

# A Comparison Between Seasonal Influenza and COVID-19

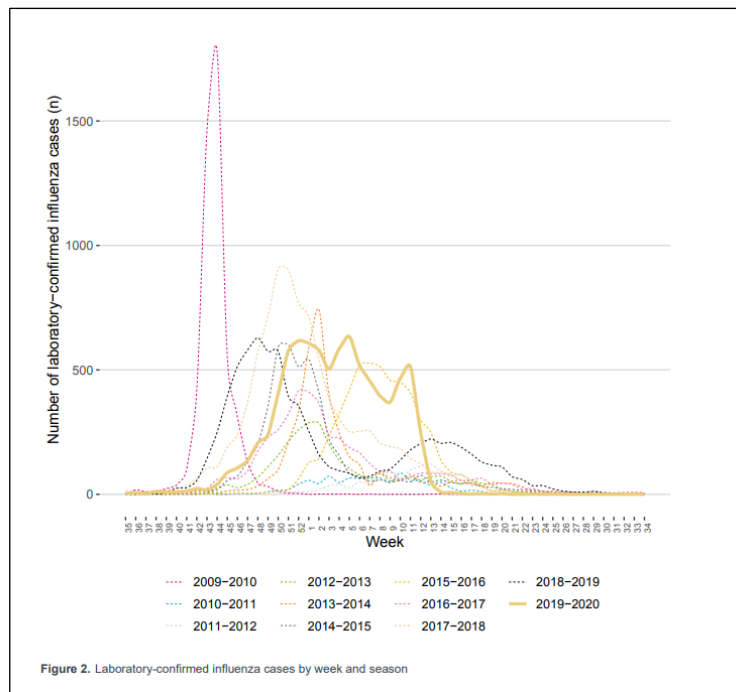
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Alberta, Canada 2021

# Seasonal Curve Comparison

## Graph of Annual Influenza Cases in Alberta

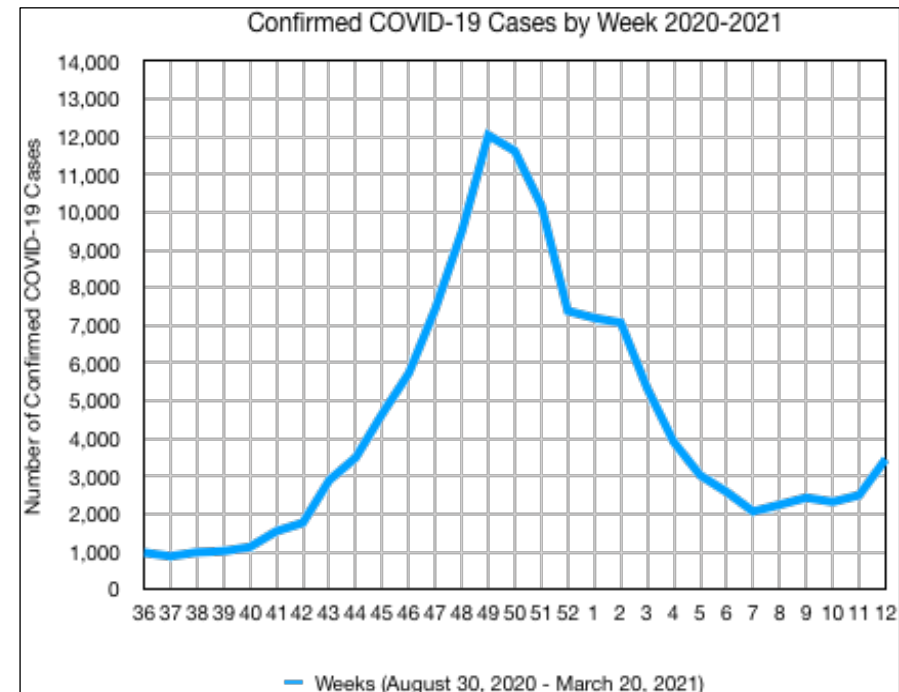
Natural curve without government restrictions mandating business closures, public masking, social distancing, or strict limits on social interaction.



