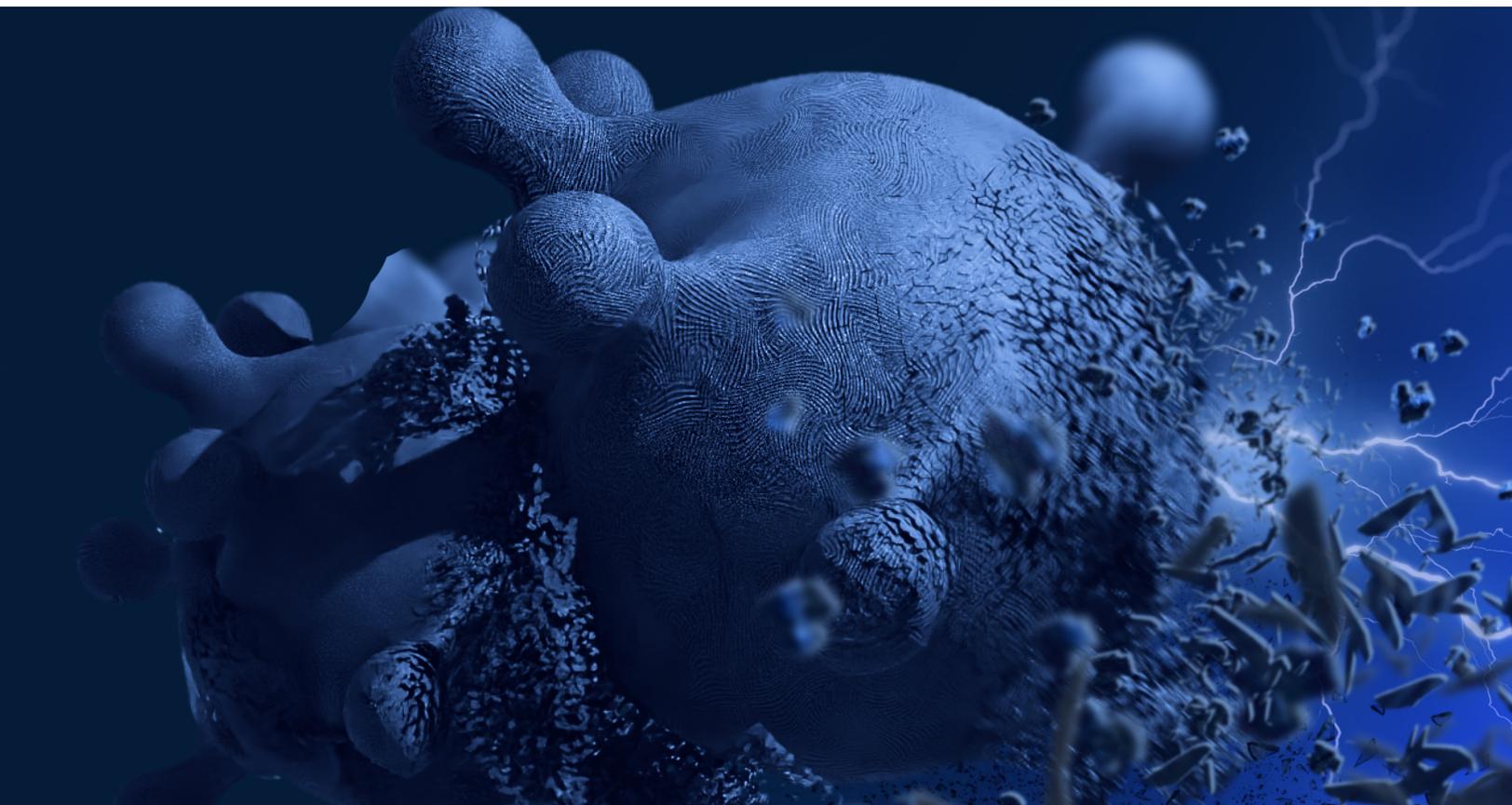


Healthcare Practice

The gathering storm: The affordability challenge of endemic COVID-19

Even as the acute threat to lives from the COVID-19 pandemic recedes, the ongoing challenges for the healthcare industry will persist.

