Trend report SOP

# Description

This SOP describes the set-up and execution for generating the daily trend report.

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# What you need:

* R studio
* Github account / Github desktop
* Access to metabase
* Access to Y: drive
* Access to SALT
* Access to onedrive repository

# Setup

## Downloading Rstudio:

## Installing packages:

To install a package – run “install.packages(“package\_name”).

Additionally, two other packages can’t be installed using “install.packages()”.

1. Metabaser: see here for more info on installing metabaser: <https://discover.hres.ca/wiki/index.php?title=Request_Metabase_or_GitLab_Access>
2. PHACTrendR: first install the devtools package “install.packages(“devtools”)”, then run the following command: devtools::install\_github(“Michael-Elten/PHACTrendR”)

# Running the report

## Generating the powerpoint

To generate the trend report, you must ensure that the working directory is set to hpoc\_daily\_trend, and then run the following function: `PHACTrendR::generate\_trend\_report()`. The created powerpoint will be located in the hpoc\_daily\_trend folder, and then CPHO table will be located in the “output” subfolder.

## Formatting tasks

Currently, some touch-ups to the final trend report must be done:

* Moving the summary bullets slide from the very end to slide 2, and setting spacing of paragraphs to 0
* Centering the cases/deaths table (slide 3)
* Centering the hosp/ICU table (slide X)

## Chief Science report

On Thursdays only, the “Chief Science Report” must be generated as well. This is a subset of the trend report. It can be generated using the PHACTrendR::generate\_Nemer\_report() function (make sure the working directory is set to the hpoc\_daily\_trend folder.

# Troubleshooting

It may happen that for whatever reason, the code does not work. Don’t panic! First thing that should be done is to verify the data sources infobase, hosp/icu google sheet, etc. to ensure that data is entered as expected.

1. Blanks in hosp/icu table
2. Error generating report (it is open locally)

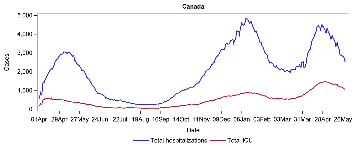
# Weekly report (Tuesday before 12pm)

* Trend epis contribute to the Weekly Epi Summary Report by producing, analyzing, and intepreting certain plots.
* Data cut off is always Saturday.
* Must include both English and French plots.
* Some parts of the weekly report can be done on Mondays (hosp, icu, and international plots).
* The rest will have to be completed on Tuesday (usually before 12pm).
* Codes are currently written **mostly in SAS (one code is in R).**
* Codes for the weekly report are located here: Y:\PHAC\IDPCB\CIRID\VIPS-SAR\EMERGENCY PREPAREDNESS AND RESPONSE HC4\EMERGENCY EVENT\WUHAN UNKNOWN PNEU - 2020\EPI SUMMARY\Trend analysis\\_Current\Weekly Epi Report

## Data sources for the weekly report:

* DISCOVER trend extract
* SALT
* COVID\_CaseDeath\_7MA.csv (webscraped data)
* Hosp\_icu\_historical\_data.csv (webscraped data)
* OurWorldinData

## Steps on Monday: (start the weekly report)

1. Go to this file path and copy the most recent weekly report document onto your local computer: Y:\PHAC\IDPCB\CIRID\VIPS-SAR\EMERGENCY PREPAREDNESS AND RESPONSE HC4\EMERGENCY EVENT\WUHAN UNKNOWN PNEU - 2020\EPI SUMMARY\Trend analysis\\_Current\\_Reporting\Weekly Epi Summary
2. 
   1. Data source: Hosp\_icu\_historical\_data.csv (webscraped data)
      1. Located here: Y:\PHAC\IDPCB\CIRID\VIPS-SAR\EMERGENCY PREPAREDNESS AND RESPONSE HC4\EMERGENCY EVENT\WUHAN UNKNOWN PNEU - 2020\EPI SUMMARY\Trend analysis\Case count data
   2. To get this plot, open the “FPT Hosp and ICU\_weekly\_v2.sas” file in the file path mentioned above using SAS.
   3. Once the code is opened in SAS, change the cut off date (on line 2) to the Saturday cut off date. Change the “Tomorrow” date to the Sunday date.
   4. Highlight the entire code and click on the “Run” icon.
   5. Look in the “Log” tab in SAS and make sure there are no red errors in the code.
   6. If everything ran correctly, the two plots (ENG and FR) will be outputted. Check the log to see where they are outputted.
   7. Copy and paste these plots into the weekly report doc and update the interpretation piece.
   8. Change the dates at the bottom of the SAS code to update the interpretation piece (see below).

