

Supplemental Table 1. The final multivariable model for testing positive for COVID-19 infection, compared to a model with standard errors adjusted for clustering by departure country (N = 9,310)

Characteristic	Standard errors not adjusted for clustering by departure country		Standard errors adjusted for clustering by departure country	
	OR (95% CI)	z statistic	OR (95% CI)	z statistic
Age, years				
5-17	1.12 (0.47 – 2.63)	0.25	1.12 (0.36 – 3.46)	0.19
18-34	1.64 (0.93 – 2.87)*	1.71	1.64 (0.96 – 2.78)*	1.82
35-49	2.08 (1.20 – 3.62)***	2.59	2.08 (1.33 – 3.25)***	3.20
50-64	1.10 (0.63 – 1.93)	0.33	1.10 (0.73 – 1.66)	0.45
≥65	Referent	--	Referent	--
Country of residence				
Canada	2.21 (1.39 – 3.51)***	3.35	2.21 (1.72 – 2.83)***	6.27
All others	Referent	--	Referent	--
Departure country smoothed positivity				
≤0.2	Referent	--	Referent	--
>0.2	3.30 (1.68 – 6.46)***	3.47	3.30 (2.19 – 4.95)***	5.74
Unknown	3.82 (1.61 – 9.05)***	3.04	3.82 (2.48 – 5.88)***	6.08
Departure country 14-day notification rate per 100,000				
≤200	Referent	--	Referent	--
>200	2.62 (1.30 – 5.31)***	2.68	2.62 (1.71 – 4.02)***	4.43

Smoothed positivity rate refers to the proportion of within-country COVID-19 tests reported as positive, averaged over 7 days for the departure country. Notification rate refers to the 14-day rate of within-country COVID-19 infection per 100,000 population. Positivity and notification rate were based on data from ourworldindata.org for the departure country, assessed at the arrival date. The unknown category for notification rate was dropped from the models because of collinearity with the unknown category for the positivity rate.

*, ** and *** indicate statistical significance at the 0.1, 0.05 and 0.01 level, respectively.

The equation for the final logistic regression model was:

$\text{Log}(\text{odds}(\text{positive test})) = B_0 + B_1 * X_1 + B_2 * X_2 + B_3 * X_3 + B_4 * X_4$ where:

- B_0 is a constant (= -6.704).
- B_1 to B_4 are the coefficients for variables X_1 to X_4 , given by the natural logarithms of the odds ratios provided in Table 3. Because some of the X_i variables below are multi-category variables, there may be more than one coefficient corresponding to that variable.
- X_1 represents age category (5-17, 18-34, 35-49, 50-64, ≥65 (referent))
- X_2 represents Sex (male, female (referent))
- X_3 represents the 3-category variable for 14-day smoothed positivity in the departure country on the arrival date [≥0.2, <0.2 (referent), unknown]
- X_4 represents the 14-day case rate in the departure country on the arrival date (≤200 = referent; >200 = 1; unknown category was identical to the unknown category for X_3 and was therefore dropped from the model because of collinearity).

Supplemental Table 2. The effect of stratification by sex on the final logistic regression model

Characteristic	Females (N = 4,392) OR (95% CI)	Males (N = 4,918) OR (95% CI)
Age, years		
5-17	1.04 (0.25 – 4.41)	1.27 (0.43 – 3.73)
18-34	1.86 (0.70 – 4.93)	1.64 (0.82 – 3.30)
35-49	3.05 (1.18 – 7.90)	1.64 (0.82 – 3.29)
50-64	1.41 (0.54 – 3.72)	0.99 (0.49 – 2.00)
≥65	Referent	Referent
Country of residence		
Canada	1.73 (0.92 – 3.25)	2.86 (1.43 – 5.73)
All others	Referent	Referent
Departure country smoothed positivity		
≤0.2	Referent	Referent
>0.2	4.71 (1.82 – 12.22)	2.38 (0.91 – 6.21)
Unknown	2.76 (0.71 – 10.66)	4.68 (1.47 – 14.92)
Departure country 14-day notification rate per 100,000		
≤200	Referent	Referent
>200	2.99 (1.10 – 8.14)	2.38 (0.88 – 6.45)

