

Impact of COVID-19 on Pension Plan Actuarial Experience and Assumptions, Including Mortality

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Key Points

- There is much uncertainty about the impacts of COVID-19 on both near-term and assumed long-term future mortality.
- The effects of the pandemic on the economy, on workforce patterns, and on plan sponsors' budgets are likely to be far more financially significant to most pension plans, at least in the near term, than the effect on mortality. There is expected to be wide variance among the plans themselves, regardless of whether they are private sector, multiemployer, or public plans.
- As plan experience and medical research unfold, actuaries will be able to incorporate this information as they consider both short- and long-term effects on actual plan experience and future economic and demographic assumptions.

COVID-19 is responsible for over 200,000 deaths in the U.S. as of the date of publication of this issue brief, according to Johns Hopkins University School of Medicine. While these deaths have been concentrated more heavily among those over age 65 so far, there have been deaths in all age groups particularly for those who also have underlying health issues. Significant race gaps exist, with death rates disproportionately higher for Black and Latino/Hispanic populations in all age categories. As of the end of August, COVID-19 restrictions have caused some to delay needed medical care for other health conditions. There is also concern that “deaths of despair” are increasing during this period. The situation is evolving as some areas of the country are still seeing surges in cases as well as the steadily rising nationwide increase in deaths, and there is concern that this first wave of the pandemic will continue during the rest of 2020. Despite promising developments, the timing and widespread availability of a vaccine is still unknown at this time, and there is uncertainty about how effective it will be and how widely it will be utilized initially.

During this challenging time, pension actuaries are being asked about the effects of COVID-19 on pension plans. It is understandable that many of these questions focus on mortality and the potential reduction in pension costs. However, actuaries also would consider the impacts of the pandemic on all the assumptions and underlying data used to value pension plans. The effects of the pandemic on the economy, on employment patterns, and on plan sponsors' budgets are likely to be far more financially significant to most pension plans, at least in the near term, than the effect on mortality. These implications will be addressed in more detail below.



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With regard to mortality, there are two primary areas of potential effect—observed mortality and assumed future mortality. This paper discusses both these components of a mortality assumption. Observed mortality includes excess deaths—defined as the number of deaths above and beyond what would have been expected under normal circumstances. Excess mortality is thus mortality that is attributable to crisis conditions rather than just those deaths that have been officially linked to COVID-19. (Please see the note at the end of the paper for mortality data that provides additional perspective on COVID-19 deaths.)

Observed Mortality

For many companies with calendar-year fiscal years, year-end accounting measurements typically do not reflect full plan participant status updates, due to timing considerations. Actuaries and plan sponsors are faced with determining whether excess mortality during 2020 is significant enough to warrant accelerating the participant census update or otherwise reflecting in year-end measurements. However, the level of excess mortality to date and the expected advanced ages at which most of the excess deaths occur would appear unlikely to have a significant impact on the liabilities for most plans. For example, few if any plans are likely to see a doubling of normal annual mortality rates due to the pandemic, and yet even a doubling of the one-year mortality rate is unlikely to reduce benefit obligations by much more than 1% for the typical plan. If mortality increases late in the year, this effect might not be seen until the following census update due to time lags in reporting processes.

For many corporate and multiemployer pension plans and some public plans, the next measurement date will be the end of this calendar year, by which time much of the immediate effect of the pandemic during 2020 on the plan may be known. Information about actual deaths in 2020 will be reflected in the next update of participant data (i.e., January 1, 2021) and no special action on the part of the actuary would be required to incorporate this information. (Participants' compromised health status due to COVID-19

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or to their delay of other medical care in the aftermath of the onset of the pandemic will not be known at this time, but could lead to future increases in mortality.)

Where an actuary uses an approach that differentiates among different population subgroups (e.g., by reflecting blue-collar/white-collar, varying mortality by benefit/income level, or more refined variations on this approach, such as utilizing participants' ZIP codes) then data updates alone will change the composition of the participant population and automatically give rise to some change in overall mortality expectations going forward which may or may not be significant. For most plans, it is believed that this effect is likely to be relatively small, but plans with employee groups particularly exposed to COVID-19—such as those that cover essential workers who cannot work remotely—may see an elevated impact in portions of their population.

Assumed Future Mortality

The mortality assumption generally consists of a current “base” rate of mortality, as well as a projection of future changes—typically reductions (or “improvements”) in the rate of mortality. If actuaries responsible for developing these assumptions were to follow their normal processes, it would take a number of years for the effects of COVID-19 to have any impact at all on assumed future mortality for most plans. Over time, the increase in mortality would be reflected in observations and would carry through to future projected rates of improvement and to the next generation of base mortality tables or to plan-/population-specific tables based on the experience of those populations. However, the question of whether it is appropriate simply to carry the existing methodology forward when it comes to reflecting the impact of COVID-19 would be something to be considered.

