A Look at United States Hospital Indemnity Plans in a COVID-19 Environment

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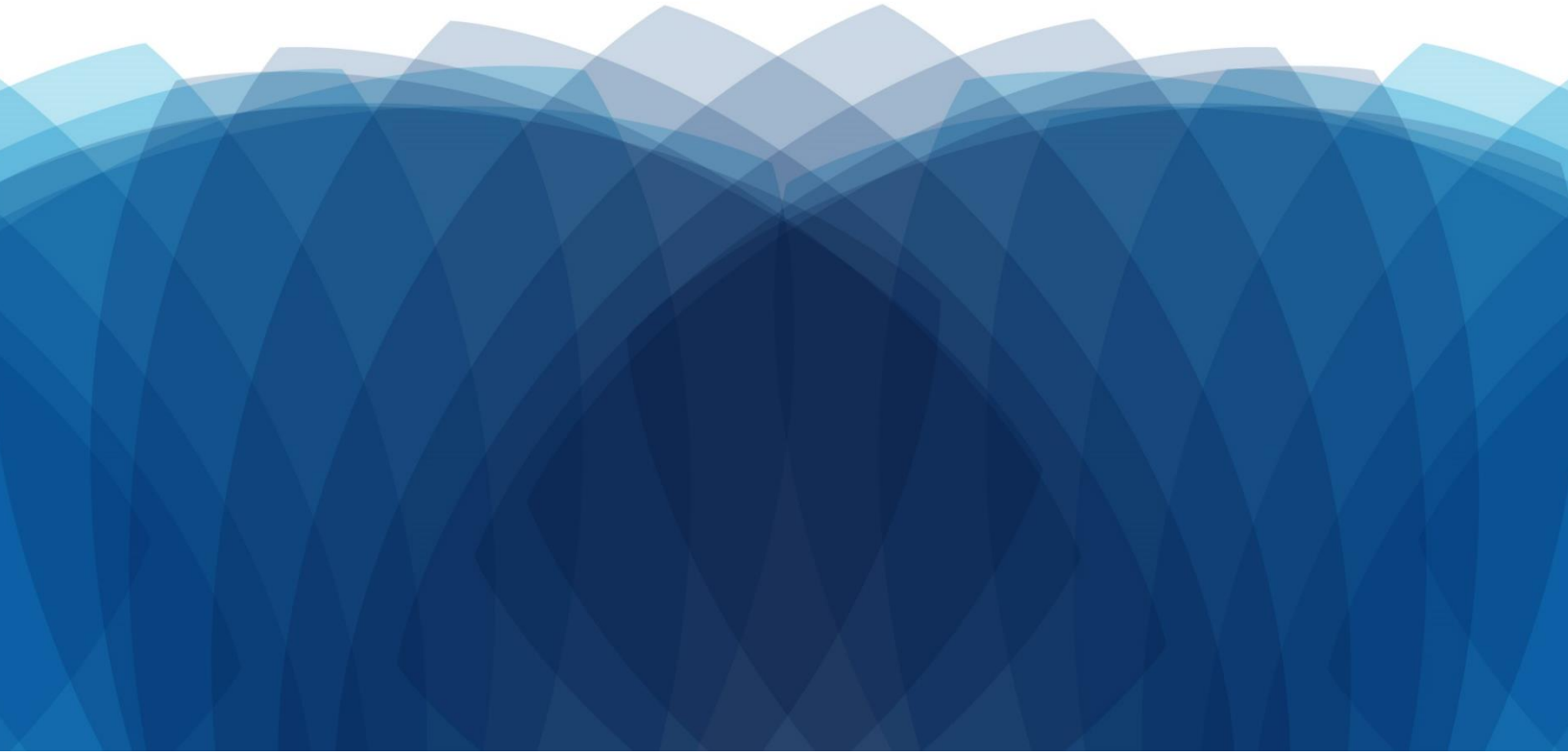

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Overview

As new terms such as “social distancing” and “flattening the curve” circle through society and the U.S. government provides an unprecedented and record-breaking $2.2 trillion stimulus package, the future is clouded in uncertainty. The attention of the nation has been focused on the health and well-being of family, friends, and loved ones. Additionally, the strain of lost income due to business closures and other economic impacts from the pandemic are causing significant problems for many households. For those Americans who remain healthy, many will be reliant for the near term upon social programs, payment concessions, and other support. For those requiring treatment or even hospitalization for the novel coronavirus disease COVID-19, the benefits of health insurance will be a key factor in their financial situations. For many, the presence of supplemental health insurance products, which provide additional cash during major illnesses, will be a major factor in mitigating the financial stress of this event.