**proc** **print** data=hosp\_icu2;

where jurisdiction = "Canada" and date >= **'23may2021'd**;

**run**;

**proc** **print** data=hosp\_icu2;

where jurisdiction = "Canada" and date >= **'01apr2020'd**;

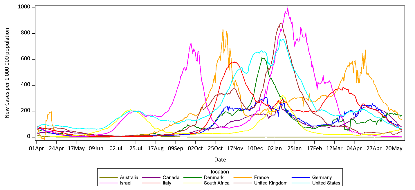
var jurisdiction date icu icu7ma;

**run**;

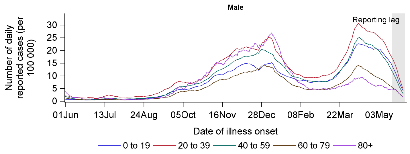
**proc** **print** data=hosp\_icu2;

where date = **'29may2021'd**;

**run**;

1. 
   1. Data source: OurWorldinData
   2. You must first download the data manually before running the SAS code. Copy the following link to Google Chrome and it will automatically download the latest data: <https://covid.ourworldindata.org/data/owid-covid-data.csv>
   3. Open the downloaded data and save it as “International.csv” in this path: Y:\PHAC\IDPCB\CIRID\VIPS-SAR\EMERGENCY PREPAREDNESS AND RESPONSE HC4\EMERGENCY EVENT\WUHAN UNKNOWN PNEU - 2020\EPI SUMMARY\Trend analysis\\_Current\\_Source Data\International
      1. You can overwrite the old file (or rename the old file before saving).
   4. Close the file before running the SAS code.
   5. Open the “09. International cases pop adjusted v1.sas” SAS code.
   6. Change the cut off dates in the first 3 lines of code.
   7. Highlight the entire code and press the “Run” button.
   8. Look in the “Log” tab in SAS and make sure there are no red errors in the code.
   9. If everything ran correctly, the two plots (ENG and FR) will be outputted. Check the log to see where they are outputted.
   10. Copy and paste these plots into the weekly report doc and update the interpretation piece.
   11. The “Results” tab in SAS will have some numbers to help you complete the interpretation piece.

## Steps on Tuesday: (finish the weekly report)

1. 
   1. Data source: DISCOVER trend extract
      1. Located here: Y:\PHAC\IDPCB\CIRID\VIPS-SAR\EMERGENCY PREPAREDNESS AND RESPONSE HC4\EMERGENCY EVENT\WUHAN UNKNOWN PNEU - 2020\EPI SUMMARY\Trend analysis\\_Current\\_Source Data\CaseReportForm
   2. You must first unzip the file called “trend\_extract.csv.bz2” by right clicking this file, hover over “7 zip”, then click on “Extract here”.
   3. After the file’s been unzipped, open the “Reported cases by age and sexgender 7MA\_v7.sas” code.
   4. Highlight the entire code and press the “Run” button.
   5. Look in the “Log” tab in SAS and make sure there are no red errors in the code.
   6. If everything ran correctly, the four plots (ENG and FR) will be outputted. Check the log to see where they are outputted.
   7. Copy and paste these plots into the weekly report doc and update the interpretation piece.
   8. Change the dates in the very bottom of the SAS code to help update the interpretation piece (see below). You’d want to look at the data from two weeks ago because there is a 2 week lag in data.

title 'male';

**proc** **print** data= Test\_male;

by agegroup20;

where earliestdate>=**'09may2021'd** and earliestdate <= **'15may2021'd**;

var A earliestdate SMA\_7\_adj;

**run**;

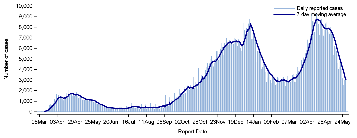
title 'female';

**proc** **print** data= Test\_female;

by agegroup20;

where earliestdate>=**'09may2021'd** and earliestdate <= **'15may2021'd**;

