

Research Paper

Report 5: COVID-19 Canadian Insurance Industry Monthly Aggregate Data Analysis

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Introduction

The Canadian Institute of Actuaries (CIA) and its members are making important contributions to research and analysis of the impact and implications of the COVID-19 pandemic.

One area of interest and importance to many actuaries is the impact of COVID-19 on the life insurance industry in Canada. In April 2020, the CIA and representatives of a number of Canadian life insurance companies agreed to a program of data collection and analysis in order to answer key questions, including:

- Is the overall level of life insurance claims during the pandemic different from previous years?
- Is COVID-19 a significant cause of death for insurance claims in Canada?

The CIA is supporting this analysis by collecting aggregate data from Canadian life insurance companies. The data collected include data on exposure, total insurance claims, and claims related to COVID-19 at an aggregate level monthly, covering both individual and group lines of business.

An [initial report](#) was published on October 26, 2020.

A [second report](#) with additional data collected up to the end of September 2020 was published on February 23, 2021.

A [third report](#) including data up to the end of December 2020 was published on June 22, 2021.

A [fourth report](#) including data up to the end of May 2021 was published on November 21, 2021.

This report, the fifth report in the series, includes data up to the end of December 2021.



CIA data collection with Canadian life insurance companies

- Participating companies: Canada Life, Manulife, Sun Life, The Co-operators, Foresters, RBC, SSQ, Industrial Alliance, Assumption Life, Equitable Life, Humania Assurance, La Capitale, Wawanesa Mutual Insurance Company
- Timeline: January 2019 to December 2021 – aggregate data are submitted monthly
- Number of companies for this analysis:
 - Individual: 13
 - Group: 11

A few key points to note in the data collected:

- The majority of companies report claims as of actual date of death. Specifically, 11 companies reported individual data according to the **actual** date of death; only two reported according to the **reported** date of death. Although this reporting based on actual date of death results in changes in reporting of claims by month as more data are reported, it provides a better analysis of the impact of the pandemic over time. The following tables show the split of companies and exposure (by count and amount in \$millions of sum insured) reporting according to the actual date of death versus reported date of death.

Individual	Data Type	Number of Companies	Total Exposure By Count	% of Total Exposure	Total Exposure By Amount (\$mil)	% of Total Exposure
2019	Actual	11	9,215,299	74.7%	\$1,536,391	69.6%
	Reported	2	3,119,109	25.3%	\$672,211	30.4%
	Total	13	12,334,408	100.0%	\$2,208,602	100.0%
2020	Actual	11	9,318,098	75.1%	\$1,636,131	70.1%
	Reported	2	3,096,419	24.9%	\$696,250	29.9%
	Total	13	12,414,517	100.0%	\$2,332,381	100.0%
2021	Actual	11	9,560,895	75.6%	\$1,738,584	70.7%
	Reported	2	3,079,905	24.4%	\$720,093	29.3%
	Total	13	12,640,800	100.0%	\$2,458,677	100.0%



Group	Data Type	Number of Companies	Total Exposure By Count	% of Total Exposure	Total Exposure By Amount (\$mil)	% of Total Exposure
2019	Actual	10	7,899,417	97.8%	\$725,063	98.0%
	Reported	1	177,919	2.2%	\$14,524	2.0%
	Total	11	8,077,336	100.0%	\$739,587	100.0%
2020	Actual	10	7,770,262	97.7%	\$730,545	98.0%
	Reported	1	180,497	2.3%	\$14,673	2.0%
	Total	11	7,950,759	100.0%	\$745,218	100.0%
2021	Actual	10	7,705,423	97.7%	\$718,889	98.0%
	Reported	1	177,905	2.3%	\$14,625	2.0%
	Total	11	7,883,328	100.0%	\$733,514	100.0%

Although the cause of death is not consistently collected by life insurance companies in Canada, most of the companies have been able to provide data on COVID-related deaths. Of the companies providing data on individual claims, 12 reported COVID-related claims separate from other claims.

Context and general population statistics

In the 22 months from March 2020 to December 2021, Canada experienced five distinct waves of COVID-19 infections and deaths.

The pattern of these five waves is shown in the graphs below. The first graph shows the rolling seven-day average of new COVID-19 cases¹ and the second graph shows excess deaths in the Canadian population as reported by Statistics Canada².

The first wave peaked in early May 2020, and although lower than the two subsequent waves in terms of new cases, this was the highest wave in terms of excess deaths in the general population.

¹ Source: <https://www.worldometers.info/coronavirus/country/canada>

² Source: *Provisional death counts and excess mortality, January 2020 to October 2021*, <https://www150.statcan.gc.ca/n1/daily-quotidien/220110/dq220110a-eng.htm>



