

COVID-19 and medical underwriting practices for life and health insurance

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SARS-CoV-2, or COVID-19, had a profound impact on many life and health insurers globally. The initial wave of illness left insurers scrambling to determine the conditions of coverage, at a time when their own operational processes were severely disrupted. After the initial waves, insurers had to move beyond the claims processing and other day-to-day operational challenges and think about how to incorporate the illness into medical underwriting and/or benefit and product design. This has been particularly difficult given the initial paucity of data, the lack of scientific agreement over the long-term implications for different cohorts of people of the virus (termed “Long Covid”), and regulatory and government pressure not to discriminate against people who have suffered with COVID-19 or COVID-19-related illness, as well as the widespread prevalence of the virus.

This paper discusses the current state of clinical understanding and research on the health implications of acute COVID-19 and Long Covid along with the responses of health and life insurers in product design, underwriting, and claims management. While COVID-19 mostly causes a short-term acute illness with few lasting symptoms, a proportion of people die and a further proportion appear to suffer from long-term consequences of the initial infection. In mid-2020, people who had recovered from COVID-19 began reporting long-lasting and severe symptoms such as fatigue, brain fog, and loss of taste and smell, giving rise to the name “post-COVID-19 condition” or “Long Covid”.

We also carried out a brief survey of life and health insurers in various countries to determine their underwriting responses and changes. We found that most insurers have not yet made significant alterations to their medical underwriting processes to allow for potential additional risks from Long Covid.

ACUTE AND POST-ACUTE COVID-19: A CLINICAL PERSPECTIVE

During the acute phase, the most common symptoms are fever, throat pain, cough, tiredness, brain fog, muscle soreness, and loss of taste and smell. In addition to the general symptoms of fever, fatigue, and brain fog, four main clusters of symptoms seem to have been observed:¹

- Respiratory symptoms (the most common): Cough and shortness of breath among others.
- Musculoskeletal symptoms: Joint pain, headache, fatigue.
- Enteric symptoms: Abdominal pain, diarrhoea.
- Mucocutaneous symptoms: Rash.

These symptoms can persist or appear during Long Covid. Fatigue, headaches, loss of taste and smell, and brain fog are more common in the Long Covid phase, whereas fever usually only occurs during the acute phase. Some frequently chosen cut-offs for duration to define Long Covid are the presence of symptoms one, three, six, or 12 months after an initial acute phase. For symptoms, the presence of at least one symptom experienced during the acute phase is generally chosen as a cut-off.² A common definition of Long Covid is the presence of at least one COVID-19-like symptom at the three-month mark. The World Health Organization (WHO) adds a criterion to the definition: that is, it is not possible to explain the symptoms by an alternative diagnosis.³

¹ Docherty, A.B. et al. (May 22, 2020). Features of 20 133 UK patients in hospital with COVID-19 using the ISAIC WHO Clinical Characterisation Protocol: Prospective observational cohort study. *BMJ*. Retrieved January 12, 2023, from <https://pubmed.ncbi.nlm.nih.gov/32444460/>.

² Michelin, M. et al. (2021). Characterising Long COVID: A living systematic review. *BMJ Global Health*. Retrieved January 12, 2023, from <https://gh.bmj.com/content/bmjgh/6/9/e005427.full.pdf>.

³ WHO (October 6, 2021). A clinical case definition of post-COVID-19 condition by a Delphi consensus, 6 October 2021. Retrieved January 12, 2023, from https://www.who.int/publications/i/item/WHO-2019-nCoV-Post_COVID-19_condition-Clinical_case_definition-2021.1.

