methods or culture from a sterile body site. The study was conducted via the 12 centres of the Canadian Immunization Monitoring Program, Active (IMPACT) network from January 1, 2016 – December 31, 2020.

RESULTS: During 2016-2020, a total of 105 pediatric (<20 years of age) and 145 adult IMD cases occurred. Serogroup B accounted for the greatest proportion of pediatric cases (N=58, 55.2%), followed by W (n=19, 18.1%) and Y (n=9, 8.6%) and C (n=2, 1.9%). Among adults, serogroup W accounted for the majority of cases (n=55, 38.0%), followed by Y (n=41, 28.3%), B (n=33, 22.8%) and C (n=7, 4.8%). The age distribution for serogroups covered by MCV programs has shifted to adults. The median age was 24.2 years (33.4 mean). Whereas the median age of serogroup B cases was 7.7 years (19.4 years mean) with 63.7% of cases occurring in children < 19 years of age and 46.2% in children 0-4 years of age.

A total of 20 people died from meningococcal infections in 2016–2020. Five deaths were in children, four from serogroup B and one from serogroup W. Fifteen deaths were in adults, one from serogroup B, eight from serogroup W, three from serogroup Y, and three from Non-typeable/Other/Unknown serogroups.

CONCLUSION: Serogroup B, which is not covered by MCV programs, still accounts for the majority of pediatric IMD. Serogroup C has been controlled and rarely causes pediatric infection. With the implementation of MCV programs in children and adolescents, the median and mean age at infection has increased across all serogroups, except serogroup B. Serogroup W is still causing IMD among pediatric age groups.

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CLINICAL MANIFESTATIONS AND DISEASE SEVERITY OF SARS-COV-2 INFECTION AMONG INFANTS IN CANADA

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BACKGROUND: There are limited data on outcomes of SARS-CoV-2 infection among infants (<1 year of age). In the absence of approved vaccines for infants, understanding characteristics associated with hospitalization and severe disease from COVID-19 in this age group will help inform clinical management and public health interventions.

OBJECTIVES: The objective of this study was to describe the clinical manifestations, disease severity, and characteristics associated with hospitalization among infants infected with the initial strains of SARS-CoV-2.

DESIGN/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 8th 2020 to May 31st 2021, and were classified by disease severity and primary cause of hospitalization. Multivariable logistic regression was performed to identify infants' characteristics associated with hospitalization.

RESULTS: A total of 531 cases were reported, including 332 (62.5%) non-hospitalized and 199 (37.5%) hospitalized infants. Among hospitalized infants, 141 of 199 infants (70.9%) were admitted because of COVID-19-related illness, and 58 (29.1%) were admitted for reasons other than acute COVID-19. Amongst all cases with SARS-CoV-2 infection, the most common presenting symptoms included fever (66.5%), coryza (47.1%), cough (37.3%) and decreased oral intake (25.0%). In our main analysis, infants with a comorbid condition had higher odds of hospitalization compared to infants with no comorbid conditions, and infants <1 month had higher odds of hospitalization than infants aged 1-3 months (Table). In total, 20 infants (3.8%) met criteria for severe disease.

CONCLUSION: We describe one of the largest cohorts of infants with SARS-CoV-2 infection. Overall, severe COVID-19 in this age group is uncommon with most infants having mild disease. Comorbid conditions and younger age were associated with COVID-19-related hospitalization amongst infants.

Table. Logistic regression analysis of infants' characteristics associated with COVID-19 hospital admission