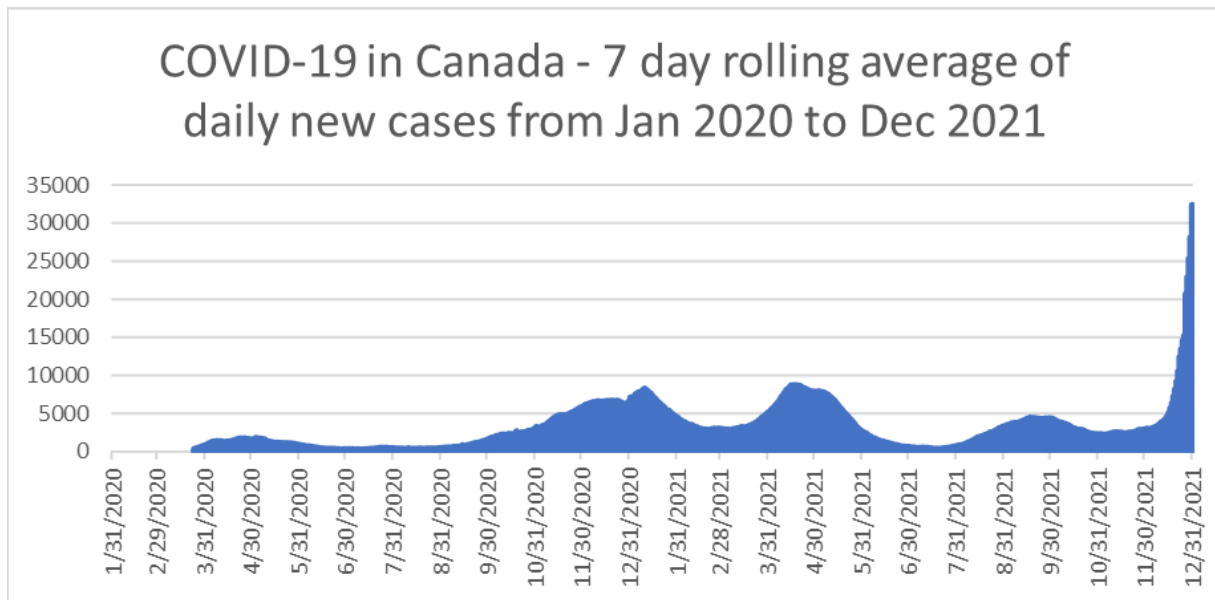
The second wave was more prolonged in overall duration, building up in the later months of 2020 and peaking in January 2021.

During the third wave, which reached its peak in terms of new cases in late April 2021, the overall excess deaths in the Canadian population were lower. This may be due, at least in part, to the early impact of the rollout of vaccines in the country.

The fourth wave reached its peak in late September, and again the overall excess deaths were lower, probably due in great part to most people having their two doses of vaccines.

The fifth wave, starting in December coming from the Omicron variant will be covered in the next report once more data for 2022 are obtained.