In this report we present the findings of our analysis focused on isolating and estimating the potential financial impact of COVID-19 on hospital indemnity (HI) plans in the United States. Furthermore, we have focused on the working-age population, as supplemental HI plans are generally marketed to working-age individuals. This latter item is extremely important when comparing assumptions and results to other broader modeling efforts, as we are eliminating people of ages that have been very severely impacted by this disease but who are not typical buyers of HI policies.

In summary, plans with broader dispersions of benefits beyond hospitalization typically experience greater claim cost savings due to the impact of deferred and canceled services resulting from COVID-19. Based upon our simulations, these deferred and canceled services outweigh the impact of additional COVID-19 services for the broader plans. Plans with a narrower focus on hospitalization are more susceptible to claim cost increases, particularly in scenarios with higher simulated infection rates.

This paper discusses the claim cost impact for two pandemic scenarios across four HI plans. These scenarios are not meant to be predictive, but to illustrate the potential impact on HI plans from a range of potential pandemic outcomes. The plan designs utilized in this analysis are described in Figure 1 (next page) and all benefits are payable per day of service.

Figure 1
Plan Designs

Benefits	Plan 1	Plan 2	Plan 3	Plan 4
Hospital Admission	$1,000	$1,500	$1,000	$1,500
Daily Hospital Confinement Benefit	$100	$200	$150	$200
ICU Admission*		$1,500	$1,000	$1,500
ICU Daily Confinement Benefit*	$100	$200	$150	$200
Emergency Room			$100	$100
IP / OP Surgical			$500	$1,000
Substance Abuse				$100
Mental Illness				$100
Hospital Observation			$100	$100
Transportation			$100	$200
Lodging			$50	$100
Wellness Health Screening		$50	$50	$50
Skilled Nursing Facility			$25	$50
Ambulance			$200	$200
Diagnostic – Minor			$25	$50
Diagnostic – Major			$50	$100
Diagnostic – Invasive			$100	$150
Outpatient Physician			$25	$25
Urgent Care			$50	$50
Rehabilitation			$50	$100

** Pays in addition to daily hospital confinement benefit.*

Plans 3 and 4 included in this analysis contain a broader variety of benefits beyond just hospitalization, while Plans 1 and 2 focus on coverage for confinement events.

The model used in this analysis has been calibrated based on the illustrative plan designs and assumptions described in this report. However, this model can be calibrated for a wide variety of scenarios and plan designs in order to provide customized analysis for a carrier. By utilizing this analysis, a carrier can understand its risk exposure as the pandemic situation evolves.

Scenario Results

Scenario 1
April 21, 2020 Inflection Date
0.65% Infection Rate

In Scenario 1, ultimately 0.65% of the U.S. population tests positive for COVID-19 in 2020 and the growth rate in new cases starts to decline on April 21, 2020. A 0.65% infection rate implies that approximately 2.1 million individuals in the United States will test positive for the disease (while estimates vary, this would imply approximately 17 million people contract the disease). This simulation estimates there will be approximately 300,000 additional hospitalizations and approximately 61,000 additional intensive care unit (ICU) admissions among the working-age population. For supplemental HI products under this scenario, the overall claim costs decrease in three out of the four plans because the impact of costs related to COVID-19 is outweighed by the reduction in utilization of non-COVID-19 services such as wellness and other nonessential benefits. The richest plan experiences the largest decrease as the total claim costs contain a larger proportion of services subjected to deferral or cancellation due to the COVID-19 environment. The impact of COVID-19 was modeled at the benefit level and a summary is shown in Figure 2.

