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: Site Methodology

Site	Site-Specific Methodology
British Columbia	SARS-CoV-2 PCR positive cases were identified by public health and as part of contract tracing, each case of appropriate age and sex were asked if they are pregnant. This information was securely transferred to the British Columbia based Coordinating Centre from the British Columbia Centre for Disease Control. Clinical data was abstracted from relevant clinical charts and hospital records. Data was then entered directly into a Research Electronic Data Capture (REDCap) database.[a] All data capture was conducted as part of public health surveillance.
Alberta	SARS-CoV-2 PCR positive cases were identified by public health. Pregnancy data was abstracted, with a waiver of consent, from relevant clinical charts and hospital records and verified using provincial administrative data sources, which become available at the end of every month. Data were then entered into a REDCap database.
Manitoba	Two methods were used to access comprehensive data. SARS-CoV-2 PCR positive cases identified as being pregnant were retrospectively abstracted from hospital records at time of delivery and entered directly into a REDCap database. Additionally, SARS-CoV-2 PCR positive cases were prospectively reported to the local investigator by obstetrical residents and other health care providers in the community. Once identified, oral consent was obtained by the clinician for the potential participant to be contacted by the research team for consent to a telephone interview and medical chart review. Data was entered into a REDCap database.
Quebec	Nine centres were reviewing medical charts to collect data on pregnant persons who tested positive for SARS-CoV-2 anytime during pregnancy: CHU-Sherbrooke, CHU-Laval, McGill University Health Centre, Jewish General Hospital, Hôpital Maisonneuve-Rosemont, CHU-Université de Montréal, Hôpital Sacré-Coeur, Cité-de-le-Santé de Laval, and CHU Sainte-Justine (CHUSJ). In each centre, a clinical team reports SARS-CoV-2 PCR positive pregnant cases to the local investigator. Each local investigator also queries his/her laboratory system to identify persons of childbearing age with SARS-COV-2 PCR positive test results. The Quebec Coordinating Centre (CHUSJ) receives the data from each of the aforementioned centres. Once cases are identified, data from medical chart review are entered into a REDCap database.
Ontario	Pregnancy outcome data is routinely captured for the entire province within the established BORN Ontario system (www.bornontario.ca), established pre-pandemic. Pregnancy cases were linked to laboratory confirmed cases of SARS-CoV-2 infection. An additional 'COVID-19 module' was added to the data collection system for BORN data abstractors. These data abstractors then obtained specific information on the COVID-19 event in addition to all of the pregnancy and infant outcome data routinely collected. Records that cannot be linked using deterministic linkage are then linked using probabilistic linkage using weighted probability scores for personal identifiers including: name,

	date of birth, health card number, chart number, and address.
Atlantic provinces (New Brunswick, Newfoundland and Labrador, Nova Scotia, Prince Edward Island)	Reporting of cases of SARS-CoV-2 were limited to case numbers in all provinces aside from Nova Scotia. Data from Nova Scotia were then entered into a REDCap database. Due to privacy requirements related to very small populations in this region and geographic proximity, cases in the Atlantic provinces were planned to potentially be bundled together for analyses and reporting purposes when required.
Territories (Yukon, Northwest Territories, Nunavut)	Reporting of cases of SARS-CoV-2 were limited to case numbers, but logistics and approval limitations did not permit further data collection. Due to privacy requirements related to small numbers, cases in these sites have been bundled (Yukon with British Columbia, Northwest Territories with Alberta, and Nunavut with Manitoba) for reporting purposes.