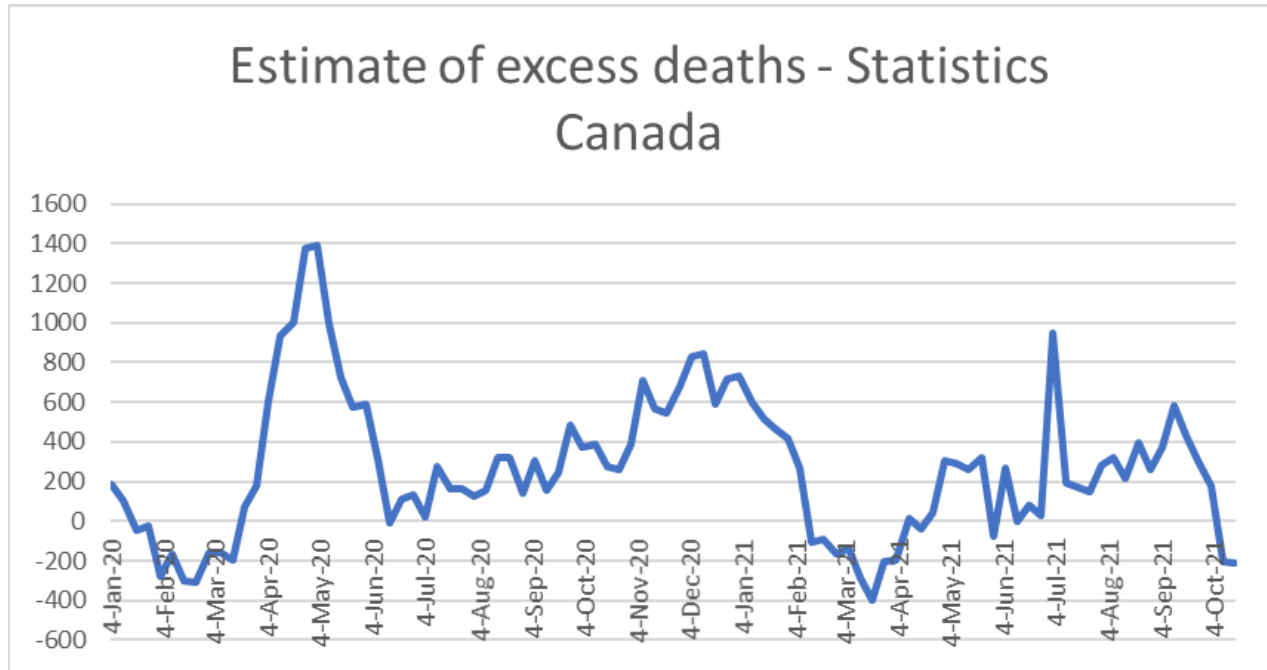
Graph 1



Source: Worldometer



Graph 2



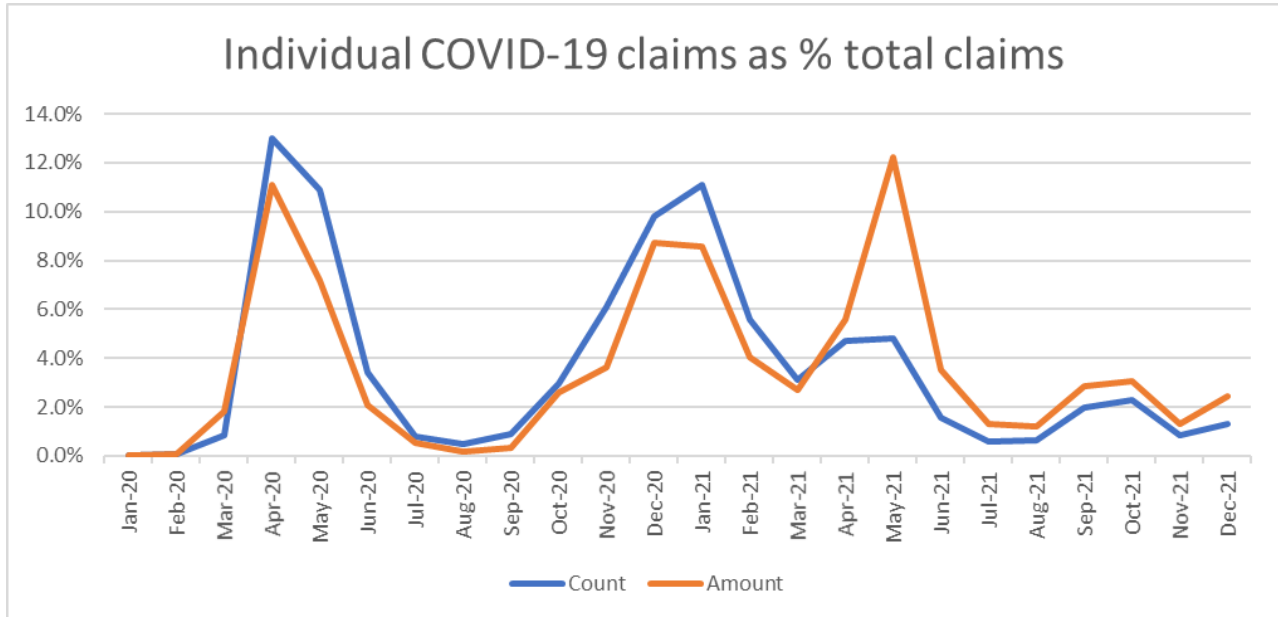
Source: Statistics Canada

Main findings (Individual)

Although not all companies were able to capture cause of death, there were a total of 3,265 reported individual claims identified with COVID-19 as cause of death in 2020, and a further 2,271 reported from January 2021 to December 2021. As shown in Graph 3 below, COVID-19 individual claims as a percentage of total claims peaked in April 2020, but the second wave of COVID-19 also had a significant impact on individual life insurance claims. At the peak of the second wave in January 2021, individual life insurance claims due to COVID-19 reached 11% of total claims by count and 9% of total claims by amount (second only to April 2020 in terms of COVID-19 impact on claims). For the third and fourth waves, there were fewer insurance claims counts than the previous two waves. However, some larger claims amounts seem to have occurred in May 2021.



Graph 3



Source: CIA monthly aggregate data collection

Even though very few claims were identified as due to COVID-19 from January to March 2020, aggregate individual insurance claims amounts exceeded the comparable monthly equivalent amounts in 2019 in those same months (see Graph 4). It is conceivable that life insurance claims in the early months of 2020 were impacted by COVID-19 even though the specific cause of death was not recorded.

In order to ensure greater comparability, the total monthly aggregate claims amounts were calibrated by dividing each month's claims amount by the total exposure as reported at the start of the year of those claims. The month-by-month pattern of claims after calibration is shown in Graph 4 (the month-by-month pattern of claims before calibration is shown in the graph in Appendix A for reference). After calibrating the individual claims to exposure at the start of the year, monthly claims in 2020 exceeded 0.02% in every month other than the two summer months of June and July.

Moreover, the monthly aggregate individual insurance claims in all but one of the months in 2020 exceeded the comparable monthly aggregate amounts for the same months in 2019

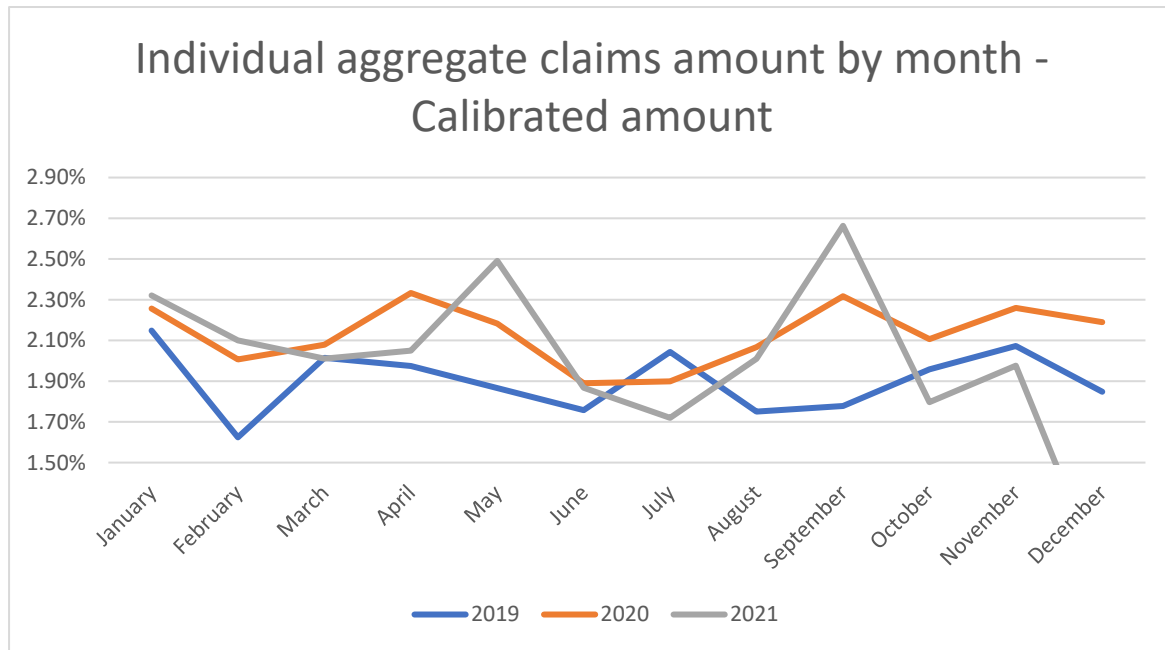


(every month except July – a point in the year when the impact of the pandemic was relatively limited).