Characteristics, n (%ₜₒₜₐₗ)	Crude model		Adjusted model[1]		VOC adjusted model[2]	
	OR (95% CI)	P value	aOR (95% CI)	P value	aOR (95% CI)	P value
Infant age						
0–<1 month	3.59 (1.93–6.68)	<0.001	3.78 (1.97–7.26)	<0.001	3.47 (1.42–8.52)	0.007
1–3 months	1 [Reference]	NA	1 [Reference]	NA	1 [Reference]	NA
4–6 months	0.33 (0.18–0.60)	<0.001	0.24 (0.12–0.47)	<0.001	0.30 (0.12–0.78)	0.01
7–12 months	0.17 (0.09–0.31)	<0.001	0.13 (0.06–0.25)	<0.001	0.12 (0.05–0.34)	<0.001
Infant sex						
Female	1 [Reference]	NA	1 [Reference]	NA	---	---
Male	1.24 (0.83–1.86)	0.28	1.14 (0.71–1.84)	0.58	---	---
Gestational age at birth						
Term (≥37 weeks')	1 [Reference]	NA	1 [Reference]	NA	---	---
Late preterm (34–<37 weeks')	1.56 (0.62–3.92)	0.34	1.25 (0.42–3.72)	0.69	---	---
Moderate/very preterm (<34 weeks')	2.61 (1.03–6.58)	0.04	3.54 (1.19–10.46)	0.02	---	---
Comorbid conditions						
None/Unknown	1 [Reference]	NA	1 [Reference]	NA	1 [Reference]	NA
≥1 comorbid condition	1.97 (1.03–3.77)	0.04	4.53 (2.06–9.97)	<0.001	7.98 (2.74–23.29)	<0.001
Phase of COVID-19 pandemic						
1st wave (April–August 2020)	1 [Reference]	NA	1 [Reference]	NA	---	---
2nd wave (September 2020–February 2021)	1.20 (0.65–2.19)	0.56	1.37 (0.68–2.75)	0.38	---	---
3rd wave (March–May 2021)	1.16 (0.61–2.20)	0.64	1.57 (0.74–3.31)	0.24	---	---
Variant of concern						
Not a confirmed VOC[3]	1 [Reference]	NA	---	---	1 [Reference]	NA
Confirmed VOC	0.81 (0.37–1.76)	0.59	---	---	0.63 (0.27–1.48)	0.29

aOR = Adjusted odds ratio; OR = Odds ratio; VOC = variant of concern.

[1]Multivariable analysis was conducted among 440 complete cases, and excludes 58 non-COVID-19-related hospitalizations.

[2]Multivariable analysis conducted among 268 complete cases reported from the Centre Hospitalier Universitaire Sainte-Justine, Hospital for Sick Children, or Montreal Children's Hospital and occurring on or after September 1, 2020. Excludes 25 patients hospitalized for reasons other than COVID-19. Given a smaller available sample size, VOC status was forced into the multivariable model and other covariates were selected on the basis of p-values until an events-per-variable ratio of 1:10 was reached to avoid overfitting.

[3]Cases occurring before December 26, 2020 (i.e. first case of confirmed Alpha in Canada) were assumed as 'not a confirmed VOC'. Cases with no VOC screening and occurring on or after December 26, 2020 (n=119) were also assumed as 'not a confirmed VOC'. Excluding the latter cases from the multivariable analysis did not meaningfully change the aOR (0.62; 95% CI 0.24–1.66).

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UNDERSTANDING ASYMPTOMATIC TESTING UPTAKE AMONGST SCHOOL AGED CHILDREN AND STAFF FOR SARS-COV-2 TESTING IN ELEMENTARY AND SECONDARY SCHOOLS

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BACKGROUND: Enhanced health and safety measures, such as symptom screening, physical distancing, cohorting, masking, and asymptomatic testing for children have been introduced into schools to prevent SARS-CoV-2 transmission. Although asymptomatic testing has been considered a measure to reduce in-school transmission, it has not been broadly implemented or evaluated. To address this, a pilot project with public health, school boards, and hospital-based testing partners was established to assess the feasibility of offering on-site and low barrier SARS-CoV-2 polymerase chain reaction (PCR) testing across schools in the Toronto region.

OBJECTIVES: The primary objective of this study was to assess the feasibility of offering on-site and low barrier PCR asymptomatic testing across schools in the Toronto region.

DESIGN/METHODS: A six-week testing pilot across the Greater Toronto Area took place. Schools were selected to participate in expanded testing to determine case prevalence in high-risk settings of school-based SARS-CoV-2. Students and staff were excluded if they had tested positive for COVID-19 in the last 3 months. Different testing opportunities were offered based on the testing partner and school preference including location and modality. Descriptive methods were used to assess the uptake of testing and case positivity by individuals recommended to be tested.

RESULTS: Eighteen schools participated in the pilot testing. All students and staff were invited to participate in asymptomatic testing. Testing was offered to 9282 students and 1000 staff, and testing uptake was 29% (2729 students) and 54% (544 staff), respectively. Forty-eight percent of tests (1645) were oral nasal tests, 18% (622) were NP swab tests and 33% (1120) were saliva tests. Of the saliva tests, 52% (590) were on-site saliva tests and 48% (530) were take-home saliva kits. The staff and student positivity rate for on-site testing was 1.9% and 4.9% for tests completed at the COVID-19 Assessment Center at SickKids.

CONCLUSION: Results from this pilot project demonstrate that on-site PCR testing uptake remained low despite offering in-school testing, specialized support, and reduced barriers by using non-invasive testing with the use of saliva/oral nasal/PCR testing kits. Results highlight the challenges of asymptomatic testing and the balance of resource utilization for low case counts. Future studies should examine alternate means of symptomatic testing.