by Addie Fleron, Pooja Kumar, Shubham Singhal, and Matt Wilson



The once-in-a-century pandemic thrust the healthcare industry into the teeth of the storm. The combination of accelerating affordability challenges, access issues exacerbated by clinical staff shortages and COVID-19, and limited population-wide progress on outcomes is ominous. This gathering storm has the potential to reorder the healthcare industry and put nearly half of the profit pools at risk. Those who thrive will tap into the \$1 trillion of known improvement opportunities by redesigning their organizations for speed accelerating productivity improvements, reshaping their portfolio, innovating new business models to refashion care, and reallocating constrained resources. The healthcare industry has lagged behind other industries in applying these practices; players that are able to do so in this crisis could set themselves up for success in the coming years. This article is the third in our series of five articles addressing the gathering storm.

It is well understood that COVID-19 is here to stay as an endemic disease due to the combination of rapidly waning immunity after infection or vaccination and the mutating nature of the SARS-CoV-2 virus. As societies move past the public-health measures of the acute pandemic phase, the prevalence of disease has the potential to remain high—potentially more than 100 million annual cases in the United States. Given the lack of cross-immunity with other diseases, this caseload represents a step-change increase in morbidity with which our health system must grapple.

The scenario that we discuss in this article is one in which endemic COVID-19, without a major change in trajectory, could add approximately \$220 billion to our total health system costs by 2027. This estimate is based on conservative assumptions on what share of current costs are

likely to remain in the coming years of endemic COVID-19. This cost impact is exacerbated by the demographics and health status of the US population. A relatively high disease prevalence in a population with advanced age and with underlying health conditions that increase risk (for example, diabetes) could result in a steady stream of hospitalizations and infection spikes with each successive wave, and bring with it a range of other costs that society must bear. This scenario does not include any financial estimates from broader economic costs beyond healthcare expenses such as those driven by increased absenteeism, both for direct cases and for caregivers, and other economic disruption.

The ongoing costs of treating COVID-19 can be divided into four main categories: the cost of treating acute COVID-19 (including hospitalization, physician visits, and medication); ongoing testing and vaccination; the burden of long COVID; and increased morbidity from other conditions that COVID-19 is likely to impact, notably growth in chronic disease burden and in behavioral health. The evidence and outlook for the progression of COVID-19 symptomatic illness and exacerbations will continue to evolve and is inherently uncertain. We have analyzed these potential ongoing costs based on the best available evidence (Exhibit).

Acute COVID-19 treatment

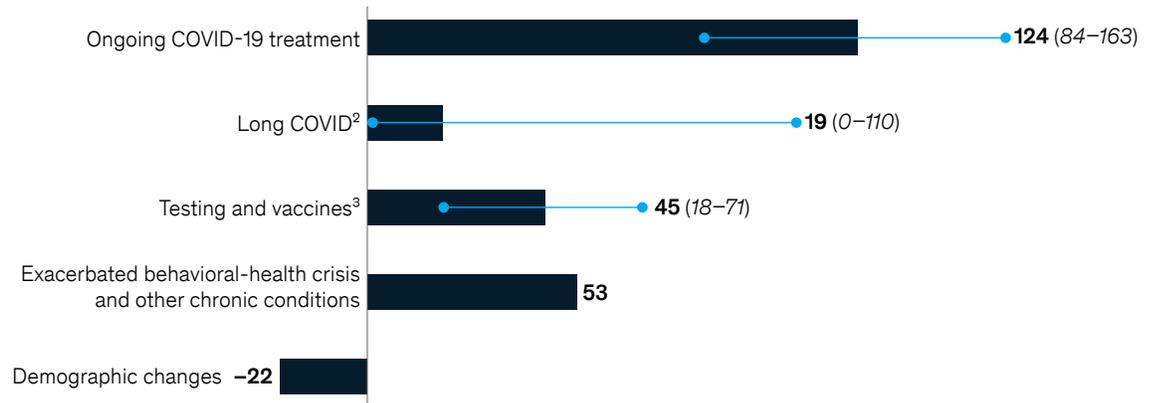
Within acute COVID-19 treatment, hospitalizations are likely to be the biggest driver of treatment cost going forward. According to our modeling, 80 percent of the cost of ongoing treatment will come from patients who require hospitalization. Although virulence of future strains may vary, it is likely that as long as COVID-19 remains a part of our near-term future, the elderly and those with comorbidities will continue