If COVID-19 is a one-off (black swan) event with no long-term implications on mortality, then some might argue that the excess deaths resulting directly or indirectly from the pandemic would appropriately be excluded from any analysis for developing base mortality rates or future mortality improvement trends. If COVID-19 is expected to have lingering effects, or a continuing acceleration of cases during the remainder of 2020 and into the 2021 plan year, then perhaps the actuary¹ might reflect those aspects in the mortality assumption. However, the actuary might need more information to develop the rationale under which these adjustments should be made. Simply including excess mortality during 2020 (and perhaps 2021) with standard mortality and using these higher rates of mortality to develop base mortality rates or projected mortality improvements in the typical manner may not give the most appropriate answer.

¹ For certain purposes, the plan sponsor technically has responsibility for selecting the mortality assumption. However, this is typically done in consultation with the actuary. For purposes of this discussion, it is assumed that the plan sponsor will follow the actuary's recommendation.

Some have suggested that COVID-19 will have lingering effects on health that will increase rates of mortality among those previously infected. This would mean higher rates of mortality will persist, although likely not at the same levels experienced during the pandemic. Additional information about the long-term health effects to develop such a premise would be needed. Where significant, these lingering health effects could also have an impact on both disability incidence and disability mortality assumptions.

Others have suggested that because COVID-19 and its secondary effects (such as avoiding non-COVID-19-related needed medical evaluation and procedures) disproportionately impacts those who are already in poor health, the excess deaths that have occurred thus far are concentrated among those who were most likely to die in the near term in the absence of the pandemic (accelerating into a shorter period experience that would have happened over a slightly longer time frame). The remaining population will be comprised of fewer of these individuals than would have previously been the case and thus lower rates of mortality might be seen in the upcoming years (after reflecting a short-term increase). Again, more scientific data would be needed to validate such a presumption and whether it would be offset by the “lingering effects” data. Analyzing the distribution of deaths and how these are related to factors associated with higher mortality (such as lower benefit/income levels) may start to answer this question.

Along similar lines, some have suggested that habits developed during the current pandemic, such as more diligent hand-washing and mask-wearing, may serve to slow the spread of other diseases that currently exist as well as new diseases in the future, thereby lowering future rates of mortality. On the other hand, pandemics could become more common in the future. If so, it remains to be seen how the lessons learned during this pandemic will be applied to limit future spikes in mortality.

Until there is more information, actuaries might not be able to assess which of these viewpoints are most relevant or whether the effects are significant enough to merit reflecting. In the absence of any such information, many actuaries might conclude that the most supportable course of action is to reflect updated data but otherwise continue to use the same assumptions for future mortality improvement that have been in use. It is possible that actuaries for plans that disproportionately cover essential workers on the front lines, such as first-responders or grocery store workers, might reach different conclusions.

Other Demographic and Economic Implications

Workforce Implications

The demographic and/or economic consequences from COVID-19 are expected to have far more significant impact on pension plans (at least in the short term) than mortality. Some of these implications, such as those on the plan participants, will need to be considered in determination of year-end accounting measurements. For some plan sponsors, there have been layoffs and furloughs during 2020 with rehiring occurring in 2020 or perhaps planned for 2021. Other job losses are likely to be permanent. How these affected individuals earn service under their plan might vary. Some plan sponsors have offered voluntary reduction-in-force programs in response to the pandemic. Higher-than-expected voluntary terminations and retirements at an earlier age might occur among those who are concerned about returning to their workplace after quarantining. This concern could be greater among public-facing workers such as teachers and medical personnel. Plans that heavily subsidize early retirement benefits may see more significant impacts than those who do not. On the other hand, there could be lower involuntary turnover as the economic shocks and uncertainty of the pandemic and the need for employer-sponsored health care may cause some workers to stay in their current jobs. Those employees who would otherwise terminate for other opportunities could be deterred from doing so by diminished hiring processes and challenges of a job search during the pandemic. Some plans (primarily defined contribution plans) that permit participants to commence benefits after age 59½ while actively employed may have experienced higher rates of utilization than expected as participants look to bolster family finances.

Those participants who have remained employed may have taken a base pay cut or can be expected to receive lower bonus payments. Some of the pay cuts that have already been announced publicly have been limited to executive levels (so above the qualified plan limits), but some have gone deeper to a broader population. Whether these pay cuts are temporary or permanent and how they should be reflected in year-end accounting measurements as well as future valuations is a matter to be determined. Select and ultimate compensation increase rates may be warranted. Use of 2019 pay information rather than 2020 data may be more indicative of the expected future state.