Figure 2
Scenario 1: April 21, 2020 Inflection Date, 0.65% Infection Rate

Scenario 1:	Plan 1	Plan 2	Plan 3	Plan 4
Base Claims	$83.58	$158.17	$236.32	$367.24
Cost Increases	$3.30	$6.36	$4.64	$6.42
Cost Deferrals/Eliminations	-$3.25	-$8.62	-$21.19	-$33.04
COVID-19 Total Claim Cost Impact	***$0.05***	***-$2.27***	***-$16.55***	***-$26.62***
Total Scenario 1 Claim Cost	$83.63	$155.90	$219.77	$340.62
Scenario 1 COVID-19 Impact	0.1%	-1.4%	-7.0%	-7.2%

Scenario 2
May 3, 2020 Inflection Date
1.5% Infection Rate

In Scenario 2, ultimately 1.5% of the U.S. population tests positive for COVID-19 in 2020 and the growth rate in new cases starts to decline on May 3, 2020. A 1.5% infection rate implies that approximately 5.0 million individuals in the United States will test positive for the disease. The model estimates there will be approximately 700,000 additional hospitalizations and approximately 140,000 additional ICU admissions among the working-age population. As illustrated by this scenario, Plan 1 continues to experience increased expected claim costs related to COVID-19, while Plans 3 and 4 continue to reflect lower expected claim costs due to deferrals and cancellations related to COVID-19. Plan 2, which experienced a cost decrease in scenario 1, now experiences a cost increase due to the additional COVID-19 claim events. A summary of the impacts is shown in Figure 3.

Figure 3
Scenario 2: May 3, 2020 Inflection Date, 1.5% Infection Rate

Scenario 2:	Plan 1	Plan 2	Plan 3	Plan 4
Base Claims	$83.58	$158.17	$236.32	$367.24
Cost Increases	$7.62	$14.67	$10.71	$14.82
Cost Deferrals/Eliminations	-$4.11	-$10.58	-$26.45	-$41.42
COVID-19 Total Claim Cost Impact	***$3.51***	***$4.09***	***-$15.74***	***-$26.61***
Total Scenario 2 Claim Cost	$87.10	$162.26	$220.58	$340.63
Scenario 2 COVID-19 Impact	4.2%	2.6%	-6.7%	-7.2%

Overview of Results

In our analysis, the two most impactful elements to HI claim costs were the additional costs from hospital confinements and the reduction in costs from deferred or canceled services. As such, carriers offering HI products should pay particular attention to how these factors develop over the coming weeks and months. A critical assumption utilized in this analysis is the anticipated length of COVID-19 hospital stays. Milliman has developed a length-of-stay assumption specific to COVID-19 that is based upon Milliman Health Cost Guidelines™ (HCG) data, public studies and information available about COVID-19, and clinical judgment from Milliman's medical resources. If treatment for COVID-19 improves to allow for a faster hospital recovery, this would reduce the financial impact to the product. We believe this is a likely outcome as treatment protocols are refined and impacts to this assumption can be varied in our model. Alternatively, if COVID-19 lengths of stay increase, the product could be more adversely affected.

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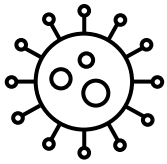
Additionally, the population's perception of the COVID-19 risk will have a material impact on whether they seek medical care in nonemergency situations. The more services that are deferred, the greater the savings to the HI plan. It is important to note that the savings will represent a combination of postponed and permanently canceled services. For instance, a knee replacement will have been deferred, but an office visit for a common cold may never take place. For deferred services, to the extent that there is capacity, insureds will begin to undergo and complete services once there is a general perception that it is safe to do so. The impact of these deferred services heavily depends upon the capacity at hospitals and doctors' offices and is assumed to not be fully recoverable in 2020.

Based upon the plan designs tested in our analysis, it is clear that the COVID-19 impact is most pronounced on those plans that focus on hospital confinement and do not provide coverage for other services. The more a plan's claim costs are attributable to benefits that are not directly impacted, or to those that are reduced, the greater the likelihood of a reduced impact to claim costs due to COVID-19.

Potential Issues Facing Carriers



The COVID-19 pandemic is evolving by the hour. If hospitalizations follow an exponential trend, additional nontraditional facilities (such as convention centers, hotels, or sports arenas) may be used as makeshift hospitals in order to temporarily increase hospital capacity. At the time this article was written, New York was utilizing a field hospital in Central Park for overflow patients. It is still unclear how hospitalization and care at nontraditional facilities will be medically coded, which may impact how carriers process and pay claims.

Beyond claim costs, carriers should expect COVID-19 to have an impact on premium collections, lapsation, and thus ultimately on loss ratios. Many workers have been temporarily furloughed or have lost their jobs completely, which will impact their ability to continue premium payments for their coverage.