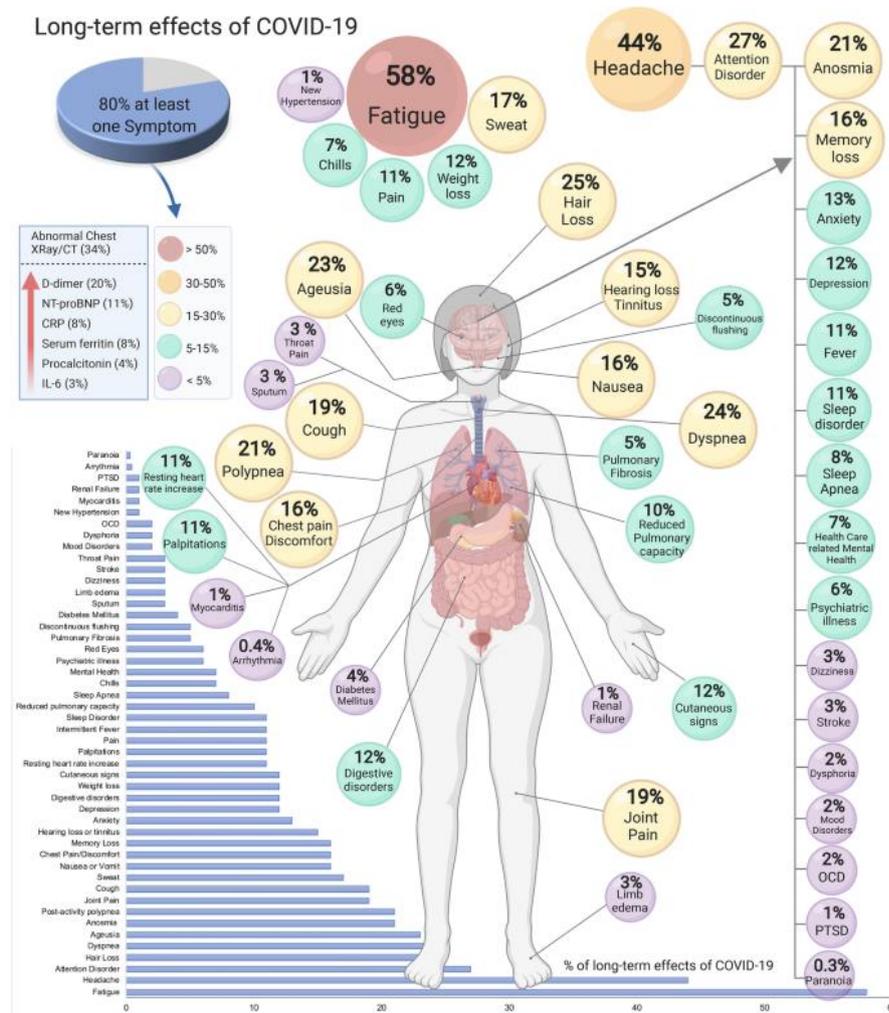
Symptoms can be very heterogenous, even if the main symptoms are fatigue, brain fog, shortness of breath, and loss of taste and smell. According to one study⁴ such symptoms are thought to be linked to:

- Organ damage, caused by either the virus itself or the immune response during the acute phase of the infection.
- Persistent inflammation that does not resolve, similar to a general post-viral syndrome.
- Post-intensive care syndrome.

Long Covid symptoms are generally self-reported and diagnoses often made based on these self-reports. These can be biased, as some people may be more likely than others to report such symptoms. Most people with self-reported Long Covid are PCR-negative,⁵ indicating that Long Covid can exist without persistent viral load. The time course used in the article reference above to suggest the start of Long Covid is 14 to 21 days.

The wide range of symptoms a Long Covid patient may experience and the lack of definitive testing make it difficult to define the condition precisely. Figure 1 shows some of the possible Long Covid symptoms as reported in one study.⁶

FIGURE 1: LONG COVID SYMPTOMS



⁴ Raveendran, A.V. (2021). Long COVID-19: Challenges in the diagnosis and proposed diagnostic criteria. *Diabetes Metab Syndr*. Retrieved January 12, 2023, from <https://pubmed.ncbi.nlm.nih.gov/33341598/>.

⁵ Michelin, M. et al., op cit.