[a] All provinces, other than Ontario, are utilizing the same REDCap data dictionary for data abstraction. The REDCap database was aligned with the variables available in the BORN Ontario dataset to optimize homogeneity of data elements.

eTable 2: Ethnicity of SARS-CoV-2 Affected Pregnancies in Canada (CANCOVID-Preg) Compared to Ethnicity of All Females Aged 15-49 in Canada (Statistics Canada)

	CANCOVID-Preg	Statistics Canada	p-value[1]
African/Caribbean/Black	12.1%	2.2%	<0.001
East or South East Asian	8.3%	4.8%	<0.001
Other	23.4%	9.3%	<0.001
South Asian	18.4%	3.4%	<0.001
White	37.8%	80.4%	<0.001

[1] p-values from binomial tests.

eTable 3: Results of Multiple Imputation for Missing Data Using Case-Level Data From British Columbia, Manitoba, Ontario, Quebec, and Nova Scotia

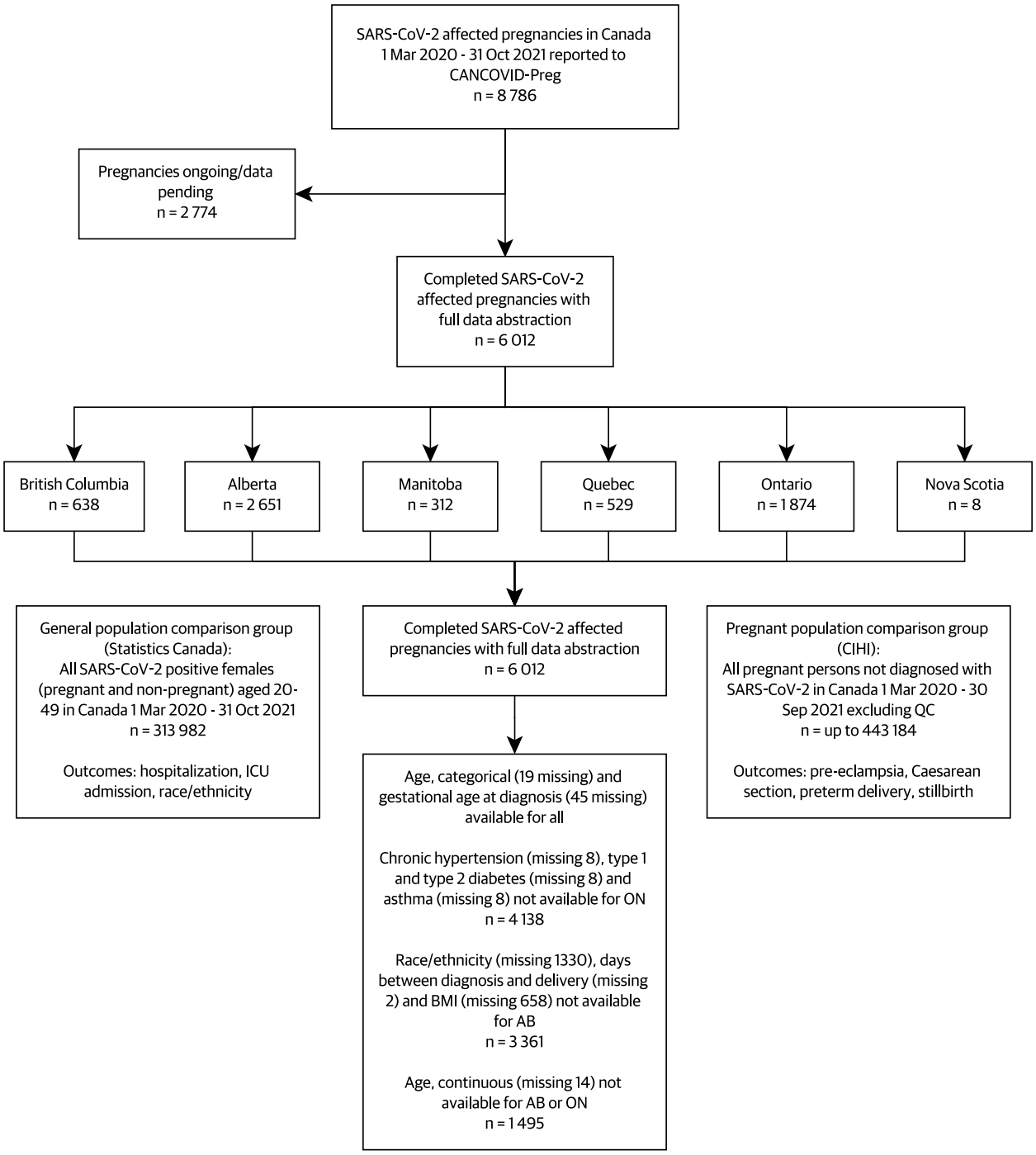
Multiple imputation was done via chained equations using the 'mice'[a] package in R using 25 iterations and 5 imputations. All variables used in the analyses, including outcome variables, were used in the multiple imputation models. Categorical variables were imputed using polytomous logistic regression (polyreg) for those with more than two categories, and logistic regression (logreg) for those with two categories. Continuous variables were imputed using predictive mean matching (pmm). Shown are both the original complete-case estimates as well as the estimates from the imputations for comparison.

