
United States	2007 (62.3)	3553 (49.6)	
<b>Previous pneumonia<sup>a</sup></b>	227 (7.1)	767 (10.7)	<0.001
<b>Asthma<sup>b</sup></b>	423 (13.1)	1011 (14.1)	0.17
<b>Chronic condition<sup>c,d</sup></b>	484 (15.0)	1512 (21.2)	<0.001
<b>Clinical presentation<sup>e</sup></b>			
Asymptomatic	172 (5.3)	377 (5.3)	0.89
Symptomatic	3048 (94.7)	6768 (94.7)	
<i>Fever</i>	2125 (66.0)	4289 (59.9)	<0.001
<i>Respiratory<sup>f</sup></i>	2325 (72.2)	4143 (57.9)	<0.001
<i>Gastrointestinal<sup>g</sup></i>	1338 (43.1)	3383 (47.2)	<0.001
<i>Other<sup>h</sup></i>	2176 (67.5)	5343 (74.6)	<0.001
<b>Date of infection</b>			<0.001
Mar 7 – May 31, 2020	235 (7.3)	2079 (29.0)	
Jun 1 – Aug 31, 2020	851 (26.4)	2749 (38.4)	
Sept 1 – Nov 30, 2020	769 (23.9)	923 (12.9)	
Dec 1, 2020 – Feb 28, 2021	734 (22.8)	719 (10.0)	
Mar 1 – June 15, 2021	633 (19.7)	690 (9.6)	

<sup>a</sup> Missing for 4 SARS-CoV-2 positive children, and 15 SARS-CoV-2 negative children.

<sup>b</sup> Missing for 4 SARS-CoV-2 positive children, and 15 SARS-CoV-2 negative children.

<sup>c</sup> Missing for 4 SARS-CoV-2 positive children, and 16 SARS-CoV-2 negative children.

<sup>d</sup> Children may have more than one specific chronic condition.

<sup>e</sup> Missing for 2 SARS-CoV-2 positive children, and 15 SARS-CoV-2 negative children.

<sup>f</sup> Includes cough, rhinorrhea/congestion, difficulty breathing, sore throat, chest pain, wheeze, sputum production, apnea.

<sup>g</sup> Includes vomiting, diarrhea, abdominal pain.

<sup>h</sup> Includes headache, seizure, loss of smell or taste, myalgia, arthralgia, drowsiness or lethargy, anorexia, oedema of extremities, irritability, conjunctivitis, skin rash, oral symptoms.



**eTable 6: Severe outcomes in SARS-CoV-2 negative and SARS-CoV-2 positive children, stratified by hospitalization status on day 0.**

	All children			Hospitalized on Day 0			Discharged on Day 0 <sup>a</sup>		
	SARS-CoV-2 status			SARS-CoV-2 status			SARS-CoV-2 status		
	Positive	Negative	P-Value	Positive	Negative	P-Value	Positive	Negative	P-Value
<b>All children</b>	107/3221 (3.3)	195/7156 (2.7)	0.09	95/685 (13.9)	182/1820 (10.0)	0.006	12/2510 (0.5)	13/5336 (0.2)	0.09
<b>Country</b>	0/28 (0)	2/61 (3.3)	>0.99	0/25 (0)	2/54 (3.7)	>0.99	0/3	0/7	-
Argentina									
Australia	-	0/199	-	-	0/70	-	-	0/129	-
Canada	2/532 (0.4)	20/2402 (0.8)	0.41	1/33 (3.0)	15/171 (8.8)	0.48	1/498 (0.2)	5/2227 (0.2)	>0.99
Costa Rica	19/420 (4.5)	13/516 (2.5)	0.09	19/127 (15.0)	13/118 (11.0)	0.36	0/293	0/398	-
Italy	0/18 (0)	0/3 (0)	-	0/12	0/1	-	0/6	0/2	-
New Zealand	-	0/106	-	-	0/14	-	-	0/92	-
Paraguay	2/35 (5.7)	3/21 (14.3)	0.35	2/12 (16.7)	3/13 (23.1)	>0.99	0/23	0/8	-
Singapore	0/30 (0)	0/40 (0)	-	0/30	0/5	-	-	0/35	-
Spain	3/152 (2.0)	6/259 (2.3)	>0.99	3/45 (6.7)	6/131 (4.6)	0.70	0/107	0/128	-
United States	81/2007 (4.0)	151/3553 (4.2)	0.70	70/401 (17.5)	143/1243 (11.5)	0.002	11/1606 (0.7)	8/2310 (0.4)	0.16

<sup>a</sup>Excludes 26 and 31 SARS-CoV-2 positive and negative children, respectively, who were lost to follow-up).

<sup>b</sup>Chronic condition information missing for 4 SARS-CoV-2 positive children and 12 SARS-CoV-2 negative children.

eFigure. Flow of SARS-CoV-2 negative study participants including outcomes and follow-up.