⁶ Lopez-Leon, S. et al. (August 9, 2021). More than 50 long-term effects of COVID-19: A systematic review and meta-analysis. *Sci Rep*. Retrieved January 12, 2023, from <https://pubmed.ncbi.nlm.nih.gov/34373540/>.

While the link between loss of taste and smell, fatigue, and shortness of breath with a previous infection is documented with a high level of evidence, the linkage of the other self-reported symptoms to a previous COVID-19 infection is weaker and often assessed without an appropriate control group.⁷

Organ damage has been linked to Long Covid, the kidneys, and the cardiovascular system.^{8,9} Long Covid has been associated in one study with a decline in kidney function among a cohort of U.S. veterans.¹⁰ This study of over 1 million COVID-19 survivors and 1 million controls found a 25% higher incidence of an eGFR¹¹ decline of more than 30% in the COVID-19 group, a 44% higher incidence of a decline of more than 40%, and a 62% higher incidence of a decline of more than 50%.

One study¹² reviewed the cardiovascular outcomes for post-COVID-19 patients after an infection, showing that the most observed cardiovascular effects include myocarditis, right ventricular dysfunctions, and arrhythmias.

An association between Long Covid and a higher incidence of Type 2 diabetes has been observed,¹³ but researchers were unable to determine whether causality existed. Even if the association were indeed causal, the direction of causality would also be unclear, as it could be Type 2 diabetes or a predisposition to it that increases the risk of suffering from Long Covid.

Specific populations are more likely to suffer from certain symptoms. Loss of taste is more frequent in young and healthy populations, while respiratory failure is more common in at-risk populations. Cardiovascular problems, especially endothelial dysfunction, are more frequent in young men, whereas kidney problems have been studied in older populations.^{14,15} The table entries in Figure 2 are to be read as “condition prevalence in COVID-19-positive individuals (95% confidence interval [CI]); number of included studies.”

FIGURE 2: LONG COVID INCIDENCE FOR THE MOST COMMON SYMPTOMS [CHEN ET AL., 2022]¹⁶

SYMPTOM	ANY	MIXED HOSPITALIZED AND NONHOSPITALIZED	ONLY HOSPITALIZED
Overall Post-COVID-19 Condition	0.43 [0.39–0.46]; (31)	0.33 [0.29–0.37]; (15)	0.54 [0.44–0.63]; (14)
Fatigue	0.23 [0.17–0.30]; (28)	0.19 [0.14–0.24]; (13)	0.29 [0.21–0.40]; (11)
Memory problems	0.14 [0.10–0.19]; (9)	...	0.12 [0.09–0.17]; (6)
Dyspnea	0.13 [0.11–0.15]; (28)	0.11 [0.09–0.14]; (15)	0.17 [0.11–0.25]; (9)
Sleep problems	0.11 [0.05–0.23]; (15)	0.08 [0.01–0.34]; (5)	0.13 [0.09–0.20]; (9)
Joint pain	0.10 [0.04–0.22]; (6)

⁷ Amin-Chowdhury, Z. & Ladhani, S.N. (July 2021). Causation or confounding: Why controls are critical for characterizing Long Covid. *Nat Med.* Retrieved January 12, 2023, from <https://pubmed.ncbi.nlm.nih.gov/34140704/>.

⁸ Benedetti, C. et al. (July 21, 2020). COVID-19 and the Kidneys: An Update. *Frontiers*. Retrieved January 12, 2023, from <https://www.frontiersin.org/articles/10.3389/fmed.2020.00423/full>.

⁹ Mehandru, S. & Merad, M. (February 1, 2022). Pathological sequelae of long-haul COVID. *Nature Immunology*. Retrieved January 12, 2023, from <https://www.nature.com/articles/s41590-021-01104-y>.

¹⁰ Bowe, B. et al. (November 2021). Kidney Outcomes in Long Covid. *J Am Soc Nephrol.* Retrieved January 12, 2023, from <https://pubmed.ncbi.nlm.nih.gov/34470828/>.