> ***Carriers will have to consider whether to make premium concessions during this time or whether to follow the normal termination process.***

Premium concessions would reduce lapsation and build goodwill, but will increase the COVID-19 impact on a carrier's realized loss ratios. Additionally, it is unclear how long concessions would need to be in place in order to conserve business. For the purpose of the scenarios analyzed in this report we have simulated the COVID-19 impact relative to an annual claim cost and have not incorporated variations in lapses and premium persistency. However, the treatment of lapses may materially impact cost estimates for some carriers and should be considered in conjunction with the carrier's approach to business conservation.

Generally speaking, maternity is a key driver of claim costs for HI plans. As COVID-19 spreads, maternity benefit utilization may potentially decrease as some mothers choose to give birth to their children outside hospital settings. We believe this behavioral change can be attributed to two primary reasons: the risk of contracting COVID-19 in hospitals and the recent requirement in many facilities to restrict the presence of others such as spouses during birth. Mothers may not want to accept the risk to themselves or their newborns of catching this disease. If patients can reduce the risk of contracting COVID-19 by using midwives at home or in facilities with reduced exposure to COVID-19, then some mothers are likely to stop using maternity wards in hospitals. Additionally, the long periods of confinement at home may result in a late 2020 or an early 2021 baby boom, similar to those sometimes observed after ice storms and other natural events that confine people to their homes.

Carriers should review their policy benefits carefully to ensure that they understand where COVID-19 may impact benefits payable. While hospitalization and other major services

are obvious, for some carriers COVID-19 screening may be covered under their wellness benefits, based upon the definition utilized. If the plan does not include coverage for a COVID-19 screening, do carriers want to pay wellness benefits for COVID-19 as a societal measure? Additionally, carriers may elect to provide extra-contractual benefits such as COVID-19 waiver of premium for those who have lost their incomes.

While not considered in this study, carriers will also have to consider a wide variety of issues related to COVID-19 over the coming months:

COVID-19 Related Issues
Processing of terminations and continuation options for both permanent and temporarily furloughed workers
Impact to carrier workforce and capacity
Impact to new business sales and renewals
Product development and design implications
Introduction of additional benefits to provide coverage for COVID-19 or future pandemics
Impact to claim reporting and processing
State-mandated communications and guidance

Conclusions

As we move further into these volatile times, many questions regarding COVID-19 need to be considered. How effective will social distancing and other restrictions be? When the shelter in place and other social distancing orders are lifted, will we live in a world with seasonal COVID-19 in the same way that seasonal influenza exists? These are questions that carriers must consider when developing and maintaining HI products in 2020 and onward.

One potential long-term change may be in insureds' awareness of the value of supplemental health insurance.

Insureds who become ill will receive material sums of money from their supplemental benefits insurance carrier, which will assist with their financial strains during this pandemic. As family, friends, and coworkers hear of the support that supplemental insurance provided, it is likely that the demand for such products will increase.

As uncertain times proceed, HI carriers need to remain vigilant. While we have demonstrated the impact of various illustrative scenarios on a variety of product designs, ultimately a carrier's own plans and benefits will determine the true impact of COVID-19 on a carrier's claim costs. To that end, the model utilized in this analysis can be calibrated for a wide variety of scenarios and plan designs in order to provide customized analysis for a carrier. By utilizing this analysis, a carrier can understand its risk exposure as the pandemic evolves.

Data Sources and Methodology

The model underlying this analysis was developed by Milliman consultants to project medical costs for a broad array of health insurance plans. Beginning with that model the authors of this report have expanded the analysis to incorporate specific benefit structures and utilization assumptions appropriate for hospital indemnity coverage. This model is highly customizable and allows carriers that offer both medical and supplemental products access to a consistent, custom analytic approach across all product types.

In developing the illustrative scenarios utilized in this analysis, we relied upon actual COVID-19 case counts through April 6, 2020, and two important assumptions to simulate future COVID-19 cases: anticipated nationwide growth rate inflection date and the proportion of the population ultimately infected. The modeled inflection point is where the growth rate for future cases begins to decline. Beyond the modeled inflection point, additional new cases will be simulated, but at a slower growth each day until the new case rate drops to zero. This analysis did not factor in a recurrence, or second wave, of the virus.

Based upon the two inflection points defined in the selected scenarios and past case growth rates, two population infection rates were selected to correspond with a reasonable progression between actual and simulated cases. In establishing these infection rates, we assumed that the overall number of new cases would follow a similar progression throughout the simulation period. In reality, changes in behavior (e.g., increased or decreased impact of social distancing), testing efficiency, and other factors will impact the growth rate in future COVID-19 cases. We have calibrated the two scenarios to approximately correspond to 60,000 and 140,00 total deaths across all ages, based upon estimates that have been available from other sources over the last few weeks.

