

**Methods.** We performed a retrospective cohort study of overweight and obese (OW) children compared to underweight and normal weight (NW) children with severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) infection. Children between 2 and 18 years of age who were admitted to Texas Children's Hospital from April through December of 2020 with a positive SARS-CoV-2 polymerase chain reaction test were included. Asymptomatic patients undergoing surveillance testing for SARS-CoV-2 were excluded. Body mass index (BMI) was calculated using the Centers for Disease Control definition. Demographic and clinical information was obtained from the electronic medical record. Statistical analyses were performed using SAS 9.0.

**Results.** We identified 145 total children who met inclusion criteria. Fifty-five (38%) children were NW and 90 (62%) children were OW. Demographics and characteristics are shown (Figure 1). Underlying asthma or chronic lung disease was present in 13 (24%) vs 31 (34%) in the NW and OW groups respectively ( $P=0.17$ ). OW children were more likely to have pneumonia than NW children [relative risk 1.6 (CI 1.40-2.45)]. An elevated BMI was also associated with an increased risk of requiring oxygen [relative risk 1.4 (CI 1.03-1.96)]. The median length of hospitalization was 4 days for NW versus 5 days for OW children ( $P=0.6$ ). Admission to the Intensive Care Unit (ICU) was similar between the groups ( $P=0.7$ ). There was no significant difference in treatments administered to children in the two groups, although there was a trend towards increased steroid (29 (53%) vs 59 (67%),  $P=0.13$ ) and remdesivir (12 (22%) vs 30 (33%),  $P=0.14$ ) use in the OW children. Four children in each group died.

Characteristics of Hospitalized Children with SARS-CoV-2 Infection by Weight Category

Demographic or Characteristic	Underweight or Normal Weight N=55	Overweight or Obese N=90	P-value <sup>a</sup>
Sex, male	22 (40)	46 (51)	0.2
Race			0.2
American Indian and Alaskan Native	0 (0)	1 (1)	
Asian	2 (4)	0 (0)	
Black	9 (16)	22 (24)	
White	40 (73)	65 (72)	
Mixed Race	2 (4)	0 (0)	
Unavailable	2 (4)	2 (2)	
Ethnicity			0.5
Hispanic	30 (56)	56 (62)	
Non-Hispanic	24 (44)	34 (38)	
Age (median, Q1-Q3) years	10 (4-14)	13 (9-16)	0.005 <sup>b</sup>
Temperature $\geq 38^{\circ}\text{C}$	43 (78)	69 (77)	0.8
Pneumonia	18 (33)	47 (52)	0.02 <sup>a</sup>
Oxygen requirement above baseline	22 (40)	52 (58)	0.04 <sup>a</sup>
Highest oxygen requirement			0.07
NC	7 (13)	19 (21)	
High flow NC	4 (7)	12 (13)	
Noninvasive MV	4 (7)	10 (11)	
MV	6 (11)	17 (19)	
Other <sup>c</sup>	2 (4)	4 (4)	
Duration of intubation (median, Q1-Q3) days	16.5 (2-38)	9 (6-17)	0.9 <sup>b</sup>
ICU admission	36 (65)	56 (62)	0.7
Length of hospital stay (median, Q1-Q3) days	4 (3-8)	5 (2-11)	0.6
Classified as MIS-C	15 (27)	18 (20)	0.3
Pressor support	8 (15)	16 (18)	0.7
ECMO support	1 (2)	2 (2)	1
Lived	51 (93)	86 (96)	0.5

Abbreviations: ECMO, extracorporeal membrane oxygenation; ICU, intensive care unit; MIS-C, multisystem inflammatory syndrome in children; MV, mechanical ventilation; NC, nasal cannula <sup>a</sup>Denotes statistically significant P-value a. Calculated using chi-square or fisher exact unless otherwise noted. a. Calculated using chi-square or fisher exact unless otherwise noted. A P-value <0.05 was considered significant. b. Calculated using Wilcoxon rank sum test. c. Includes patients with home noninvasive MV (2) or tracheostomy and home MV(4).

**Conclusion.** For children admitted with symptomatic COVID-19, being overweight or obese was significantly associated with having pneumonia and with requiring oxygen. A difference in ICU admission, length of hospitalization, and mortality was not observed. Obesity prevention along with vaccination efforts may prevent COVID-19 related morbidity in this group.