January and February 2021 total monthly aggregate individual insurance claims followed a similar pattern to the early months in 2020, with claims elevated over the same level in 2019. However, as the second wave of COVID-19 in Canada receded, the pattern of individual insurance claims dipped to a level more consistent with what was seen in 2019. Consistent with the pattern of excess deaths in the population in total, individual insurance claims increased in May 2021, with the total amount claimed being higher than 2020, most likely due to some larger claims amount.

The claims in 2021 went down to a similar level than previous years during the summer and increased in October consistent with the fourth wave but again higher than 2020 probably due to some larger claims amount.

Graph 4



Source: CIA monthly aggregate data collection



Main findings (Group)

Different from the outcome in individual life insurance claims, group claims in 2020 and 2021 did not follow as closely the notable waves within the general population statistics.

Graph 5 below shows the pattern of monthly aggregate group claims from January 2019 to December 2021 calibrated by dividing the claims by total aggregate premium. Although aggregate monthly group claims (after calibration) in January and February 2020 were higher than aggregate monthly group claims in January and February 2019, this was unlikely to be a result of COVID-19 claims.

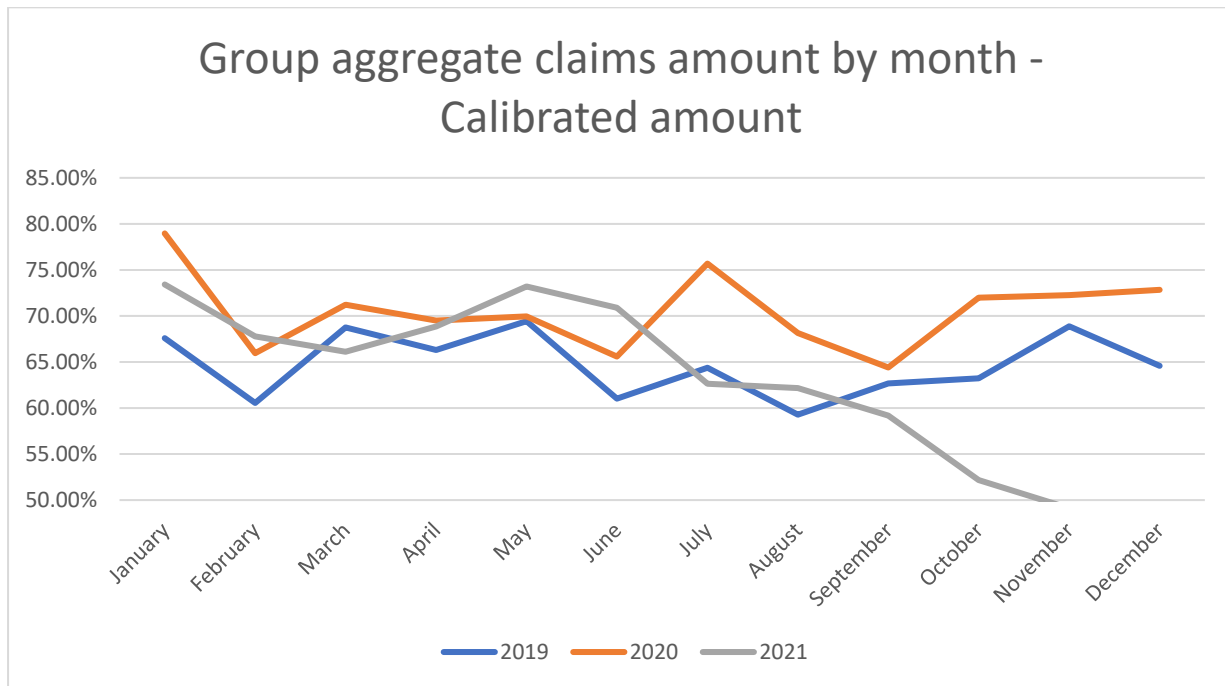
The second half of 2020 showed a more persistent pattern of elevated claims as the second wave impacted Canadians. Aggregate monthly group claims divided by total aggregate premium in the six months from July 2020 to December 2020 were on average 9% higher than during the same months in 2019.

Consistent with the pattern of excess deaths in the population in total, group insurance claims increased in May but also in June 2021, and both were higher than 2020. Then claims went down during the summer to a similar level to 2019.

Monthly aggregate group claims divided by monthly aggregate premium from September 2021 were lower than the level of claims seen in the same period in both 2020 and 2019. However, given the lag in the reporting of some claims, it is reasonable to assume that the level of claims in these months will increase as additional claims are reported. Accordingly, the fourth wave impact will be better reflected in the next publication of this report.