¹¹ Note: eGFR is a measure of kidney function. A decline in eGFR indicates worsening kidney function.

¹² Raman, B. et al. (March 14, 2022). Long Covid: Post-acute sequelae of COVID-19 with a cardiovascular focus. *Eur Heart J*. Retrieved January 12, 2023, from <https://pubmed.ncbi.nlm.nih.gov/35176758/>.

¹³ Raveendran, A.V. & Misra, A. (2021). Post-COVID-19 Syndrome (“Long COVID”) and Diabetes: Challenges in Diagnosis and Management. *ScienceDirect*. Retrieved January 12, 2023, from <https://www.sciencedirect.com/science/article/pii/S1871402121002551>.

¹⁴ Bowe, B. et al., op cit.

¹⁵ Raman, B. et al., op cit.

¹⁶ Chen et al (2022) Global Prevalence of Post-Coronavirus Disease 2019 (COVID-19) Condition or Long COVID: A Meta-Analysis and Systematic Review

INCIDENCE AND PREVALENCE OF LONG COVID

Inclusion bias and self-reporting of symptoms should be kept in mind when looking at these figures. The WHO reports a lower incidence of 10% to 20% per infection.¹⁷

With similar definitions, symptom persistence rates of 40% have been reported for influenza,¹⁸ which may seem artificially high and indicates that these figures are to be interpreted with respect to their precise definitions and data collection methods. They may not represent what is intuitively thought of as Long Covid, because of the variety of definitions for what constitutes "Long Covid."

The UK Office for National Statistics reports that, at the time of writing this paper, 1,985,000 people (95% CI: 1,926,000 to 2,044,000) currently suffer from self-reported Long Covid in the UK; 384,000 (95% CI: 359,000 to 409,000) of them report that it affects their ability to undertake day-to-day activity "a lot" (this is the term used in the survey).¹⁹ Santé Publique France, a French governmental organization for public health, reports a figure of 2,060,000 people suffering from Long Covid in France as of April 2022.²⁰

RISK FACTORS FOR LONG COVID

The risk of developing Long Covid is not the same for all individuals, and there are known risk factors.^{21,22} Demographic risk factors include age and sex: older people have a higher incidence of Long Covid. Women are also at a 50% higher risk of developing Long Covid,²³ for reasons not yet understood.

Preexisting conditions (i.e., comorbidities) are also linked to Long Covid. Preexisting conditions at increased risk of Long Covid include hypertension, obesity, hyperglycemia, and inflammation.²⁴ The role of hypertension and inflammation is regarded by some researchers as causal because of the inflammatory component of COVID-19 and because the COVID-19 receptor is implicated in the regulation of blood pressure.^{25,26}

One study [Chan Sui Ko et al., 2022]²⁷ examined a prospective cohort of hospitalized patients with COVID-19 and used multivariable adjusted regression models. It concluded that female sex, hypertension, and the number of initial symptoms have a significant impact on persistent symptoms in hospitalized patients, in contrast to severity of acute COVID-19 infection.

EVOLUTION OF LONG COVID IN HOSPITALIZED PATIENTS

In a 2021 cohort study,²⁸ hospitalized patients were followed for 12 months and the evolution of each symptom was reported during the period, as summarized in the table in Figure 3. The study had a control group of individuals matched for age, sex, and comorbidities. The investigators concluded that, at 12 months, even though health had improved compared to the six-month mark, the health status of infected people was significantly

¹⁷ WHO (December 16, 2021). Coronavirus disease (COVID-19): Post-COVID-19 condition. Retrieved January 12, 2023, from [https://www.who.int/news-room/questions-and-answers/item/coronavirus-disease-\(covid-19\)-post-covid-19-condition](https://www.who.int/news-room/questions-and-answers/item/coronavirus-disease-(covid-19)-post-covid-19-condition).

