LONG COVID – THE LONG-TERM DISABILITY CLAIMS GAP

Abstract

On March 11, 2020 – just shy of three years ago – the World Health Organization (WHO) declared COVID-19, a multi-organ disease caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), to be a pandemic. As of January 3, 2023, COVID-19 has infected more than 656 million people worldwide and caused close to 6.7 million deaths.[1]

Fortunately, most infected by COVID-19 do recover. However, an increasing number of survivors are reporting persistent and lingering symptoms after an acute bout, a condition which has come to be known as long COVID.

From a disability insurance standpoint and based on numerous articles in the scientific literature and lay press, insurers might have expected a tsunami of long-term COVID disability claims after the expected six-month waiting period. Thus far, however, this has not been the case. Why, and what could be the possible reasons for this long COVID/long-term disability claims gap?

This article examines medicine's current understanding of long COVID, and some of the potential reasons for this gap.

What is Long COVID?

Long COVID is the most common name in the scientific literature and lay press for a condition in COVID-19 survivors consisting of related symptoms that persist long after the actual illness abates. The World Health Organization (WHO) has given it the name "post COVID-19 condition" and provides the following definitional language: "Post COVID-19 condition (PCC) occurs in individuals with a history of probable or confirmed SARS-CoV-2 infection, usually three months from the onset of COVID-19 symptoms, that last for at least two months and cannot be explained by an alternative diagnosis. Common symptoms include fatigue, shortness of breath, [and] cognitive dysfunction, but also other symptoms which generally have an impact on everyday functioning. Symptoms may be new onset following initial recovery from an acute COVID-19 episode or persist from the initial illness. Symptoms may also fluctuate or relapse over time."[2]

Long COVID is not a disease *per se*, but a multitude of symptoms that can impact three main health domains. The most common physical domain symptoms reported in long COVID are fatigue and shortness of breath. Common mental health domain symptoms reported are anxiety, depression, and post-traumatic stress disorder (PTSD), and in the cognitive domain, cognitive dysfunction (also referred to as brain fog) is also frequently reported.[3]

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There are several proposed etiologies for long COVID conditions, a topic beyond the scope of this article.

Risk Factors for Long COVID – Perhaps Less Prevalent in an Insured Working Population?

Risk factors reported for long COVID across a number of studies include increasing age, female gender, overweight and obesity, pre-existing asthma, and overall poor pre-pandemic physical and mental health. The population subsets of healthcare and social workers also report high rates of long COVID, which may be largely explained by this cohort's non-work-related sociodemographic characteristics and their work-related higher risk of initial infection. Individuals sick enough to be hospitalized for COVID-19 infection are also at greater risk of developing long COVID.[4, 5]

Socioeconomic status, as measured by education levels and by the Index of Multiple Deprivation, a widely used geography-based measure of relative deprivation based on factors such as income, environment, employment, and education,[5] has shown inconsistent results about long COVID, with some studies demonstrating a higher risk of long COVID among those living in the most deprived areas.[5]

The inconsistent results may reflect the unmet need of people who live in socioeconomically deprived areas, given that both pre-existing adverse mental and physical health states are associated with greater risk of long COVID and that these conditions are more prevalent in those who are less advantaged.[5]

One could assume that an actively employed population may be insured, of a younger average age, and have fewer comorbidities, especially comorbidities which could result in significant physical impairment. As such, it is possible that the risk factors for serious COVID-19 infections, especially those requiring hospitalization, and for long COVID, might be less prevalent in an insured working population.

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A Disease of the Young, but a Serious Disease Risk for the Old

In general, COVID-19 is today a disease of younger persons. That being said, infections with more serious complications resulting in hospitalizations and deaths tend to occur more frequently in older age groups. It would appear that the majority of the more serious COVID-19 infections are more likely to be confined to persons age 60 and older who are no longer part of the workforce.

This trend of "a disease of the young but a serious disease risk for the old" can be seen by examining infection percentages by age, hospitalizations, and mortality rates for COVID-19 in Canada and the U.S.