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Exhibit

Across factors, the total additional costs of treating COVID-19 could be over \$200 billion.

Impact on cost of care from COVID-19-related factors and exacerbations of other conditions, 2027,¹ \$ billion



¹Total range of \$137 billion–\$379 billion is based on scenario analysis using McKinsey's COVID-19 Epidemiological Scenario Planning Tool (v13.3), which includes a range of 110 million–220 million annual cases, of which 10–15% require outpatient treatment; 4,100–6,100 people per day require non-ICU hospital admission; and 400–900 per day require ICU admission. Cost of treatment estimates are from Blue Cross Blue Shield and FAIR Health. All figures are scaled to nominal 2027 estimates.

²Long COVID treatment costs are based on an estimate that at least 3–12% of cases result in long COVID (UK Office for National Statistics) for 3–12 months, published estimates of long COVID symptoms (UpToDate), and standard treatment costs for those symptoms (MEPS). The upper estimates of long COVID incidence assume approximately 20 million US long COVID cases per year, based on data on current rates of long COVID from the US Census Bureau's July–August 2022 Household Pulse Survey. There is significant uncertainty in ascertaining prevalence and resulting cost impact of long COVID, and data continue to become available on a frequent basis as more research is conducted. Our aggregate analysis, based on these enumerated data sources, uses a point estimate of \$19 billion as a conservative estimate based on available data. For both ongoing COVID-19 treatment and long COVID, higher incidence rates would result in an estimate at the higher end of the range.

³Testing and vaccine estimates are based on 2021 costs per test and per vaccine and on data from HHS and the CDC as to annual demand for testing and boosters. For this factor, higher utilization of testing (times per person, per year) would result in an estimate at the higher end of the range. All figures are scaled to nominal 2027 estimates.

to experience some level of ongoing need for inpatient care. Around 1.0 to 1.5 percent of symptomatic COVID-19 patients may require hospitalization, suggesting sustained rates of more than 4,000 daily admissions nationally.¹ Further, 10 to 15 percent of admitted patients are likely to require intensive care,² leading to human suffering as well as additional burden on the healthcare system. The remaining costs of acute COVID-19 will come from physician visits, antiviral medications, and other factors.³

In total, caring for acute COVID-19 could translate to an ongoing cost impact of more than \$120

billion per year. Moreover, our healthcare facilities and caregivers will experience continued demand, particularly as we will likely see seasonal or irregular peaks of the disease that will stress our nation's healthcare workforce in some geographies. Two and a half years into the pandemic, we are still seeing higher rates of absenteeism during peaks as clinical workers become sick, or have alternative options such as locums work. Furthermore, several geographies are reporting a consistent lack of certain subspecialized classes of labor, for example, lab technicians and certain types of frontline staff, who have alternatives outside healthcare in today's labor market.