Graph 5

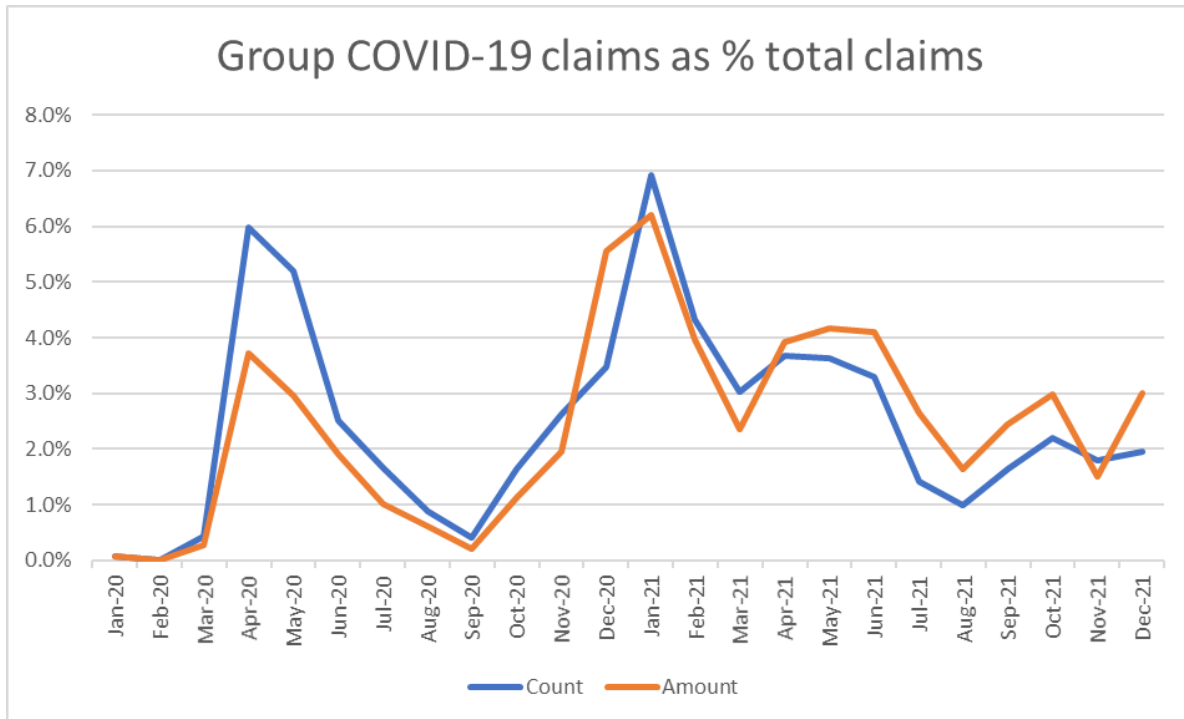


Source: CIA monthly aggregate data collection

When compared to individual claims, there was a smaller number of group claims identified as due to COVID-19, as shown below in Graph 6 (828 claims in 2020 and 1,071 claims in 2021). As a percentage of total group claims by count, the highest levels for COVID-19 claims were 6.0% in April 2020 and 6.9% in January 2021.



Graph 6



Source: CIA monthly aggregate data collection

Ongoing updates

This report is based on data reported up to the end of December 2021 (except Statistics Canada excess deaths which are up to mid-October 2021). From general population data, we know that the level of overall deaths due to COVID-19 have decreased with the rollout of vaccines and with most people having two doses, except lately with the Omicron variant.