Table 1: COVID-19 Infection percentages by age of total cases, Canada/U.S.[6, 7, 8]		
Population ages	Canada	U.S.
0-29	41%	37%
30-59	44%	45%
60 and older	15%	18%

Note: These numbers have been rounded up or down in order to simplify viewing

Compare the dataset in Table 1 to that in Table 2, which shows hospitalization percentages by age for COVID-19. Hospitalization percentages can be a marker of the more severe infections that would increase the risk of developing long COVID.

Table 2: COVID -19 Hospitalization percentages by age group, Canada/U.S.[7, 9]		
Population ages	Canada	U.S.
0-29	9%	9%
30-59	27%	31%
60 and older	64%	56%

The most significant COVID-19 infections would manifest as death. As can be seen in Table 3 of COVID-19 mortality rates in Canada and the U.S., this is primarily confined to older individuals.

Table 3: COVID-19 Mortality percentages of total COVID-19 deaths by age, Canada/U.S.[6, 7, 9]		
Population ages	Canada	U.S.
0-29	0.4%	0.7%
30-59	7.0%	16.5%
60 and older	93%	83%

The data in Tables 1, 2, and 3 include the period prior to and after the development of COVID-19 vaccines up until July 2022 and incorporate both vaccinated and unvaccinated individuals. If vaccine uptake is assumed to be more likely in an insured population, less severe COVID-19 infections should be seen in this population and would imply decreased long COVID risk. Indeed, in a recent French study of 28,031,641 fully vaccinated individuals of ages 12 or older, lower hospitalization and mortality rates were found in the vaccinated population. Lower rates of long COVID might therefore be expected in a vaccinated insured population due to less severe infections.[10]

Other Long COVID Risk Factors – Less Likely in an Insured Working Population?

As shown in Tables 1-3, serious COVID-19 infection is a risk factor for long COVID. Age plays a major role in COVID-19's severity, but other risk factors also exist that might increase a patient's likelihood of developing long COVID. These other risk factors can be seen when reviewing the characteristics and outcomes of hospitalized COVID-19 survivors.

A study of 246 patients treated for COVID-19 in intensive care units (ICUs) who survived one year after their admission had the following characteristics: mean age 61.2 (SD 9.3); 71.5% male; and an elevated mean BMI of 28 with 25% having a BMI of >30. Only 33% had higher vocational or university educations, and 24% had one or more chronic diseases. In the follow-ups conducted one year after their ICU stay, ongoing long COVID symptoms were reported in three main domains: 74% (95% CI, 68.3% to 79.6%) reported ongoing physical issues; 26% (95% CI, 20.8% to 32.2%) reported mental health issues; and 16% (95% CI,

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11.8% to 21.5%) reported cognitive issues. In addition, of the survivors who were employed before their ICU admissions, 58% reported ongoing symptoms were still impacting their ability to work one year later, and they were working fewer hours than prior to their hospitalization or were still on sick leave.[11]

These outcomes are probably a combination of post-ICU syndrome and long COVID in a population more likely to be male, older, experiencing pre-existing comorbidities, and were severely ill with COVID-19.

The findings are similar to those for COVID-19 patients who did not have ICU stays. A study of 47,780 patients admitted to hospital for COVID-19, of whom 43,035 (90%) were not ICU patients, found a mean age of 64.5 (SD 19.2) and 55% male. Wh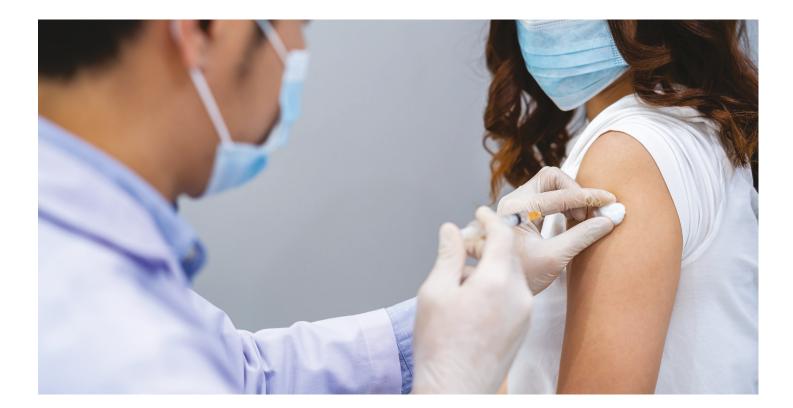en compared to the general population, persons hospitalized with COVID-19 who were primarily not admitted to an ICU were, aside from more likely to be older than age 50 and male, also more likely to be living in an economically deprived area, a former smoker, and overweight or obese.[12]