It is not yet clear what types of longer-term effects might be seen. Changes in working patterns (the necessity of working from home) could make it easier for workers to remain in their current job or, conversely, might open a wider range of future job opportunities. It may be that the pandemic is a short-term shock event that primarily impacts the economy and participant and plan sponsor behavior in the near term. Accordingly,

actuaries might evaluate whether select and ultimate assumptions make sense for certain categories of assumptions and might consider more frequent updates to assumptions as additional information emerges.

For plans where COVID-19-related workforce and mortality implications are financially significant, actuaries might consider new estimation procedures to be used for year-end disclosure, for example, a one-time earlier census data collection.

Plan-Specific Implications

As noted above, there are other possible outcomes of the pandemic that could have significant implications on plan sponsors and the plans themselves.

Some of these are noted below.

- Impairment of an entire industry or the outlook for an individual employer that makes it impossible to remain as a going concern or to continue pension plan sponsorship
- Reductions in benefit levels or elimination of benefit accruals for current or future participants due to plan sponsor economic distress
- Reductions in funded status due to poor asset returns and declining interest rates (which can result in an increase in measured liabilities)
- Sharp reductions in the ongoing revenues available to support public pension plans due to decreased tax collections—for example, elevating interest in short-term contribution relief and/or benefit design changes
- Slow and/or partial recoveries in industry (e.g., construction, entertainment, tourism) employment that has the effect of damaging a multiemployer plan’s anticipated contribution base, putting the plan more at risk
- Varied impact on pension plans based on the socioeconomic levels of participants, consistent with the disproportionate effects of COVID-19
- Increases in disability incidence and mortality from those recovering from COVID-19 and those who have delayed needed non-COVID-19 medical care during the quarantine period
- More significant morbidity and disability impacts on plans covering health care workers, which have many of their participants on the front line; similarly, public plan employees that provide “essential services” for their communities have seen heightened exposure, especially in safety categories that include first responders
- Revised benefits for many public plans’ “duty” death and potentially disability benefits when related to exposure to COVID-19 on the job; these enhanced benefits could offset lower liabilities caused by heightened mortality experience
- Possible effect on plans with significant survivor benefits, as the virus might spread easily within a household with a member exposed

Retiree medical plans share a lot of characteristics with pension plans and many of the considerations discussed above will apply to those plans as well. Although not the focus of this discussion, a few considerations are worth mentioning:

- The effect of changes in mortality can be somewhat more significant for these plans than for pension plans—particularly for plans that provide significant supplemental coverage to Medicare-eligible participants.
- Health care spending related to COVID-19, while significant for some individuals and for some parts of the population, may have been more than offset by declines in other medical services for many plans. Over the next few years there could be a resurgence in spending if these services are merely delayed, and perhaps even an increase to the extent that the deferral of care results in adverse health consequences. Lingering COVID-19-related effects could also raise future health care needs. Whether these effects might continue over the long term is even more uncertain.

Conclusion

The COVID-19 pandemic is evolving day by day, with much uncertainty as to how the economy and plan sponsors will be affected. While the excess mortality associated with the pandemic could have an impact on certain plans, other workforce demographic and economic implications appear to be far more financially significant. There will be wide variance among plans considering how the particular industry/plan sponsor/workforce fares in this challenging environment. As experience unfolds and more insights into the pandemic are gained over time, actuaries will be able to incorporate this information to the extent possible as they consider both the short- and long-term effects on current, actual plan experience, and the assumptions used to reflect future expectations.

Note: According to the Human Mortality Database for the most recent U.S. experience data, the 2017 U.S. population census was about 325 million, and 2.8 million deaths occurred in 2017. Those age 65 or older accounted for about 51 million people with 2.1 million deaths, which is about 73.5% of all deaths. This represents a death rate of 4.1% in 2017 for the 65+ population.

With a hypothetical assumption of 300,000 additional deaths in the 65+ population attributable to COVID-19 in some way, the overall death rate for the 65+ population would increase to 4.7%, a meaningful change. In this example, without additional COVID-19-related deaths, the population maturity ratio that is defined as the portion of those over 65 to those over age 20 would be 21.4%, and assuming 300,000 additional deaths by the end of the year, this ratio would be 21.3%. Generally, this result also points to a relatively small “observed” mortality impact, which—for pension plan experience purposes—is likely to result in a reduction in retiree liabilities.

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