	Hospitalization		**ICU admission**		**O2 therapy**	
	RR (95%C) – non-imputed	**RR (95%C) – imputed**	**RR (95%C) – non-imputed**	**RR (95%C) – imputed**	**RR (95%C) – non-imputed**	**RR (95%C) – imputed**
Age (years)						
<30	reference	reference	reference	reference	reference	reference
30-35 years	1.25 (1.02-1.53)	1.31 (1.00-1.70)	1.72 (1.11-2.70)	1.77 (1.05-2.98)	1.59 (1.19-2.25)	1.75 (1.06-2.87)
≥36 years	1.42 (1.12-1.80)	1.54 (1.12-2.10)	2.28 (1.41-3.72)	2.34 (1.30-4.22)	2.07 (1.37-2.71)	2.49 (1.45-4.27)
BMI (kg/m^2)						
<25	reference	reference	reference	reference	reference	reference
25-29	1.26 (0.90-1.76)	1.26 (0.93-1.71)	1.87 (0.96-3.69)	1.80 (0.98-3.31)	1.75 (0.96-3.20)	1.59 (0.96-2.62)
≥30	1.89 (1.38-2.58)	1.95 (1.48-2.55)	3.26 (1.79-6.15)	3.16 (1.70-5.88)	2.15 (1.19-3.92)	1.94 (1.14-3.32)
Hypertension (pre-pregnancy)						
No	reference	reference	reference	reference	reference	reference
Yes	2.36 (1.54-3.40)	2.11 (1.19-3.75)	3.49 (1.72-6.34)	2.70 (1.18-6.15)	3.40 (2.04-5.35)	2.57 (1.28-5.18)
Diabetes (Type 1&2)						
No	reference	reference	reference	reference	reference	reference
Yes	2.12 (1.27-3.25)	2.91 (1.41-6.03)	2.78 (0.99-6.05)	1.05 (0.15-7.46)	2.72 (1.43-4.70)	4.12 (1.78-9.55)
Asthma						
No	reference	reference	reference	reference	reference	reference
Yes	1.86 (1.17-2.76)	1.30 (0.71-2.39)	1.98 (0.84-3.95)	1.58 (0.64-3.88)	2.12 (1.14-3.58)	1.29 (0.58-2.90)
Gestational age at diagnosis (weeks)						
≤14 weeks	0.30 (0.17-0.48)	0.26 (0.13-0.51)	0.17 (0.03-0.56)	0.19 (0.05-0.80)	0.19 (0.06-0.47)	0.09 (0.01-0.64)
15-27 weeks	reference	reference	reference	reference	reference	reference
≥28 weeks	2.44 (1.98-3.03)	1.75 (1.35-2.26)	2.76 (1.79-4.41)	1.77 (1.10-2.85)	2.98 (2.13-4.27)	1.79 (1.13-2.81)
Race/ethnicity						
African/Caribbean/Black	2.45 (1.52-3.89)	2.40 (1.52-3.80)	1.12 (0.36-2.99)	1.26 (0.37-4.21)	0.97 (0.34-2.48)	1.45 (0.61-3.43)
East or SE Asian	2.45 (1.43-4.07)	2.18 (1.24-3.83)	3.16 (1.32-7.24)	2.73 (1.35-5.52)	4.57 (2.09-9.95)	4.10 (2.18-7.73)
Hispanic/Latinx	2.28 (1.10-4.24)	2.11 (0.95-4.67)	0.62 (0.03-3.08)	0.57 (0.11-3.05)	2.09 (0.59-5.82)	2.40 (0.84-6.85)
Middle East	2.43 (1.37-	2.31 (1.43-	2.48 (0.88-	2.48 (1.14-	1.60 (0.45-	1.29 (0.46-