¹ McKinsey COVID-19 Epidemiological Scenario Planning Tool (v13.3); "COVID-19 medical and hospitalization costs: National," FAIR Health, 2021; F. Abdullah et al., "Decreased severity of disease during the first global omicron variant COVID-19 outbreak in a large hospital in Tshwane, South Africa," *International Journal of Infectious Diseases*, March 2022, Volume 116; Joseph A. Lewnard et al., "Incidence, clinical outcomes, and transmission dynamics of severe coronavirus disease 2019 in California and Washington: Prospective cohort study," *BMJ*, May 12, 2020; Henrik Salje et al., "Estimating the burden of SARS-CoV-2 in France," *Science*, May 13, 2020, Volume 369, Issue 6500.

² McKinsey COVID-19 Epidemiological Scenario Planning Tool; "COVID-19 medical and hospitalization costs," 2021, A. Danielle Luliano et al., "Trends in disease severity and health care utilization during the early omicron variant period compared with previous SARS-CoV-2 high transmission periods—United States, December 2020–January 2022," *CDC Morbidity and Mortality Weekly Report*, January 28, 2022; "Incidence, clinical outcomes, and transmission dynamics of severe coronavirus disease 2019 in California and Washington," May 13, 2020.

³ "Infographic: COVID-19 patients with high-risk conditions 3X more likely to need the ICU," BCBS, February 9, 2021.

Testing and vaccination

COVID-19 testing and vaccination have become a part of our lives, and we anticipate that demand for both will continue.

This year, we're on track to administer 390 million PCR tests in the United States.⁴ Annualizing the lowest week of demand from this year would translate to a need for 150 million tests. We also expect to see continued demand for rapid at-home COVID-19 tests. Triangulating the potential number of viral episodes and rates of influenza-like diseases, we could need 800 million or more rapid tests per year.⁵

On the vaccine front, immunity from infection appears to wane after a few months, although protection against severe disease seems to last longer.⁶ Moreover, new variants have shown their ability to evade immunity from prior infection and vaccines based on older strains. We still don't know whether, longer term, we will need annual boosters and, if we do, what they may look like (for example, one shot, two shots, bivalent/multivalent, or combined with flu vaccine). However, many experts, including current US Food and Drug Administration leaders, expect that annual COVID-19 vaccination will be recommended,⁷ so we can estimate a trend toward the 170 million doses of flu vaccine that Americans get annually. What does this all add up to?

Ongoing testing and vaccination could cost \$45 billion per year across pharmaceutical and administration spend.

Long COVID

It's safe to say that there is a lot we don't know about long COVID, but what we do know is starting to paint a picture for what this disease may mean for our healthcare system and for patients.

Fundamentally, COVID-19 is a multiorgan disease, so it's no surprise that long COVID has been linked to over 200 symptoms, ranging from fatigue to chronic kidney disease.⁸ Estimates of the prevalence of long COVID currently range from 5 to 50 percent.⁹ One recent large-scale study from the UK Office of National Statistics estimated the prevalence of long COVID symptoms in 3 to 12 percent of those who had tested positive.¹⁰ The US Census Bureau National Pulse Survey data released recently estimate 7.6 percent of the adult population, or 20 million individuals, suffer from long COVID in the United States. The duration of long COVID is under much discussion, with current studies demonstrating a broad duration range from three to 12 months or longer.¹¹

As noted in the exhibit, the estimates of long COVID-related costs per year, based on diverse data sources, range widely from zero

⁴ "Trends in number of COVID-19 cases and deaths in the US reported to CDC, by state/territory; Daily trends in number of COVID-19 deaths in the United States reported to CDC," Centers for Disease Control and Prevention, January 17, 2021. The CDC estimates that approximately 195 million COVID-19 Nucleic Acid Amplification Tests (NAATs) were performed from January–June 2022. Extrapolation of the same average daily test volume through the rest of the year estimates approximately 390 million tests before the end of 2022.