**run**;

1. 
   1. Data source: COVID\_CaseDeath\_7MA.csv (webscraped data)
      1. Located here: Y:\PHAC\IDPCB\CIRID\VIPS-SAR\EMERGENCY PREPAREDNESS AND RESPONSE HC4\EMERGENCY EVENT\WUHAN UNKNOWN PNEU - 2020\EPI SUMMARY\Trend analysis\Case count data
   2. Open the “Historical\_Canada daily cases figure (weekly epi report)\_v2.sas” SAS code.
   3. Highlight the entire code and press the “Run” button.
   4. Look in the “Log” tab in SAS and make sure there are no red errors in the code.
   5. If everything ran correctly, the two plots (ENG and FR) will be outputted. Check the log to see where they are outputted.
   6. Copy and paste these plots into the weekly report doc and update the interpretation piece.
   7. Change these dates at the end of the SAS code to get data for the interpretation piece:

**proc** **print** data=covid19\_trend;

Where Jurisdiction="Canada" and date>=**'23may2021'd** and date <= **'29may2021'd**;

**run**;

**proc** **print** data=covid19\_trend;

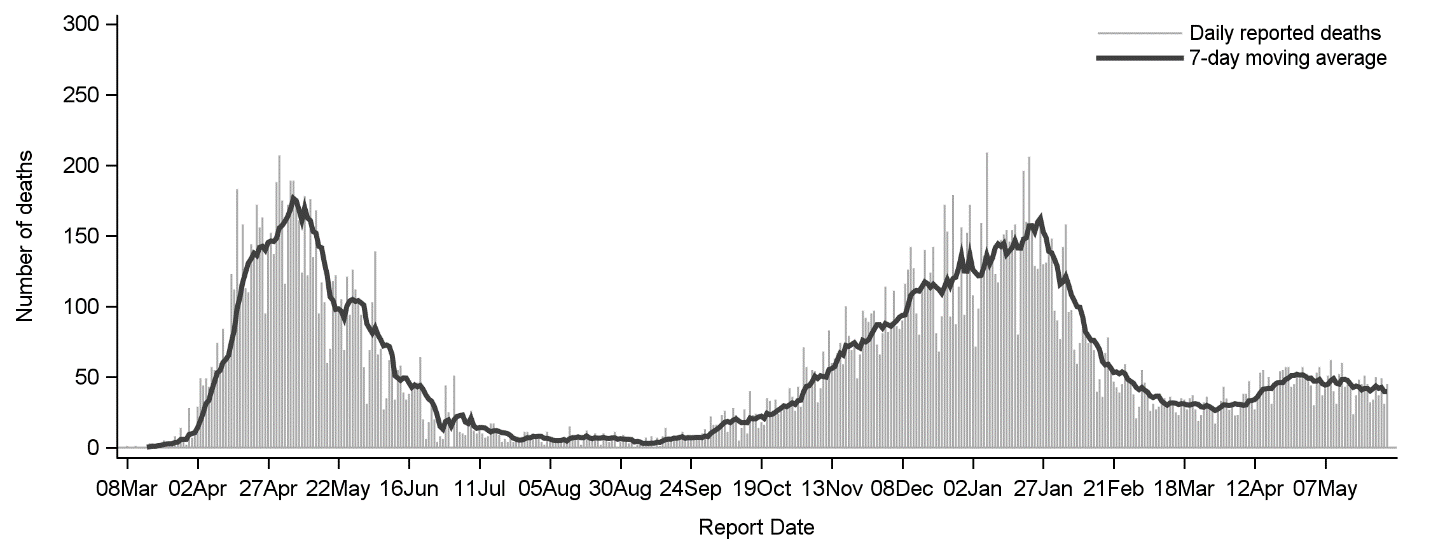
Where Jurisdiction="Canada" and date>**'01jan2021'd**;

**run**;

**proc** **print** data=covid19\_trend;

Where date = **'29may2021'd**;

**run**;

1. 
   1. Data source: COVID\_CaseDeath\_7MA.csv (webscraped data)
      1. Located here: Y:\PHAC\IDPCB\CIRID\VIPS-SAR\EMERGENCY PREPAREDNESS AND RESPONSE HC4\EMERGENCY EVENT\WUHAN UNKNOWN PNEU - 2020\EPI SUMMARY\Trend analysis\Case count data
   2. Open the “HistoricalFPT daily deaths with 7MA figure (weekly epi report)\_v3.sas” SAS code.
   3. Highlight the entire code and press the “Run” button.
   4. Look in the “Log” tab in SAS and make sure there are no red errors in the code.
   5. If everything ran correctly, the two plots (ENG and FR) will be outputted. Check the log to see where they are outputted.
   6. Copy and paste these plots into the weekly report doc and update the interpretation piece.
   7. Change the dates at the end of the SAS code to get data for the interpretation piece:

**proc** **print** data=covid19\_trend;

where jurisdiction = 'Canada' and date >= **'23may2021'd** and date <= **'29may2021'd**;

\*var jurisdiction date deaths\_daily deaths\_Daily\_7ma;

**run**;

**proc** **print** data=covid19\_trend;

where date = **'29may2021'd**;

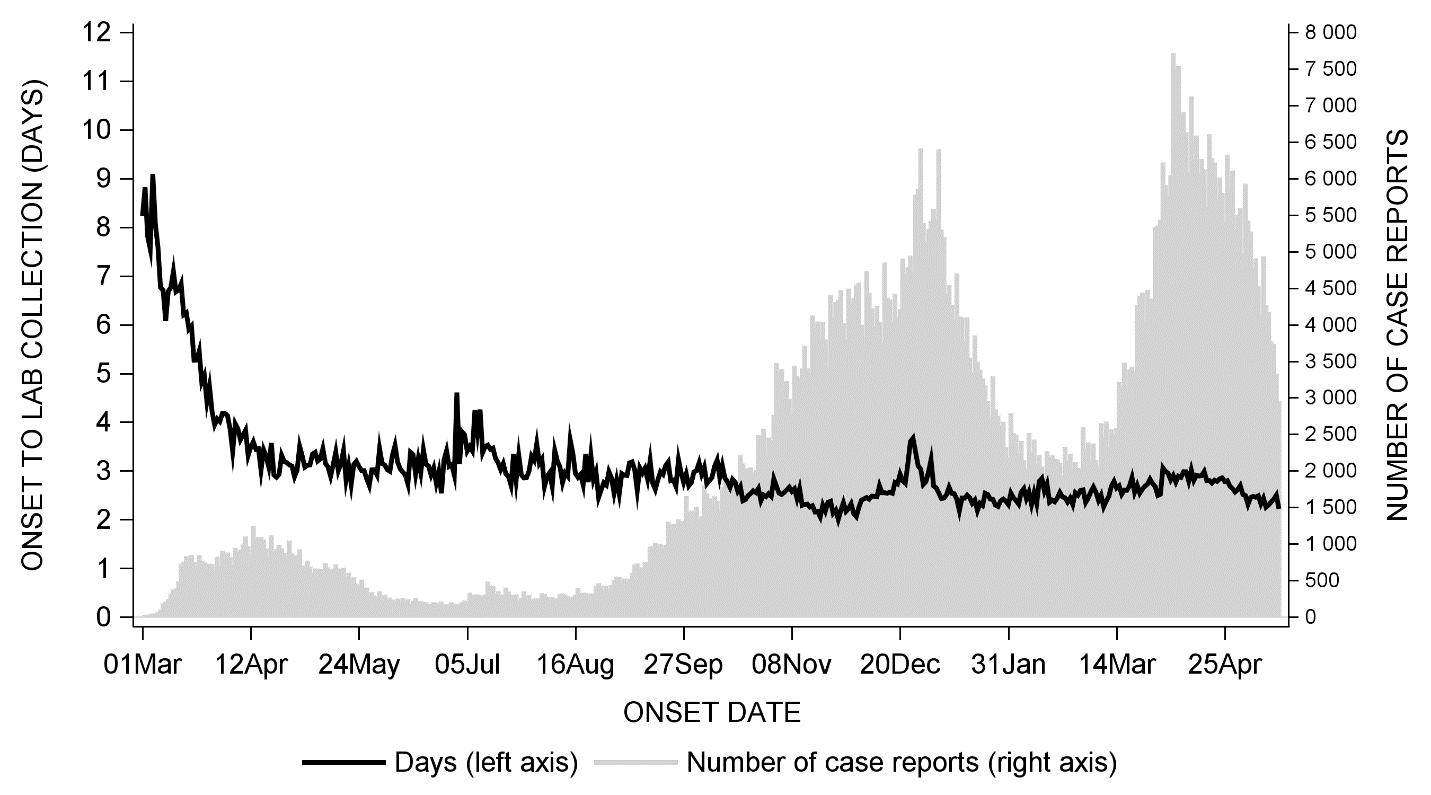
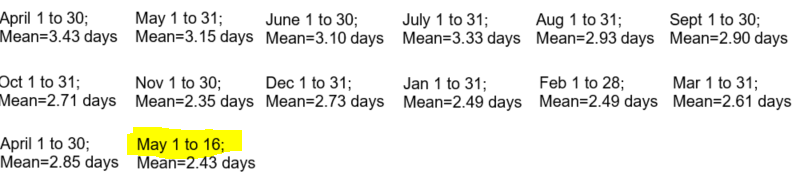
**run**;