	4.12)	3.71)	6.16)	5.38)	4.48)	3.65)
Other (including Indigenous)	1.55 (0.88-2.64)	1.54 (0.97-2.42)	1.76 (0.69-4.42)	2.05 (1.08-3.91)	1.52 (0.64-3.49)	2.12 (1.13-3.97)
South Asian	1.00 (0.56-1.70)	0.96 (0.61-1.51)	0.63 (0.18-1.80)	0.61 (0.24-1.53)	0.86 (0.27-2.35)	0.83 (0.31-2.27)
White	reference	reference	reference	reference	reference	reference

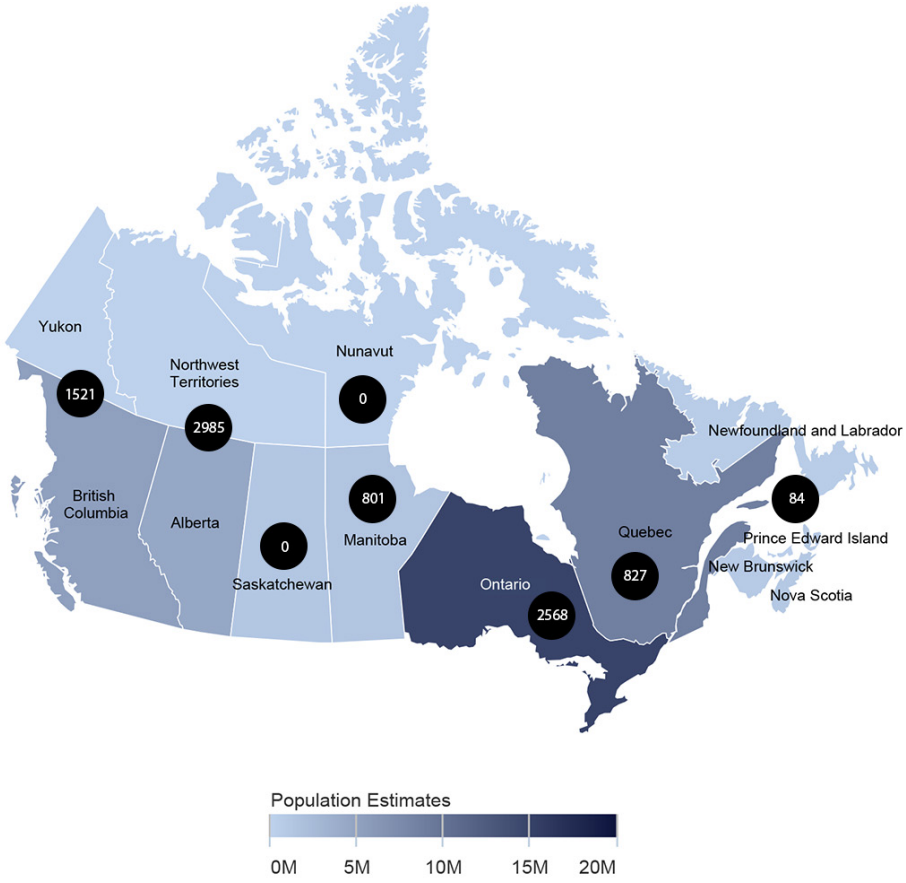
a Stef van Buuren, Karin Groothuis-Oudshoorn (2011). mice: Multivariate Imputation by Chained Equations in R. Journal of Statistical Software, 45(3), 1-67. DOI 10.18637/jss.v045.i03.