⁵ Currently, most private health plans are required to provide coverage/reimbursement for over-the-counter, at-home COVID-19 tests. See "Biden-Harris administration requires insurance companies and group health plans to cover cost of at-home COVID-19 tests, increasing access to free tests," HHS, January 10, 2022. State Medicaid and CHIP plans are also required to cover at-home tests without cost sharing. The potential number of tests per year, like many estimates associated with endemic COVID-19, is preliminary, and could change drastically if attitudes toward testing change or if tests are no longer free of charge from the consumer perspective.

⁶ Yair Goldberg, et al., "Waning immunity after the BNT162b2 vaccine in Israel," *New England Journal of Medicine*, December 9, 2021; Daniel R. Feikin et al., "Duration of effectiveness of vaccines against Sars-CoV2 infection and COVID-19 disease; results of a systematic review and meta-regression," *Lancet*, February 21, 2022; "Pfizer and BioNTech provide update on Omicron variant," Pfizer press update, December 8, 2021.

⁷ Robert Califf, Peter Marks, and Janet Woodcock, "COVID-19 vaccination—becoming part of the new normal," *JAMA*, 2022, Volume 327, Number 19.

⁸ Heidi Ledford, "How common is long COVID? Why studies give different answers," *Nature*, June 20, 2022; Hannah E. Davis et al., "Characterizing COVID in an international cohort: 7 months of symptoms and their impact," *Lancet*, July 15, 2021; Joan B. Soriano et al., "A clinical case definition of post-COVID-19 condition by a Delphi consensus," *Lancet*, December 21, 2021; Ani Nalbandian et al., "Post-acute-COVID-19 symptoms," *Nature Medicine*, March 22, 2021.

⁹ "How common is long COVID?" *Nature*, June 20, 2022; Chen Chen et al., "Global Prevalence of post-COVID 2019 condition or long COVID: A meta-analysis and systematic review," *Journal of Infectious Diseases*, April 16, 2022; "Self-reported long COVID after infection with the omicron variant in the UK," UK Office of National Statistics, July 18, 2022.

¹⁰ "Technical article: Updated estimates of the prevalence of post-acute symptoms among people with coronavirus (COVID-19) in the UK: 2021 April 2020 to 1 August 2021," UK Office of National Statistics, September 16, 2021.

¹¹ Benjamin Abramoff and Mark E. Mikkelsen, "COVID-19: Evaluation and management of adults with persistent symptoms following acute illness ("Long COVID")," UpToDate, August 2022.

to more than \$100 billion. Without a clear consensus, we note a conservative estimate to quantify long COVID's potential effects adding some \$20 billion per year of health-care spend. This estimate does not take into account the associated impacts on the healthcare workforce, including the burden on healthcare workers who are themselves impacted or have family members who require ongoing care and support.

Other impacts of COVID-19

The impacts discussed above are all related to the costs of treating or preventing COVID-19 or long COVID. COVID-19 has also led to increased morbidity in other conditions due to missed screenings and changes in healthcare-seeking behavior as well as behavioral health. How significant could these effects be?

Behavioral-health needs have skyrocketed in the age of COVID-19. Prior to the pandemic, spending on behavioral health was growing at about 2.5 percent per year. In 2020–21, this spend jumped to 8.4 percent growth. Many reasons are cited for this increase, including social isolation during lockdowns, loss of loved ones, uncertainty arising from infection of individuals or their family members, and loss of jobs and economic uncertainty. While that level of growth in need may not persist, we are nowhere near the baseline growth rate we saw prepandemic. Changes catalyzed by COVID-19 in how behavioral health is accessed, including increased awareness, reduced stigma, widespread adoption of tele-behavioral health, enhanced insurance coverage, and expanded employer support, will continue to drive growth.

We are seeing the stresses that these impacts place on our healthcare ecosystem firsthand, with many providers struggling to maintain adequate staffing for their programs and facilities, individuals and families facing long wait times for care, and emer-

gency departments seeing increases in “boarding” (stays of more than 24 hours) for patients experiencing psychiatric crises due to shortages in available hospital- or community-based treatment options. With the July 2022 introduction of the new 988 Suicide and Crisis Lifeline, the US behavioral-health system is making progress toward alleviating some of this pressure by improving access to care for individuals in crisis, though more remains to be done.