Once the overall nationwide number of COVID-19 cases is simulated, we utilize a number of assumptions to assess the cost impact on the HI plan designs being considered. Hospitalization rates, ICU admission rates, lengths of stay, recoveries, and deaths are simulated based upon public sources, Milliman data, and actuarial judgment. The assumptions vary by age and a typical worksite insured age distribution appropriate for the voluntary worksite market is utilized in compositing the assumptions used in the simulation. We have assumed no constraint upon hospital facility availability during the pandemic. We believe that most supplemental benefits carriers will provide a benefit during the pandemic crisis, even in situations where the insured receives care outside a traditional hospital setting.

The length of stay (days) for hospital and ICU confinements was developed by modeling the average length of stay (LOS) for influenza as indicated in Milliman's HCG data. A morbidity factor was applied to the average influenza LOS in order to reflect the increased severity of COVID-19.

Based upon these assumptions and the benefit amounts, we model the additional cost attributed to COVID-19 by category. In this analysis, the categories of services anticipated to be affected by COVID-19 are hospital confinements (including ICU), emergency room visits, and office visits. Additionally, a reduction in services not related to COVID-19 was modeled to reflect a reduced utilization of nonessential healthcare services during this pandemic, based upon reported cases. Our belief is that there will be some pent-up demand for wellness services, along with other services once the immediate pandemic crisis ends; however, due to limited healthcare capacity we believe the deferred wellness benefits will not be recovered in 2020.

The baseline HI claim costs were calculated utilizing Milliman HCG data in conjunction with specific adjustments and assumptions reflecting our knowledge and experience in the supplemental HI market. All of the illustrative plan designs assume full coverage for maternity with no maternity waiting period, as this design is common in the HI worksite market.

Limitations

Our estimates rely on a number of key assumptions, which are subject to extreme uncertainty given the limited experience available at this time. These assumptions include the overall confirmed infection rate for the community, assumed infection rates by age and gender, projected costs by severity, severity distributions by age, the impact of hospital capacity limitations, and the frequency and cost impact associated with deferred or avoided non-COVID-19 services.

Our projection model is premised on assumptions of the spread of the disease. These assumptions include how many people are infected in a population, the overall confirmed infection rate of those people, how that infection rate is different by age and gender, how severe those infections are across the population, and the frequency and cost impact associated with deferred or avoided non-COVID-19 services, among others. Scientific knowledge of these items is incomplete and new data on the spread of COVID-19 in the United States is still emerging. In addition, actions taken by government authorities and the healthcare system related to the COVID-19 pandemic are rapidly changing. We expect these assumptions to change as more information becomes available and encourage close monitoring to ensure estimates are calibrated to the most current information. Due to the limited information available on COVID-19, any analysis is subject to a substantially greater than usual level of uncertainty.

This model analyzes medical service utilization. Service costs, cost sharing, and prescription drug costs are not considered. The tool will help estimate the impact of COVID-19 medical service utilization on claim costs for 2020. Estimation for 2021 and beyond is out of scope.

COVID-19 may cause long-term healthcare issues for survivors, and that impact is not included in this model. The timing and impact of a vaccine is also not estimated in this model, nor is the impact of any disease-modifying therapies that may emerge as treatments for COVID-19.

Guidelines issued by the American Academy of Actuaries require actuaries to include their professional qualifications in all actuarial communications. The authors of this report are members of the American Academy of Actuaries and meet the qualification standards for performing the analyses documented in this report.

This report is intended to demonstrate the capabilities of our Hospital Indemnity COVID-19 model and is not intended to provide results for any one company.

While Milliman performs numerous analyses using our projection models and related information, our cost estimates cannot be expected to predict the future. Although we believe the assumptions and methods underlying this analysis are reasonable and appropriate based on the data and other information available, any future experience is certain to differ from these results due to statistical fluctuations and to the extent that current assumptions are not realized.

Contact Us

Milliman provides insights into an expanding and competitive supplemental product marketplace. We plan to monitor the COVID-19 outbreak and, depending on its development, may conduct additional research and analysis on the outbreak's impact on carriers who offer supplemental products.

If you are interested in learning more detailed information about the supplemental product market, please contact us about our flexible engagement options.

The authors would like to acknowledge the exceptional work of Sean Mendes and Parth Patel in the development of the models underlying this report.

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