Influenza graph taken from: <https://open.alberta.ca/dataset/9044e65d-a97e-43cb-8357-9c890422f069/resource/a8d0a6cd-97a2-48e2-8ec1-f5a11463bc33/download/health-influenza-summary-report-2019-2020.pdf>

## Graph of COVID-19 Cases in Alberta

Curve with government restrictions in place that caused countless other harms to Albertans, their well-being, and livelihoods.



COVID-19 case statistics taken from: <https://www.alberta.ca/stats/covid-19-alberta-statistics.htm#total-cases>

Notice the abrupt end of the 2019-2020 influenza season that dropped from a peak during week 11 (early March 2020) to non-existent by week 14 (early April).

**“Please note for all dashboards that as of March 12, community samples are no longer being routinely tested for non-COVID respiratory pathogens including flu.”**

Quote from AHS in their “Past Influenza Seasonal Data” Final Report (released May 7, 2020)  
<https://www.albertahealthservices.ca/influenza/Page14481.aspx>

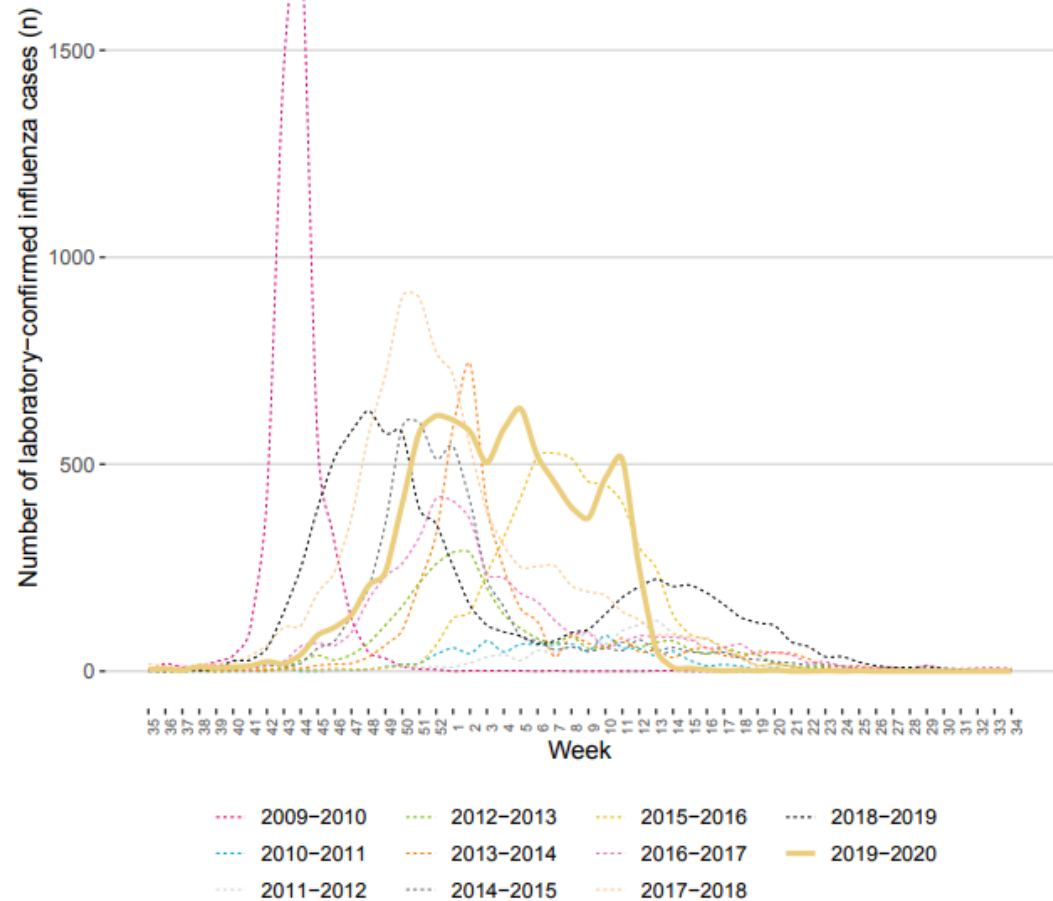


Figure 2. Laboratory-confirmed influenza cases by week and season

# Uniformity in How Cases are Defined and Counted is Important for Making a Legitimate Comparison Between Influenza and COVID-19 Case Numbers

