Method:

To obtain an estimate of the number of COVID-19 infected travellers entering each Canadian province each day, three datasets are used:

* Estimated monthly totals of international travellers arriving in each province, from January-April 2020. These totals include Canadian residents and non-Canadian residents and differentiate between travellers from the United States and those not from the United States. This dataset is sourced from Statistics Canada.
* Estimated monthly totals of non-residents entering each province from each country, from January-April 2020. This dataset does not include Canadian residents returning from abroad and is sourced from Statistics Canada.
* An estimate of daily total active cases of COVID-19 in each country. This dataset is derived from Our World in Data, which provides daily new cases. Daily active cases are then calculated as the sum of new cases over the previous two weeks.

The daily number of non-US originating travellers travelling into each province is calculated using a given month, country of origin, and destination province. With this information, the daily number of travellers is calculated by dividing the total number of non-US originating travellers arriving in the given province in the given month by the number of days in the given month, then multiplying this number by the fraction of total non-resident travellers arriving in the given province in the given month that originate from the given country of origin. However, on March 18th severe travel restrictions were placed on non-US and non-Canadian residents travelling into Canada, so from March 18th-31st the daily number of travellers from all countries into all provinces is set the same as April, and the daily rate of travellers from March 1st-17th is scaled up to provide the same total number of travellers into the given province in the month of March from the given country as originally estimated.

For United States originating travellers, the daily number of travellers arriving into each Canadian province is similarly calculated using a given month and destination province. The daily number of travelers is then calculated by dividing the total number of US originating travellers travelling to the given province in the given month by the number of days in the given month. On March 21st, severe travel restrictions were placed on US originating travellers travelling to Canada, so from March 21st-31st the daily number of travellers from the United States into all provinces is set the same as April, and the daily rate of travellers from March 1st-20th is scaled up to provide the same total number of travellers into the given province in the month of March from the given country as originally estimated.

To calculate an estimate for the number of COVID-19 infected travellers arriving in each province from each country on each day consists of two steps. First, an estimate of the fraction of travellers from each country on each day infected with COVID-19 is calculated by dividing the number of active cases in each country by the population of each country. Then, this fraction is multiplied by the previously estimated number of travellers from each country into each province.

References

Our World in Data. (2020). Coronavirus Source Data [Data file]. Retrieved from: http://ourworldindata.org/coronavirus-source-data  
  
Statistics Canada. Table 24-10-0041-02 International trips to Canada

Statistics Canada. Table 24-10-0003-01 Non-resident travellers entering Canada, by country of residence (excluding the United States)