The study also found that the incidence of comorbidities in people with COVID-19 was greater than that of a matched control population without COVID-19. This was shown by a higher prevalence of previous hospital admissions and the presence of the following pre-existing medical conditions: hypertension; major adverse cardiovascular events; respiratory disease; and diabetes. During a mean follow-up period of 140 days after hospital discharge, more than 29% of these patients were readmitted (14,060 of 47,780) and slightly more than 12% died (5,875). Readmission and death occurred at rates four and eight times greater, respectively, than those for the matched control group. These outcomes were also substantially

higher for persons hospitalized with COVID-19 when compared with matched controls, even after stratifying for those admitted to the ICU versus those who were not.[12]

As the above two studies consisted only of unvaccinated persons, it might be worthwhile to review these trends in a vaccinated population, as adoption of vaccines may be more likely in an insured population. The previously mentioned French study of 28,031,641 fully vaccinated individuals may provide useful information. Again, it consisted of persons ages 12 or older who were fully vaccinated and followed from the 14th day after complete vaccination for an average of 80 days. The fully vaccinated group of 5,345 persons were hospitalized (87 hospitalizations per 100,000 person-years) for COVID-19 and 996 in-hospital deaths were recorded (16 in-hospital deaths per 100,000 person-years). As seen in previous studies of unvaccinated persons, higher rates of hospitalizations and deaths were observed in fully vaccinated persons of older ages, male gender, and social deprivation. The median age of the entire cohort was 59, 79 for the hospitalized group, and 86 for those who died in the hospital. Again, there was a significant correlation between the presence of pre-existing comorbidities and risk of hospitalization and death from COVID-19: only 9.7% of hospitalized cases and 2% (24/996) of those who died in the hospital had no identified comorbidities. In addition, of the 47 chronic diseases examined in the study, most were positively associated with an increased risk of COVID-19-related hospitalization and a slight excess risk of death.

Based on this study, the more likely uptake of vaccines and boosters by an insured working population means that this group will be less likely to experience significant future COVID-19 infections, may return to work more quickly, and may be less at risk of developing long COVID.[10]

The outcomes of the hospitalized COVID-19 survivors cited above are not particularly surprising given the baseline characteristics and risk factors of persons admitted to the hospital and ICU with moderate or severe COVID-19 infection, especially when they are coupled with the biological insult and physiological stress of such an infection.

Vaccination Reduces Risk of Long COVID

The best way to prevent long COVID is to not contract COVID-19 in the first place. That being said, given that vaccination can to some extent prevent COVID-19, or at least can prevent an infection from becoming severe enough to warrant hospitalization, vaccination should reduce the risk of developing long COVID.

Can vaccination actually reduce the risk of long COVID symptoms after breakthrough infections? The results vary, with studies indicating a reduction of long COVID due to vaccines from 15% to more than 60%.[13]

A study which followed 2,560 healthcare professionals with COVID-19 who did not require hospitalization found that a higher number of vaccine doses was associated with a lower prevalence of long COVID, defined by the study as one symptom with a duration of more than four weeks. Long COVID prevalence for this population was 41.8% (95% CI, 37.0% - 46.7%) in unvaccinated persons, 30.0% (95% CI, 6.7% - 65.2%) for those with one vaccine dose, 17.4% (95% CI, 7.8% - 31.4%) with two doses, and 16.0% (95% CI, 11.8% - 21.0%) with three doses. This study concluded that for COVID-19 infections not requiring hospitalization, two or three vaccine doses, compared with no vaccination, was associated lower long COVID prevalence.[14]

Conclusion

To date, there have not been a significant number of long-term total disability claims due to long COVID recorded in the insured population. While a significant number of claims had been anticipated, given the relatively large number of people who are reported to have demonstrated long COVID symptoms, it is possible that multiple factors in a younger, working-age population may have prevented a multitude of long-term total disability claims.

Time will tell if this pattern will continue to hold. RF

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