## Influenza Case Definition

**Confirmed Case** – “Clinical illness<sup>(A)</sup> with laboratory confirmation of infection:

- Detection of influenza RNA
- OR**
- Demonstration of influenza virus antigen in an appropriate clinical specimen
- OR**
- Significant rise (e.g., fourfold or greater) in influenza IgG titre between acute and convalescent sera
- OR**
- Isolation of influenza virus from an appropriate clinical specimen.”<sup>1</sup>

“(A) Clinical illness defined as influenza-like illness (ILI) is characterized as follows: acute onset of respiratory illness with fever and cough and with one or more of the following:

- sore throat
- arthralgia
- myalgia
- prostration that could be due to influenza virus”<sup>1</sup>

Some variance in symptoms for those under 5 or 65 and older are noted.

<sup>1</sup> <https://open.alberta.ca/dataset/62c6352f-fd9e-4c42-9867-9f2b142b6eff/resource/6e132b1e-96a5-4f33-b959-8404026eafe/download/influenza-seasonal-2019-08.pdf>

## COVID-19 Case Definition

**Confirmed Case** - “A person with confirmation of infection with the virus (SARS-CoV-2) that causes COVID-19 by:

- Detection of at least one specific gene target by a validated nucleic acid amplification tests (NAAT) (e.g. real-time PCR or nucleic acid sequencing) performed at a community, hospital or reference laboratory (NML or a provincial public health laboratory)
- OR**
- A positive result on a validated rapid/point-of-care (POC) NAAT-based assay or antigen test<sup>(A)</sup> that has been deemed acceptable to provide a final result (i.e. does not require confirmatory testing)”<sup>2</sup>

**Requires a positive test result, but no evidence of clinical illness is required.**

<sup>2</sup> <https://open.alberta.ca/dataset/a86d7a85-ce89-4e1c-9ec6-d1179674988f/resource/f079a182-24dd-4523-b4b2-f311dd76774f/download/health-disease-management-guidelines-covid-19-2021-03-24.pdf>

# COVID-19 Confirmed Case Definition Issue

Note: The CDC states that, “Case definitions should not rely on laboratory culture results alone, since organisms are sometimes present without causing disease.”<sup>3</sup> (CDC - Principles of Epidemiology in Public Health Practice, Third Edition, An Introduction to Applied Epidemiology and Biostatistics)

\*Keep in mind, there are many questions surrounding the accuracy of COVID-19 tests. These include:

- Has the SARS-CoV-2 virus been adequately isolated and purified for identification and diagnostic purposes?
- Is there a valid gold standard for determining the accuracy of a PCR test in diagnosing COVID-19?
- How appropriate are PCR tests for diagnosing viral infection and determining viral load?
- What is the origin of the RNA gene sequences used to calibrate the PCR tests, and is the detection of one specific gene target adequate?
- Have the clinical sensitivity and specificity values been determined for the RT-PCR tests used in Alberta?
- Is the high cycle threshold being used for the PCR test producing a large percentage of false positive test results?

As PCR test results are the basis for many government decisions that have negatively impacted Albertans, these questions need to be answered.

<sup>3</sup> <https://www.cdc.gov/csels/dsepd/ss1978/lesson1/section5.html>

# Inclusion of a Probable Case Definition

## Influenza Case Definition

**No definition for probable case is listed.**

## COVID-19 Case Definition

### **Probable Case –**

- “A person (with NO laboratory testing done) with clinical illness<sup>(C)</sup> **who in the last 14 days** had close contact with a lab-confirmed COVID-19 case while the confirmed case was infectious

**OR**

- A person (with laboratory testing done) with clinical illness<sup>(C)</sup> who meets the COVID-19 exposure criteria