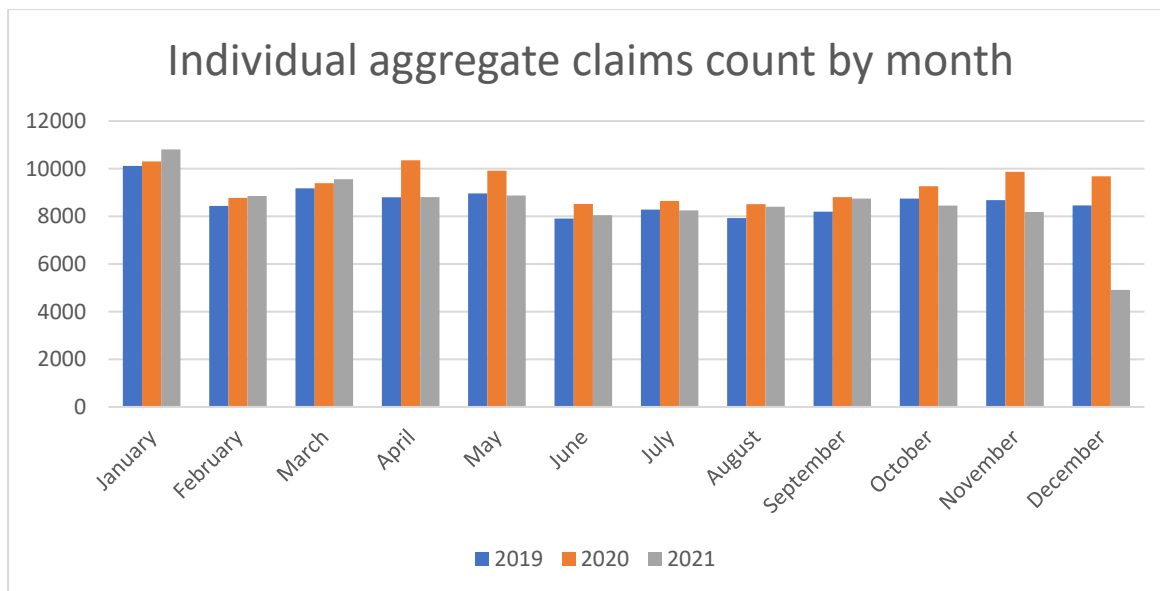
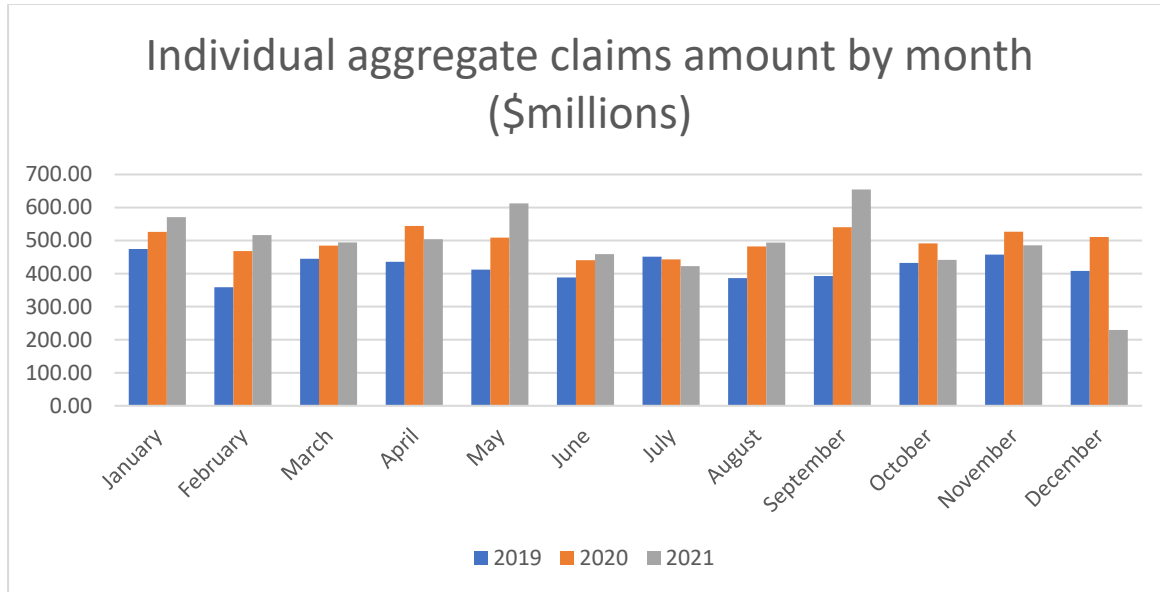
With more aggressive variants, such as Omicron, and inconsistencies in vaccine rates and public health measure adoption, additional waves of COVID-19 infections may continue to impact Canada. Therefore, the CIA will continue to collect data and report on the aggregate life insurance claims levels throughout 2022, at least covering the wave caused by the Omicron variant.

The CIA would like to thank the insurance industry participants for their ongoing contributions to this study.



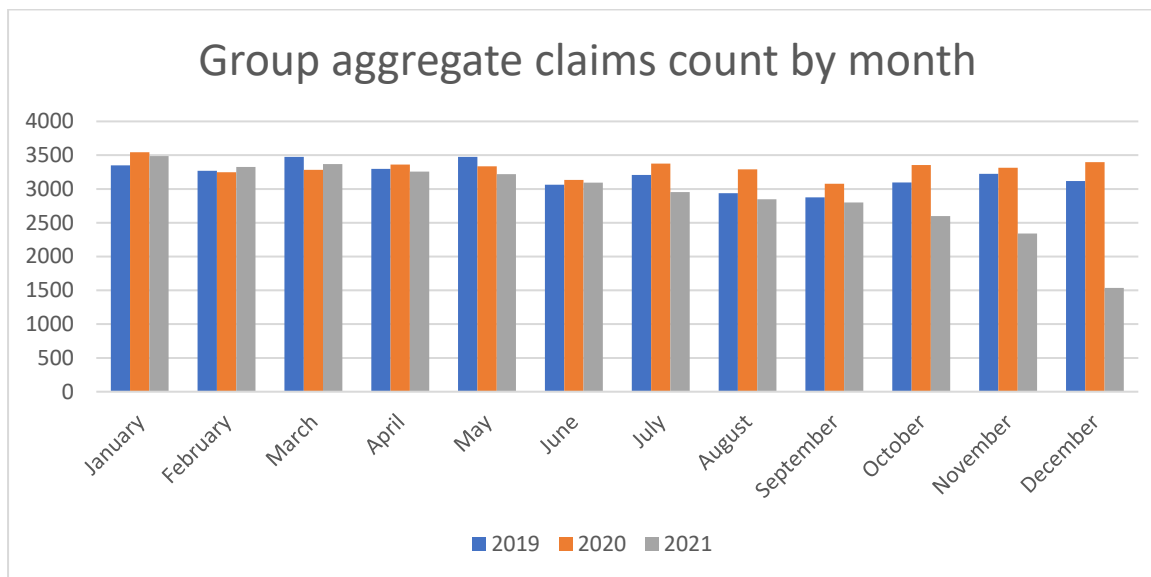
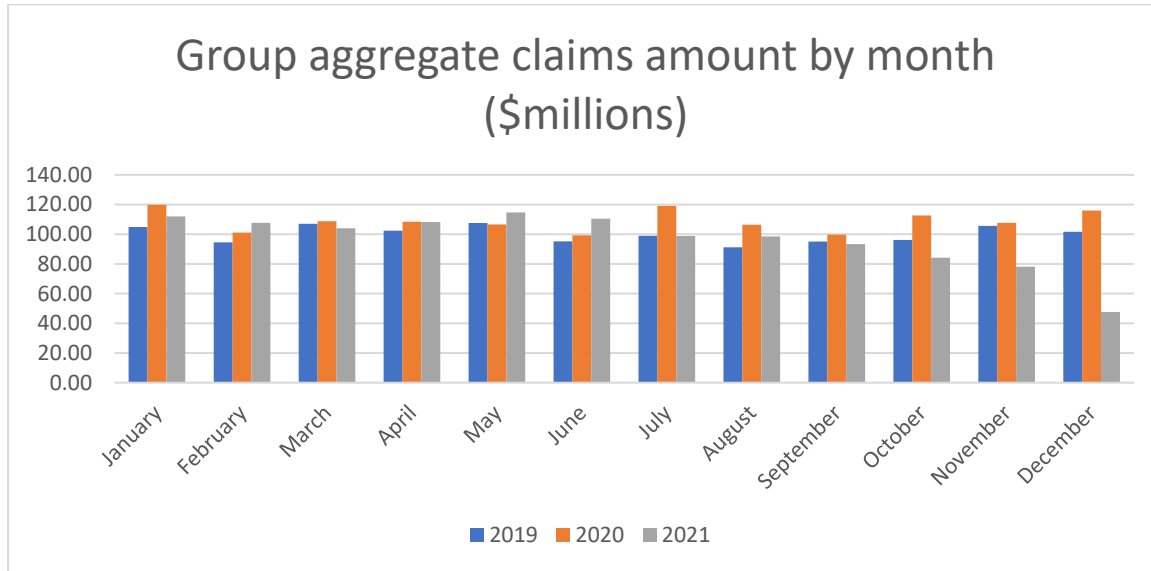
Appendix 1 – Aggregate total monthly claims