¹⁸ Taquet, M. et al. (September 28, 2021). Incidence, co-occurrence, and evolution of Long Covid features: A 6-month retrospective cohort study of 273,618 survivors of COVID-19. PLOS Medicine. Retrieved January 12, 2023, from <https://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.1003773>.

¹⁹ UK Office for National Statistics. Prevalence of ongoing symptoms following coronavirus (COVID-19) infection in the UK. Retrieved January 12, 2023, from <https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/conditionsanddiseases/datasets/alldatarelatingtoprevalenceofongoingsymptomsfollowingcoronaviruscovid19infectionintheuk>.

²⁰ Santé Publique France (July 21, 2022). Post-COVID-19 disease (also called Long Covid) in France. Retrieved January 12, 2023, from <https://www.santepubliquefrance.fr/maladies-et-traumatismes/maladies-et-infections-respiratoires/infection-a-coronavirus/documents/enquetes-etudes/l-affection-post-covid-19-appelée-aussi-covid-long-en-france.-point-au-21-juillet-2022>.

²¹ Khunti, K. et al. (April 19, 2021). Long Covid — metabolic risk factors and novel therapeutic management. Nature Reviews Endocrinology. Retrieved January 12, 2023, from <https://www.nature.com/articles/s41574-021-00495-0>.

²² Sudre, C.H. et al. (March 10, 2021). Attributes and predictors of Long Covid. Nature Medicine. Retrieved January 12, 2023, from <https://www.nature.com/articles/s41591-021-01292-y>.

²³ Ibid.

²⁴ Khunti, K. et al., op cit.

²⁵ Bosso, M. et al. (September 11, 2020). The Two Faces of ACE2: The Role of ACE2 Receptor and Its Polymorphisms in Hypertension and COVID-19. ScienceDirect. Retrieved January 12, 2023, from <https://www.sciencedirect.com/science/article/pii/S2329050120301418>.

²⁶ Panigrahy, D. et al. (May 8, 2020). Inflammation resolution: A dual-pronged approach to averting cytokine storms in COVID-19? Cancer and Metastasis Reviews. Retrieved January 12, 2023, from <https://link.springer.com/article/10.1007/s10555-020-09889-4>.

²⁷ Chan Sui Ko et al. Number of initial symptoms is more related to long COVID-19 than acute severity of infection: a prospective cohort of hospitalized patients

²⁸ Huang, L. et al. (August 28, 2021). 1-year outcomes in hospital survivors with COVID-19: A longitudinal cohort study. The Lancet. Retrieved January 12, 2023, from [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(21\)01755-4/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(21)01755-4/fulltext).

worse than that of non-infected controls. However, as with all cohort studies, it is difficult to attribute this difference only to Long Covid because of potential biases: for example, it is possible that being hospitalized for COVID-19 is an indicator of an already poorer health.

Each entry in the table in Figure 3 is to be read as “Number of people who report the symptom/number of people in the cohort,” i.e., the percentage of people who reported the symptom. A low p-value refers to the existence of a significant difference between the six-month and the 12-month mark.

FIGURE 3: LONG COVID EVOLUTION IN HOSPITALIZED PATIENTS

SEQUELAE SYMPTOM	TOTAL (N=1276)		P-VALUE
	6 MONTHS	12 MONTHS	
Any one of the following symptoms	831/1227 (68%)	620/1272 (49%)	<0.0001
Fatigue or muscle weakness	636/1230 (52%)	255/1272 (20%)	<0.0001
Sleep difficulties	335/1230 (27%)	215/1272 (17%)	<0.0001
Hair loss	268/1230 (22%)	135/1272 (11%)	<0.0001
Smell disorder	135/1230 (11%)	57/1272 (4%)	<0.0001
Palpitations	118/1230 (10%)	117/1272 (9%)	0.88
Joint pain	132/1225 (11%)	157/1272 (12%)	0.13
Decreased appetite	97/1230 (8%)	37/1272 (3%)	<0.0001
Taste disorder	89/1230 (7%)	37/1272 (3%)	<0.0001
Dizziness	69/1230 (6%)	65/1272 (5%)	0.56
Nausea or vomiting	17/1229 (1%)	11/1272 (1%)	0.26
Chest pain	57/1225 (5%)	92/1272 (7%)	0.0023
Sore throat or difficult to swallow	47/1230 (4%)	44/1272 (3%)	0.57
Skin rash	39/1230 (3%)	55/1272 (4%)	0.1
Myalgia	33/1225 (3%)	54/1272 (4%)	0.013
Headache	25/1225 (2%)	61/1272 (5%)	0.0001