**AND**

- In whom laboratory diagnosis of COVID-19 is inconclusive<sup>(D)</sup>”<sup>2</sup>

“(C)Clinical illness: Any one or more of the following: fever (over 38 degrees Celsius), new onset/exacerbation of following symptoms: cough, shortness of breath (SOB)/difficulty breathing, sore throat, loss of taste and/or smell or runny nose. ”<sup>2</sup>

<sup>2</sup><https://open.alberta.ca/dataset/a86d7a85-ce89-4e1c-9ec6-d1179674988f/resource/f079a182-24dd-4523-b4b2-f311dd76774f/download/health-disease-management-guidelines-covid-19-2021-03-24.pdf>

# COVID-19 Probable Case Definition Issue

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**The definition of clinical illness includes symptoms that are not unique to COVID-19 and only requires one or more symptom to be present. No laboratory confirmation is required.**

(A person with a runny nose, who has an inconclusive test and who resides in Alberta could qualify as a probable case and be counted.)

# Case Statistics

## Influenza

### **National Notification for Canada**

“Only **confirmed cases** of disease should be notified.”<sup>4</sup>

### **Alberta Case Statistics**

Includes only confirmed cases requiring clinical illness and laboratory confirmation of infection.

<sup>4</sup><https://www.canada.ca/en/public-health/services/diseases/flu-influenza/health-professionals/national-case-definition.html>

## COVID-19

### **National Notification for Canada**

“The Public Health Agency of Canada should be notified of any confirmed and probable cases of COVID-19.”<sup>5</sup>

### **Alberta Case Statistics**

Includes confirmed cases that may not have evidence of clinical illness and probable cases that are not laboratory confirmed.

<sup>5</sup><https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/health-professionals/national-case-definition.html>



# Death and Comorbidity Statistics

## Influenza

### **Alberta Death Statistics**

Includes only deaths that occurred in hospital among laboratory-confirmed influenza cases. It is unclear to what degree the Alberta statistics distinguish between deaths in which influenza is the direct cause of death or a contributing factor in the death.

### **Alberta Comorbidity Statistics**

It is difficult to find data regarding how common it is for deaths with comorbidities to be attributed to influenza in Alberta.

## COVID-19

### **Alberta Death Statistics**

Includes deaths classified as a confirmed or probable case, regardless of how many comorbidities are present or whether COVID-19 is the cause of death or a contributing factor in the death.

### **Alberta Comorbidity Statistics**

Only 2.3% of deaths attributed to COVID-19 have no comorbidities and 77.7% have 3 or more comorbidities.<sup>6</sup> (as of March 21, 2021)

<sup>6</sup><https://www.alberta.ca/stats/covid-19-alberta-statistics.htm#comorbidities>

# Test Volume Comparison

## Influenza

### **Canadian Test Statistics**

Average Annual Influenza Test Volume for  
Canada – 287,521<sup>7</sup>

(Six-year average from 2014-2015 to 2019-2020 influenza seasons)

## COVID-19

### **Alberta Test Statistics**

Test Volume for Alberta - 3,476,408

People Tested in Alberta - 1,838,785<sup>8</sup>

(As of March 7, 2021)

**Alberta has administered approximately 12x the number of tests for COVID-19 in the last year than the average number of influenza tests administered annually in Canada (based on Government of Canada FluWatch reports).**

<sup>7</sup><https://www.canada.ca/en/public-health/services/publications/diseases-conditions/fluwatch/2020-2021/week-48-november-22-november-28-2020.html>

<sup>8</sup><https://www.alberta.ca/stats/covid-19-alberta-statistics.htm#laboratory-testing>

# Conclusion

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While the case curves for seasonal influenza and COVID-19 are very similar, it is impossible to accurately compare the difference in case numbers and death statistics due to significant variables in definitions and how these stats are being collected and classified. Due to the vast increase in testing for COVID-19 and the questionable accuracy of the PCR tests, along with not requiring clinical illness for meeting the confirmed case definition for COVID-19 and the inclusion of probable cases, it is to be expected that significantly more COVID-19 cases would be reported than we've seen case reports for influenza in the past.