Individual





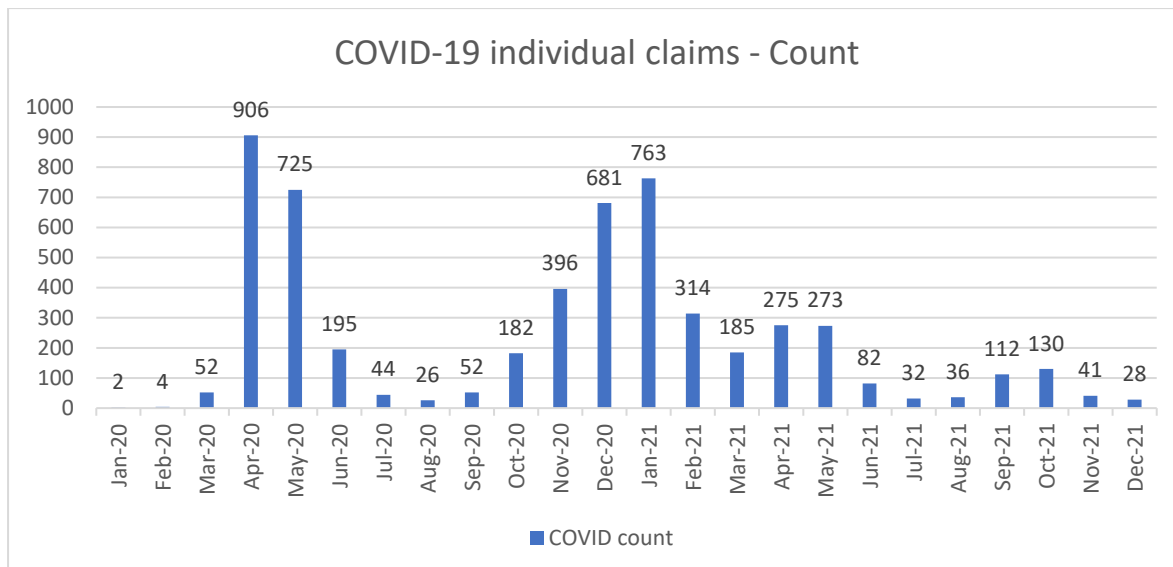
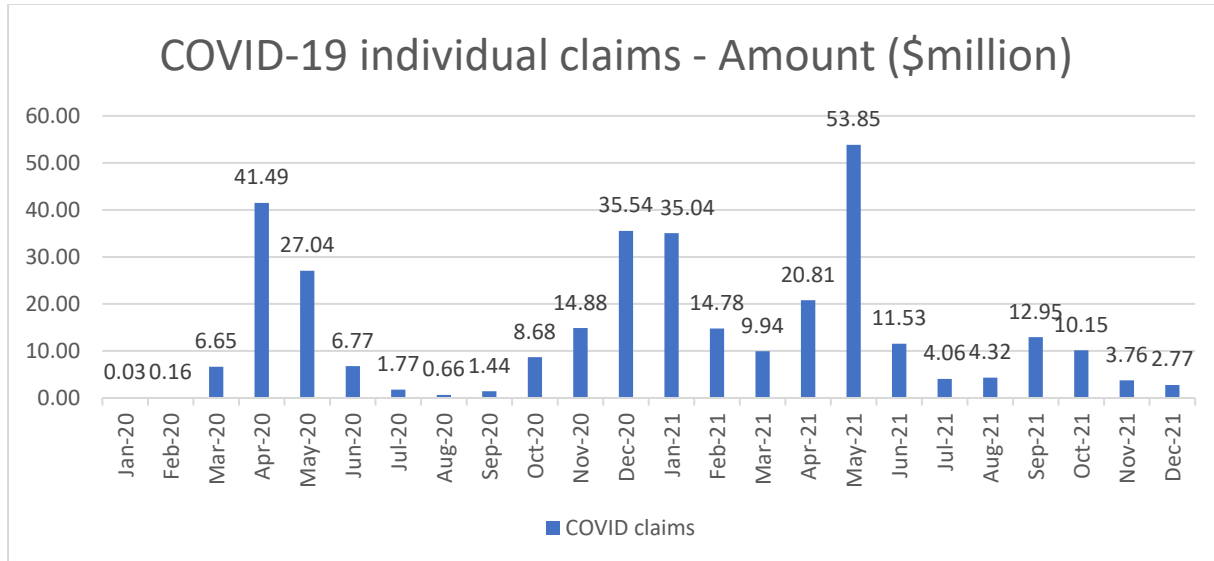
Group