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#### 482. SARS-CoV-2 Prevalence in Feces of Very Young Children, A Longitudinal Study

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**Session:** P-23. COVID-19 Special populations (e.g. pregnant women, children, immunocompromised, etc)

**Background.** Understanding the disease burden of SARS-CoV-2 in young children has been challenging as the majority are asymptomatic or experience mild

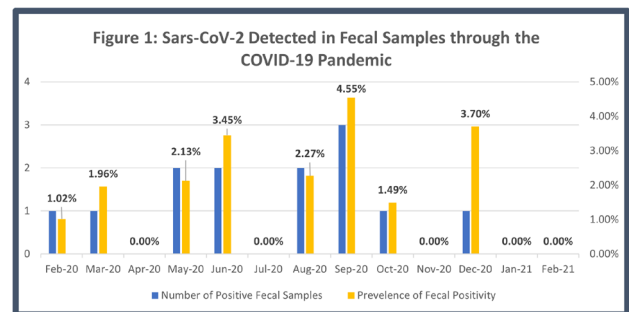
symptoms and were rarely tested. SARS-CoV-2 is traditionally detected through respiratory secretions but has also been reported in feces where shedding may continue for weeks after respiratory samples show resolution. We examined the prevalence of SARS-CoV-2 in already collected fecal samples from young children through the pandemic as well as associated demographic factors.

**Methods.** As part of an ongoing longitudinal microbiome study in Northern Virginia, serial stools samples were collected from infants before and throughout the Covid-19 pandemic. Reverse transcription quantitative-PCR detecting SARS-CoV-2 nucleocapsid gene in the N1 and N2 regions was performed. Penalized logistic regression models were developed to evaluate the association between fecal positivity and potential risk factors.

**Results.** The overall prevalence of SARS-CoV-2 in infant feces was 1.69% (13 samples) with a prevalence at delivery, 2, 6, 12 and 24 months of 0, 0, 2.56, 1.96, and 0.85% respectively. Fecal positivity was first detected 31 days before the reported first case of Covid-19 in Northern Virginia; prevalence rates peaked in September at 4.5% (Figure 1). Only one infant who tested positive was symptomatic with COVID-19 21 days before his stool was collected. Of the 13 positive samples, 8 reported Hispanic ethnicity and 7 reported an essential worker (Table 1). Penalized logistic regression model showed association between Hispanic ethnicity and testing positive (OR 5.04 (95% CI 1.7 - 15.0)) that remained after controlling for the presences of an essential worker (OR 4.7 (95% CI 1.6 - 14.0)).

**Table 1:** Characteristics of the study cohort compared among negative and positive Sars-CoV-2 cases

Characteristics	Negative (n=582)	Positive (n=13)	P-Value
Hispanic Ethnicity	23.4%	61.5%	0.006
Household Member Diagnosed with Sars-CoV-2	3.6%	0.0%	0.5
Childcare Outside of the Home During Quarantine	20.0%	16.7%	0.7
Symptomatic Infant, Sars-CoV-2 Untested	10.0%	0.0%	0.2
Household with Essential Worker During Quarantine	51.3%	58.3%	0.6



**Conclusion.** Prevalence of SARS-CoV-2 in infant stool correlated with the prevalence of COVID-19 during the pandemic, with higher rates in those of Hispanic ethnicity correlating with regional trends. Fecal positivity in asymptomatic infants even before quarantine restrictions supports the early but silent transmission of SARS-CoV-2. This study likely underestimates true prevalence rates as stool samples were stored without viral preservative. There are many socio-economic factors that predispose to disease while ethnicity may be a mediating or confounding factor

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#### 483. Disease Severity and Clinical Manifestations of SARS-CoV-2 Infection Among Infants Over the First Year of the Pandemic in Canada

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**Background.** There is limited data on outcomes of SARS-CoV-2 infection among infants (< 1 year of age). In the absence of any approved vaccines for infants, understanding the risk factors for hospitalization and severe disease from COVID-19 in this age group will help inform clinical management and targeted public health interventions. The objective of this study was to describe the clinical manifestations, disease severity, and risk factors for hospitalization among infants with SARS-CoV-2 infection in Canada.

**Methods.** This is a nationwide prospective observational study using the infrastructure of the Canadian Paediatric Surveillance Program. All cases of infants aged < 1 year of age with microbiologically confirmed SARS-CoV-2 infection were reported from April 8<sup>th</sup> 2020 to May 11<sup>th</sup> 2021, and classified by disease severity, and primary