EVOLUTION OF LONG COVID IN NON-HOSPITALIZED PATIENTS AND COMPARISON WITH INFLUENZA

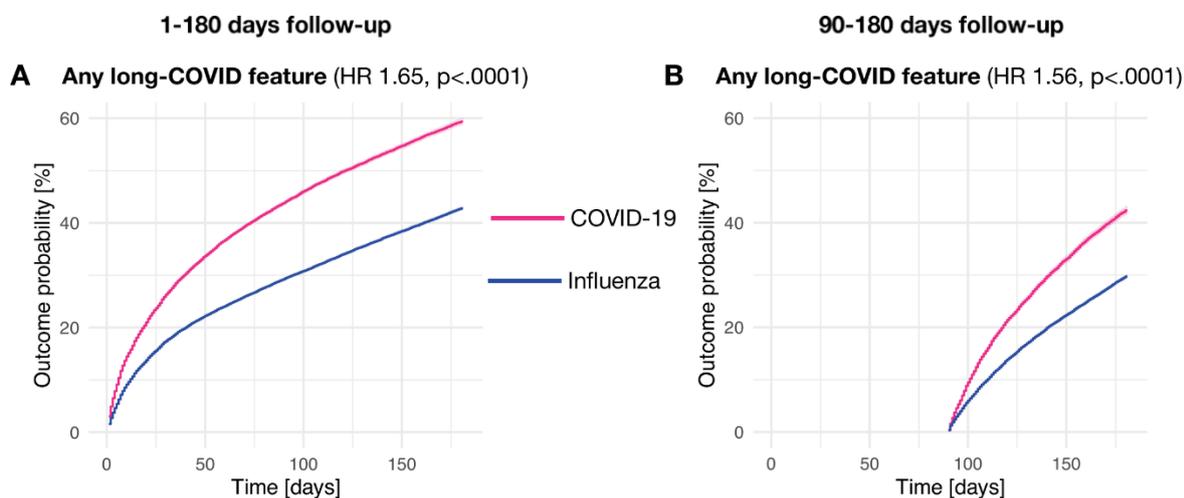
Specific data on the evolution of Long Covid in the general population is sparse. As mentioned earlier, long-lasting symptoms are not specific to COVID-19. They can be observed with other infections by other viruses, such as Ebola, human herpesvirus, influenza, or Epstein-Barr. A 2021 paper²⁹ looked at the difference in long-lasting symptoms between COVID-19 and influenza. It studied nine long-lasting symptoms that can be observed after both COVID-19 or influenza infections (breathing difficulties/breathlessness, fatigue/malaise, chest/throat pain, headache, abdominal symptoms, myalgia, other pain, cognitive symptoms, and anxiety/depression), by analyzing the data from 273,618 patients diagnosed with COVID-19 and 114,449 patients with influenza.

The probability of suffering from at least one long-lasting symptom was higher in COVID-19 than in influenza. Fifty-seven percent of patients infected with COVID-19 suffered from at least one symptom in the first six months, and over one in three patients suffered from at least one symptom between the third and the sixth month after the infection, which is statistically significantly more than following an influenza infection. In addition, among these patients two in five did not record any symptoms during the first three months.

²⁹ Taquet, M. et al., op cit.