**proc** **print** data=covid19\_trend;

Where Jurisdiction="Canada" and date>=**'01apr2021'd**;

var jurisdiction date deaths\_daily deaths\_Daily\_7ma;

**run**;

1. 
   1. Source: DISCOVER trend extract
      1. Located here: Y:\PHAC\IDPCB\CIRID\VIPS-SAR\EMERGENCY PREPAREDNESS AND RESPONSE HC4\EMERGENCY EVENT\WUHAN UNKNOWN PNEU - 2020\EPI SUMMARY\Trend analysis\\_Current\\_Source Data\CaseReportForm
   2. Ensure that the “trend\_extract.csv” file is unzipped from step 1.
   3. Open the “Onset date to Lab Collection delay\_v3.sas” SAS code.
   4. Highlight the entire code and press the “Run” button.
   5. Look in the “Log” tab in SAS and make sure there are no red errors in the code.
   6. If everything ran correctly, the two plots (ENG and FR) will be outputted. Check the log to see where they are outputted.
   7. Copy and paste these plots into the weekly report file and update the interpretation piece.
   8.  To fill in the mean values, look at the “Results” tab in SAS and you will see the mean values by month. Fill those values in the weekly report doc and make sure to change the latest date in the weekly report doc.
      1. You can check the latest date by running this code in SAS and then checking the “Results” tab in SAS:

**data** date;

x= &fifteendaysago;

format x date9.;

**run**;

**proc** **print**; **run**;

1. 
   1. Data source: Submitted+Reports.csv (SALT data)
      1. Located here: Y:\PHAC\IDPCB\CIRID\VIPS-SAR\EMERGENCY PREPAREDNESS AND RESPONSE HC4\EMERGENCY EVENT\WUHAN UNKNOWN PNEU - 2020\EPI SUMMARY\Trend analysis\\_Current\\_Source Data\SALT
   2. Open the “Lab\_testing\_table\_v2.R” **R** code.
   3. Highlight the entire code and press the “Run” button.
   4. If everything ran correctly, the excel file will be outputted where your working directory is set to.
      1. Run this function in **R** if you are unsure of where the output is saved to: **getwd()**
   5. Copy the contents of the output into the file named “SALT\_table\_template.xlsx” and format the table so that it looks like the one in the weekly report doc.
   6. Copy the table into the weekly report doc and adjust the fit.
   7. Type “NA” in the table if an entry is blank.
      1. Yukon has not reported since May 6th, 2021. So you will need to put “NA” in the table if they continue with non-reporting.
2. Once you have completed everything, save the document. Then, notify the weekly epi (via email) that it is completed and save it in the correct path on the Y drive.
3. Save the new weekly report doc here as well and archive the one from last week: Y:\PHAC\IDPCB\CIRID\VIPS-SAR\EMERGENCY PREPAREDNESS AND RESPONSE HC4\EMERGENCY EVENT\WUHAN UNKNOWN PNEU - 2020\EPI SUMMARY\Trend analysis\\_Current\\_Reporting\Weekly Epi Summary

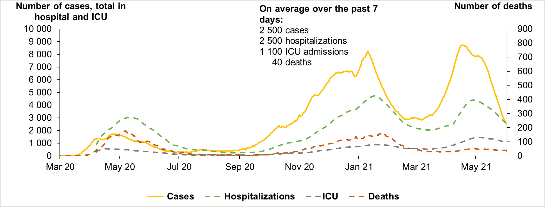
# Cabinet Deck/Epi & Modelling (Wednesday AM)

* The surveillance coordinator will let you know Wednesday morning that there is a Cabinet deck and/or Epi & Modeling deck (usually between 8am – 12pm). Once assigned, it is completed right away.
* Epi & Modelling deck usually occurs every 3 weeks.
* **R** is used to create the necessary data sets and Excel is used to create the plots (using the data sets produced in **R**). Both decks use the same **R** code.
* The formatting of these decks are very specific. Space separators are used in numbers (ex. 1 000), x-axis for dates are in the form “mmm yy” (ex. Apr 21), Arial font for all plots with size 16.
* Decks must be completed in both English and French.
* Codes for both decks are located here: Y:\PHAC\IDPCB\CIRID\VIPS-SAR\EMERGENCY PREPAREDNESS AND RESPONSE HC4\EMERGENCY EVENT\WUHAN UNKNOWN PNEU - 2020\EPI SUMMARY\Trend analysis\\_Current\TESSA\Epi & Modelling