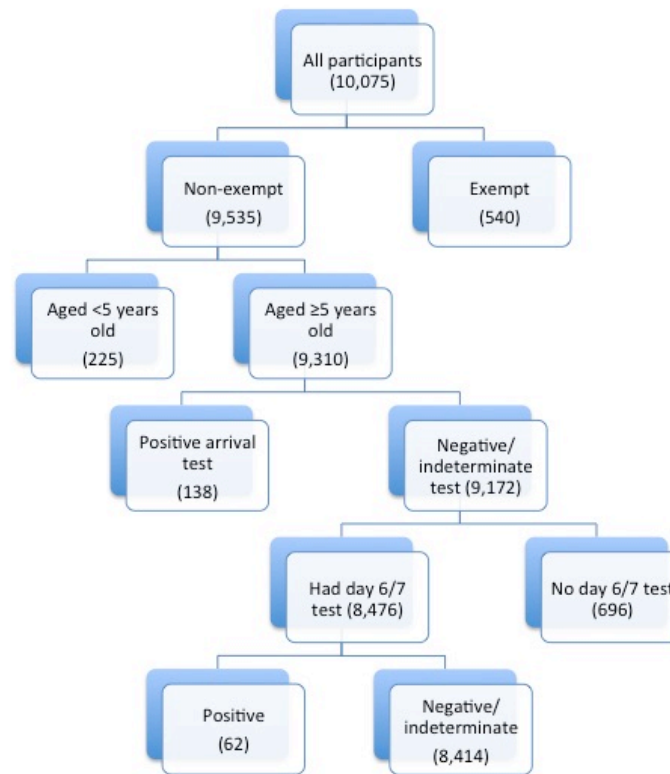
Smoothed positivity rate refers to the proportion of within-country COVID-19 tests reported as positive, averaged over 7 days for the departure country. Notification rate refers to the 14-day rate of within-country COVID-19 infection per 100,000 population. Positivity and notification rate were based on data from ourworldindata.org for the departure country, assessed at the arrival date. The unknown category for notification rate was dropped from the models because of collinearity with the unknown category for the positivity rate.

Supplemental Table 3. The effect of stratification by age group on the final logistic regression model

Characteristic	<50 years of age (N = 5,071) OR (95% CI)	≥50 years of age (N = 4,239) OR (95% CI)
Age, years		
5-17	1.44 (0.68 – 3.04)	--
18-34	1.85 (0.88 – 3.89)	--
35-49	Referent	--
50-64	--	1.09 (0.62 – 1.92)
≥65	--	Referent
Country of residence		
Canada	2.44 (1.41 – 4.22)	1.85 (0.78 – 4.38)
All others	Referent	Referent
Departure country smoothed positivity		
≤0.2	Referent	Referent
>0.2	2.12 (0.90 – 5.00)	7.32 (2.63 – 20.4)
Unknown	2.35 (0.81 – 6.87)	10.16 (2.54 – 40.7)
Departure country 14-day notification rate per 100,000		
≤200	Referent	Referent
>200	1.99 (0.82 – 4.82)	4.48 (1.50 – 13.4)

Smoothed positivity rate refers to the proportion of within-country COVID-19 tests reported as positive, averaged over 7 days for the departure country. Notification rate refers to the 14-day rate of within-country COVID-19 infection per 100,000 population. Positivity and notification rate were based on data from ourworldindata.org for the departure country, assessed at the arrival date. The unknown category for notification rate was dropped from the models because of collinearity with the unknown category for the positivity rate.

Supplemental Figure 1. Flow diagram of participants in the Alberta Border Testing Pilot Program (ABTPP), by test result.



Note: The 10,075 participants refer to those ≥5 years of age and tested for COVID-19 at arrival OR <5 years of age and accompanied by another participant who was tested at arrival.