Figure 4 represents the cumulative incidences of at least one Long Covid-like symptom (the hazard ratio refers to COVID-19 vs. influenza). The cumulative incidence indicates the increase over time. The fact that the symptoms do not level off for the first six months indicates that new symptoms keep appearing in some people. As observed in hospitalized patients, the health status of most patients starts to significantly improve after six months. While still unclear, the timescale for Long Covid is likely on the order of months for most people.

FIGURE 4: OUTCOME PROBABILITY OF ANY LONG-LASTING SYMPTOM AFTER COVID-19 AND INFLUENZA INFECTION



IMPLICATIONS FOR HEALTH AND LIFE INSURERS

Direct data on the increase in medical consumption in the months following a COVID-19 infection are scarce; but given the clinical effects, it seems reasonable to assume that health insurers might expect higher costs in the medium to long term for a population with Long Covid, especially for kidney and cardiovascular problems, which tend to have relatively high costs to manage. A study carried out by FAIR Health on patients with a new ICD-10 code for Long Covid concluded that the U.S. Department of Health and Human Services hierarchical condition categories (HHS-HCC) risk score increased in patients with a post-COVID-19 condition.³⁰ The HHS-HCC risk score identifies patients who are likely to consume more healthcare resources and incur more healthcare-related costs.

Some treatments may help to manage the symptoms of Long Covid, e.g., physiotherapy for dyspnea, medications for pain symptoms, or nutritionist consultations for gastrointestinal symptoms, which can have an added cost to insurers, depending on the benefit schedule.

Long Covid can also lead to work disability. A 2021 study³¹ analyzed the responses of 3,762 participants from 56 countries with confirmed or suspected COVID-19 infections to a voluntary retrospective social media survey. The results show that 22.3% were not able to work at the time of the survey, due to their Long Covid symptoms. The reasons for their inability to work were given as being sick or on disability leave; some of them indicated they had to quit their job or had been fired for sickness. Moreover, 45.2% of the patients required a reduced work schedule. Pacing and activity management is considered the most efficient way to deal with Long Covid symptoms: 23.1% of survey respondents found it “significantly useful.” The authors note that the data collection method (a voluntary retrospective social media survey) may cause a strong selection and recall bias.

For protection products, product design can help keep costs down: Long Covid sufferers may recover before the time required to qualify for long-term disability payments, which is generally a fixed number of days per contract.

³⁰ FAIR Health (May 18, 2022). Patients Diagnosed With Post-COVID-19 Conditions. FAIR Health White Paper. Retrieved January 12, 2023, from <https://s3.amazonaws.com/media2.fairhealth.org/whitepaper/asset/Patients%20Diagnosed%20with%20Post-COVID%20Conditions%20-%20A%20FAIR%20Health%20White%20Paper.pdf>.

³¹ David, H.E. et al. (July 15, 2021). Characterizing Long Covid in an international cohort: 7 months of symptoms and their impact. *The Lancet: eClinicalMedicine*. Retrieved January 12, 2023, from [https://www.thelancet.com/journals/eclinm/article/PIIS2589-5370\(21\)00299-6/fulltext](https://www.thelancet.com/journals/eclinm/article/PIIS2589-5370(21)00299-6/fulltext).

The consequences for insurers will also depend on how the condition is classified legally in a country, e.g., whether it is recognized as a disability. These classifications depend on the region of interest and are in constant evolution.

A SURVEY OF CURRENT RESPONSES BY EUROPEAN AND ASIAN LIFE AND HEALTH INSURERS

Given the significant prevalence of COVID-19 and the potential large costs associated with Long Covid, we conducted a short survey of Milliman consultants in different countries to determine the extent to which the clinical literature and data were influencing the medical underwriting practices and product design for insurers in different countries. We note that some countries commonly exclude all pre-existing conditions under a moratorium approach, rather than carry out full medical underwriting to mitigate the risk of long-term complications from COVID-19.

The table in Figure 5 provides the global responses to COVID-19 in different countries from our internal consultant survey.