eFigure 1: Flow Chart of CANCOVID-Preg Cases and Comparator Groups



eFigure 2: SARS-CoV-2 Affected Pregnancies in Canada From April 1, 2020 to October 31, 2021 Reported to CANCOVID-Preg

The Atlantic provinces (Newfoundland and Labrador, Prince Edward Island, New Brunswick, and Nova Scotia) have been bundled in order to fulfill privacy requirements. The Yukon has been bundled with British Columbia and Northwest Territories bundled with Alberta in order to fulfill privacy requirements. Saskatchewan has been unable to report the number of cases that have occurred in pregnancy.



eFigure 3: Bivariable Log-Binomial Model of Relative Risks for Oxygen Therapy

RR and 95% CI from mixed effects log-binomial regressions with province as a random effect.

	No O2 therapy No. (%)	O2 therapy No. (%)	Absolute Risk Difference (95%CI)	Relative Risk (95%CI)
Age, y				
<30	2,362 (97.64%)	57 (2.36%)	reference	reference
30-35	2,293 (96.30%)	88 (3.70%)	1.3 (0.4-2.3)	1.59 (1.15-2.22)
≥36	1,132 (94.89%)	61 (5.11%)	2.8 (1.4-4.1)	2.07 (1.45-2.95)
BMI, kg/m2				
<25	1,263 (98.44%)	20 (1.56%)	reference	reference
25-30	742 (97.12%)	22 (2.88%)	1.3 (0-2.7)	2.15 (1.19-3.92)
≥30	633 (96.49%)	23 (3.51%)	1.9 (0.4-3.5)	1.75 (0.96-3.2)
Pre-existing hypertension				
No	5,586 (96.81%)	184 (3.19%)	reference	reference
Yes	212 (90.60%)	22 (9.40%)	6.2 (2.4-10)	3.4 (2.04-5.35)
Diabetes Type 1 or 2				
No	5,551 (96.74%)	187 (3.26%)	reference	reference
Yes	247 (92.86%)	19 (7.14%)	3.9 (0.8-7)	2.72 (1.43-4.7)
Asthma				
No	3,817 (95.83%)	166 (4.17%)	reference	reference
Yes	134 (91.16%)	13 (8.84%)	4.7 (0-9.3)	2.12 (1.14-3.58)
Gestational age at diagnosis, weeks				
≤14	1,076 (99.63%)	4 (0.37%)	-1.5 (-2.2--0.8)	0.19 (0.06-0.47)
14-27	2,045 (98.13%)	39 (1.87%)	reference	reference
≥28	2,641 (94.22%)	162 (5.78%)	3.9 (2.9-4.9)	2.98 (2.13-4.27)
Race/Ethnicity				
African/Carribean/Black	239 (97.55%)	6 (2.45%)	0.6 (-1.5-2.8)	0.97 (0.34-2.48)
East or SE Asian	156 (92.31%)	13 (7.69%)	5.9 (1.7-10)	4.57 (2.09-9.95)
Hispanic/Latinx	87 (95.60%)	4 (4.40%)	2.6 (-1.7-6.9)	2.08 (0.59-5.82)
Middle East	141 (97.24%)	4 (2.76%)	0.9 (-1.9-3.8)	1.52 (0.64-3.49)
Other	230 (95.83%)	10 (4.17%)	2.3 (-0.4-5)	1.6 (0.45-4.48)
South Asian	369 (98.66%)	5 (1.34%)	-0.5 (-2-1)	0.86 (0.27-2.35)
White	753 (98.17%)	14 (1.83%)	reference	reference