## Data sources:

* Infobase (webscraped cases and deaths)
* Webscraped hosp and ICU
* DISCOVER

## Steps

* + - 1. Open the “Trend Graphs.xlsx” file in the path mentioned above. This is where you will copy and paste the R data sets into to produce the plots.
      2. 
         1. Data source: Infobase (webscraped)
         2. Open the “Cases\_Hosp\_ICU\_Deaths.R” code in the path mentioned above using **R Studio**.
         3. Highlight the entire code and press the “Run” button.
         4. An excel file named “Raw\_case\_death\_hosp\_icu.xlsx” will be outputted in the working directory you have.

Type in **getwd()** in R to see where your output is located if you are unsure where your working directory is.

* + - * 1. Open the “Raw\_case\_death\_hosp\_icu.xlsx” file.
        2. Filter the “Jurisdiction” column to only “Canada”.
        3. Open the “Trend Graphs.xlsx” file, go to the sheet named “CaseHospDeathICU”.

# Data sources

### Case report form data (DISCOVER)

[https://discover-metabase.hres.ca/auth/login?](https://discover-metabase.hres.ca/auth/login?redirect=%2F)

Y:\PHAC\IDPCB\CIRID\VIPS-SAR\EMERGENCY PREPAREDNESS AND RESPONSE HC4\EMERGENCY EVENT\WUHAN UNKNOWN PNEU - 2020\EPI SUMMARY\Trend analysis\\_Current\\_Source Data\CaseReportForm\trend\_extract.rds

Maintained by the data synthesis team within SED – this database contains case report form information submitted by PTs to PHAC. The trend extract file is produced Sun-Thurs by the R coder, and contains a subset of variables needed in the trend report.

### Hosp/ICU data (GoogleSheets)

<https://docs.google.com/spreadsheets/d/17KL40qJ8tpFalFeBv1XDopTXaFm7z3Q9J2dtqqsQaJg>

Maintained by the daily report epi – this sheet contains daily numbers of total hospitalizations and ICU for each province from their public facing websites. If a province does not provide an update, the previous day’s values are carried over. Note – for the trend report, we do retrospective corrections for AB, based on their dashboard.

### PT case and death data (Infobase)

<https://health-infobase.canada.ca/src/data/covidLive/covid19.csv>

This dataset is maintained by the daily report epi. It contains many variables, but is mainly used for publically reported cases and deaths. It gets updated between 7-9pm daily. You can check the date on the [infobase page](https://health-infobase.canada.ca/covid-19/epidemiological-summary-covid-19-cases.html) to be sure that its been updated.

### Infobase corrections source (Googlesheets)

<https://docs.google.com/spreadsheets/d/1lHTwMuZlGq8hXpiFMamy46jRkcBqetP16-1cYkfELJE>

This dataset is maintained by the trend epi. It contains information on the manual corrections made to the infobase dataset, in order to smooth data reporting irregularities caused by data dumps, and corrections by the provinces.

### Laboratory data (SALT)

Y:\PHAC\IDPCB\CIRID\VIPS-SAR\EMERGENCY PREPAREDNESS AND RESPONSE HC4\EMERGENCY EVENT\WUHAN UNKNOWN PNEU - 2020\EPI SUMMARY\Trend analysis\\_Current\\_Source Data\SALT\submitted+reports.csv

This dataset is manually saved by the daily report epi, and a copy gets written to the above folder when they run their PCO bullets .R code (around 5-6pm). If any issues, can download the data directly from CNPHI via the following steps:

1. Log into **CNPHI** (<https://www.cnphi-rcrsp.ca/cnphi/index.jsp>) after 6pm
2. Navigate to SALT via the **Laboratory** drop-down menu
3. Navigate to the **Submitted Reports** section via the **Menu** drop-down menu
   * Set the start date at 01-01-2020
   * Ensure that “Incremental” is checked off
   * Select “Export to .**CSV**”
4. Save file (Submitted+Reports.**csv**) to **\\_Current\\_Source Data\SALT**

### International data (OWID)

<https://covid.ourworldindata.org/data/owid-covid-data.csv>

<https://github.com/owid/covid-19-data/tree/master/public/data>

Maintained by “OurWorldInData”, this data source contains data on cases, deaths, vaccines, etc. for all countries.