Chronic conditions are also getting worse, often driven by a COVID-19 infection or deferred care. Our research shows that we can expect the cost of care for chronic conditions to increase by 1 percent over baseline by 2027. This is a long-term impact of behavior that began early in the pandemic period, where significant numbers of patients canceled or deferred needed care. These cost increases come from exacerbations: for example, in the case of deferred care, the average cost of treating a patient with chronic obstructive pulmonary disease can increase between 7 and 11 percent due to the increase in symptom severity, and delays in detecting or treating cancer can lead to stage progression.¹²

These effects could increase the cost of care by \$57 billion by 2027.

Separately, reduction in care needs associated with COVID-19 mortality, that is, for example, what healthcare spending in 2027 would have been for those who have died from COVID-19, accounts for some \$20 billion of avoided costs. These costs, due to demographic changes, are netted out in our calculation.

The impact across all of COVID-19's various effects could increase the cost of care by approximately \$220 billion, a 5 percent increase over our baseline healthcare spend as a nation. A wide range around this number exists, as we are still learning about this virus as it evolves.

¹² “Understanding the hidden costs of COVID-19's potential impact on US healthcare,” McKinsey, September 4, 2020. Analysis has been updated to reflect more recent data and now includes cancer, congestive heart failure, chronic obstructive pulmonary disease, diabetes, depression, and hypertension.

The healthcare system has some levers to mitigate these costs, however. Known public-health measures, including those minimally disruptive to economic, social, or education activities, can mitigate these costs but would require reaching societal consensus to adopt them, which has been elusive to date.

In order for the healthcare system to navigate these impacts, three overarching questions should be addressed.

Can we further prevent direct COVID-19-related costs? The simplest way to reduce or manage these costs is to avoid them. Measures that can reduce caseload and protect against severe disease, such as ensuring high vaccination rates, reducing transmission, or providing rapid treatment, can help to influence these costs. In a world where COVID-19 is endemic, an understanding of the long-term costs of endemicity may change the “calculus” for how we invest today to prevent cases and severe disease. Predictive analytics that recommend boosters to those patients that would most benefit from them, testing, pharmaceutical interventions, and home-care supports for vulnerable individuals—as opposed to blunt messaging for whole populations—can make a difference. Similarly, ongoing efforts to contain the costs of testing, vaccination, and treatment can help to reduce one of the largest categories of ongoing COVID-19 spend.

Can we build resiliency into the health system to navigate surges and the sustained burden of COVID-19 and mitigate the costs?

Some of the most dramatic impacts (on both health and cost) have come from systems that were overwhelmed by surges. Health systems and payers need to plan for these peaks as an ongoing phenomenon, integrating them into their workforce plans and staffing models. As the bulk of costs are driven by hospitalizations, continued innovation and use of treatments that can keep people out of the hospital and out of the ICU will become increasingly important.

Can we mitigate second-order effects of living with COVID-19, such as long COVID, chronic care, and behavioral health? Considerable heterogeneity across these effects exists. Perhaps the biggest uncertainty is long COVID and what impact it will have long term. Investments in characterizing the disease and developing treatment protocols and new medications, such as seen with the recent investments in the Long COVID Research Initiative, are essential to minimizing the burden of this emerging phenomenon.¹³

The industry should be prepared for COVID-19 to remain a reality for many years to come, with impacts on our patients, our workforces, and how we plan and operate. We can take actions now to start addressing each of these impacts.

¹³ Amy Proal, Nick Harrold, Henry Scott-Green, Helga Gutmane, and the Long Covid Research Initiative team, “Introducing a global initiative to address long Covid,” [lc19.org/news/](https://www.lc19.org/news/), September 8, 2022.

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