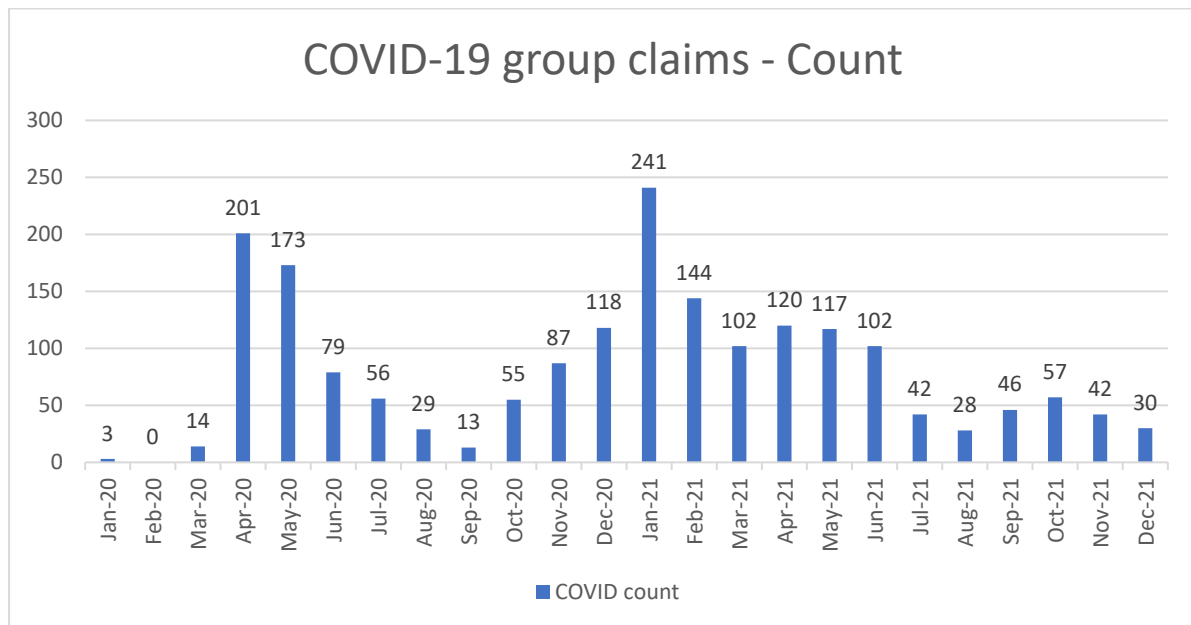
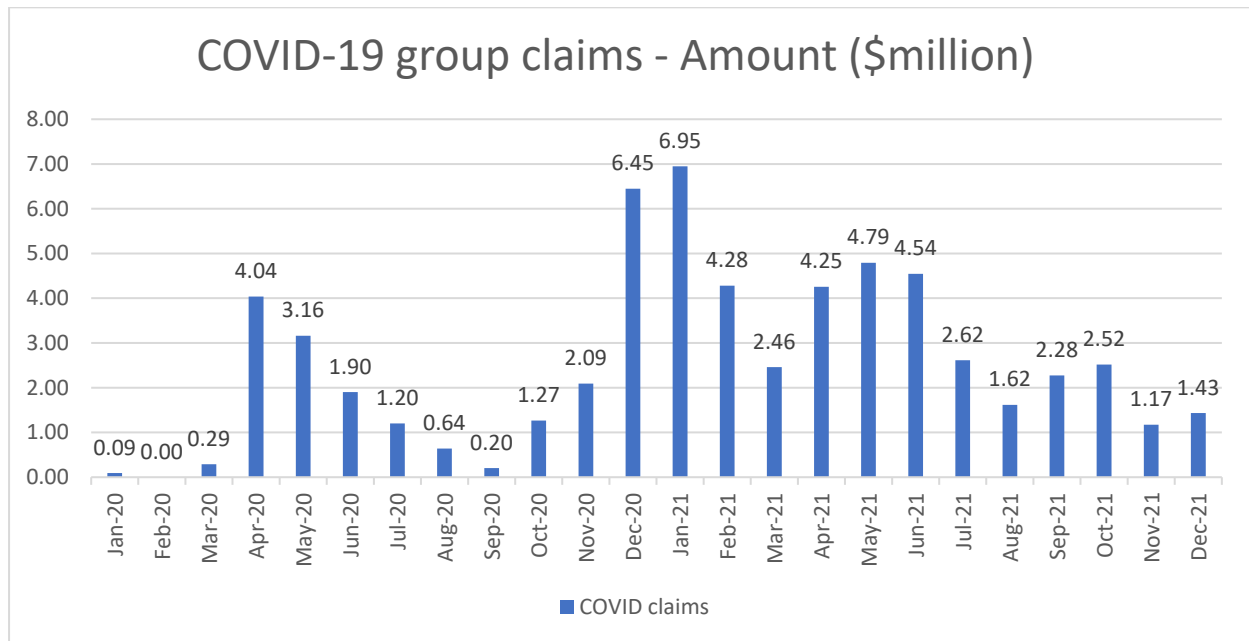
Appendix 2 – Aggregate monthly COVID-19 claims

COVID-19 Claims – Individual





COVID-19 claims – Group



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