FIGURE 5: GLOBAL SURVEY RESPONSES

COUNTRY	MARKET	IMPACT ON MEDICAL UNDERWRITING	IMPACT ON PRODUCT/BENEFIT DESIGN
Romania	Medical insurance and life	No observed impact	Some insurers have introduced add-ons specific to COVID-19 in both health and life insurance, for example one major insurer has introduced a COVID-19 add-on for life insurance, which requires information on the COVID-19 status of persons living with the insured.
Brazil	Medical insurance	No significant impact. There was already a health form and/or medical evaluation to identify pre-existing diseases. In case of pre-existing diseases, the beneficiary is covered by temporary partial coverage, in which, during a 24-month period, the insurer does not cover surgeries, high-tech beds, and highly complex procedures related to the pre-existing disease.	No impact. Mandatory health insurance coverage in the Brazilian market refers to procedures, regardless of the disease. Thus, all procedures that are on the mandatory coverage list must be performed for a beneficiary with Long Covid.
China	Medical insurance	No observed impact.	There have been new products related to COVID-19, such as personal accident products with death benefit and quarantine benefit, as well as personal accident products with death benefit and adverse reaction benefit from COVID-19 vaccinations.
Poland	Private medical insurance (PMI) and life	No observed impact.	
France	Life	Insurers may question individuals on COVID-19 status during underwriting processes only if they have long-term conditions that resulted from COVID-19.	No observed impact following COVID-19.
Germany	Medical insurance	Cover for COVID-19 has been provided by health insurers, and so there has been a shift in medical underwriting as a result of COVID-19. Some insurers have delayed underwriting for individuals where Long Covid impacts are a concern, with the majority adding questions to their underwriting processes, including questions regarding hospitalization as a result of COVID-19.	Some insurers extended their service offering to implement special services or cooperation with third-party companies especially for COVID-19.
India	Life	Insurers are postponing underwriting decisions for up to six months after recovery of COVID-19 to ensure no Long Covid symptoms. All products are now medically underwritten, compared to previously where limited or no medically underwritten policies were sold. Life insurers ask COVID-19-specific questions as part of the medical underwriting process, questioning the historical COVID-19 experience of the individual, the severity of their condition, any complications, and information on vaccination.	Mandatory coverage for health products, including COVID-19-specific products

COUNTRY	MARKET	IMPACT ON MEDICAL UNDERWRITING	IMPACT ON PRODUCT/BENEFIT DESIGN
India	Medical insurance	No significant impact. Insurers briefly sought information about COVID-19 history and deferred applicants with active COVID-19 infection. However, over the last year insurers have resumed their pre-COVID-19 medical underwriting approaches, and there is no observed impact on underwriting decisions or premium. In Group policies, the intake employee information does not seek COVID-19 status or history. Most retail products have a waiting period and exclusions for pre-existing disease, but COVID-19 and Long Covid are not considered as a chronic pre-existing disease.	The insurance regulator launched a COVID-19-specific policy that was available through health and non-life health insurance companies as a short-term disease-specific cover with a very brief waiting period. Standard or other products have not been modified due to COVID-19.
UK	Medical insurance	Limited impact, as limited medical underwriting in the market and pre-existing conditions and associated conditions are excluded under a moratorium rather than full medical underwriting questionnaire.	Limited impact, although there has been more promotion of online general practitioner (GP) services and other remote consultation benefits.

CONCLUSION

Based on our survey of insurer practices in various countries, insurers have made limited changes to their medical underwriting processes, despite growing evidence that Long Covid could have long-lasting health impacts for a proportion of the population. During the pandemic period, insurers rightly focused on how they could provide benefits to support their covered populations who were unable to access usual medical services for months at a time. However, as more evidence emerges of potential long-term clinical impacts, insurers will need to consider the implications for medical underwriting processes, particularly where people have previously been hospitalized for COVID-19 and are at risk of Long Covid.



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