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2020 Year in Review

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Foreword

By the end of March 2020, it became apparent the year would fall into two parts: the "normal" period before COVID-19, and everything that has followed, including our efforts to find the "next normal."

It is fair to say that the winter of 2020–21 may appear to be the darkest time in our experience of the pandemic. Rising COVID-19 case numbers, delays in elective or preventative care, strained critical capacity, a workforce at risk of burnout, and cascading mental health and substance use metrics among patients and providers are keeping many stakeholders awake at night.

Yet amid enormous challenges facing every facet of the healthcare industry, steps forward have been taken to mitigate the crisis and create positive change. We anticipate these trends to accelerate throughout 2021:

Technology-driven innovation. New entrants and incumbents continue to search for ways to engage patients through digital and mobile platforms. While the pace of change in healthcare has lagged other industries in the past, the COVID-19 pandemic may shift that dynamic. For example, the pandemic has driven a rapid expansion in virtual care—and, as our research highlighted, long-term potential exists to virtualize up to $250 billion of current US healthcare spend. In the realm of artificial intelligence, a 2020 joint report between the European Union's EIT Health and McKinsey noted that venture capital funding for the top 50 firms in healthcare-related AI was reaching $8.5 billion, and big tech firms, startups, pharmaceutical and medical-devices firms, and health insurers are all engaged with the burgeoning AI ecosystem.

Investment in preventive health measures and transformation in the delivery of care. It is expected that the effects of COVID-19 will cost the global economy up to 8 percent of real GDP in 2020, according to the McKinsey Global Institute. Yet each year, poor health for a patient costs twice as much in real GDP when accounting for premature deaths and lost productivity among the working-age population. The proposed solutions include genomics to deliver more targeted prevention and treatment; data science and AI to detect and monitor disease and enhance research; tech-enabled delivery to expand and reimagine access; and advances in the understanding of the biology of aging.

Addressing healthcare disparities and a growing focus on equity. Intersecting health and social conditions—such as physical health or behavioral health challenges, unmet social needs, and racial inequity—are correlated with poorer health outcomes. COVID-19 has amplified existing inequitable health outcomes, and its resulting economic disruption could cause long-term ripples. For example, in our midyear McKinsey Consumer Health Insights survey, we found that while Black and Hispanic/Latinx American healthcare consumer respondents were more likely to attempt to find COVID-19 testing, generally they were less successful. Black Americans are on average about 30 percent more likely to have health conditions that exacerbate the effects of COVID-19. Our Center for Societal Benefit through Healthcare aims to help clients address some of these deeply relevant societal issues, including racial and ethnic disparities in access to care, social determinants of health, rural health, maternal health, and behavioral health.

Increased choices for sites of care. While the shifting of care out of a hospital setting is not new, COVID-19 has accelerated this trend. The next decade of care could be increasingly varied across sites, integrated around the patient through digital and analytics within patient-centered ecosystems, and driven by scale and performance. Virtual health technologies, such as remote monitoring, also may allow primary care and specialty care practices to expand their virtual patient interactions. Prior to the COVID-19 pandemic, one study found that health systems, under value-based care arrangements, demonstrated 17 percent savings when they provided virtual care with their existing healthcare professionals.

The next steps for healthcare reform. The pandemic potentially set the stage for healthcare reform along three dimensions: COVID-19-era waivers that could become permanent; actions that may be taken to strengthen the healthcare system to deal with pandemics; and reforms to address COVID-19. Between early March 2020 and mid-August, the Centers for Medicare & Medicaid Services had introduced more than 190 waivers and modifications. While some of these measures will continue only during the pandemic, leaders could assess whether other initiatives, such as expansion of telehealth access, are worth preserving. In December, the White House announced it would add more than 60 services to the Medicare telehealth list that will continue to be covered beyond the end of the public health emergency. These efforts collectively may tie into trying to mitigate spikes reflecting tertiary effects of COVID-19; for example, in an analysis from March to June 2020, we found an increase of 17 percent in "excess deaths" among Americans. Data and technology through predictive analytics may be able to help direct prevention and resources to those most at risk.

Flexibility and agility. In a McKinsey survey of health system CFOs conducted this year, more than 90 percent of respondents reported that COVID-19 will have a negative financial impact, even after accounting for federal and state funding. Ongoing financial pressure on independent physician groups could lead to a new wave of consolidation and new affiliations driven by health systems, payers, and private equity. We expect health systems to continue consolidating to achieve more scale and re-invest in technology and digital/virtual, alternate sites of care, and risk-bearing assets. Given the level of uncertainty, healthcare leaders may continue to seek ways to maximize agility and flexibility, allowing them to more quickly and ably respond to changing market dynamics and ensure resiliency.

While we have published extensively on healthcare this year, we hope this compendium offers you a chance to read and reflect on some core insights. Finally, as professionals who work with healthcare stakeholders across the industry and around the world, we also offer our thanks. While the next normal may not yet be here, we look forward to walking toward it with you.

Sincerely,

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Disclaimer: *These materials reflect an accelerated response to the COVID-19 crisis. These materials reflect general insight based on currently available information, which has not been independently verified and is inherently uncertain. Future results may differ materially from any statements of expectation, forecasts or projections. These materials are not a guarantee of results and cannot be relied upon. These materials do not constitute legal, medical, policy or other regulated advice and do not contain all the information needed to determine a future course of action. Given the uncertainty surrounding COVID-19, these materials are provided "as is" solely for information purposes without any representation or warranty, and all liability is expressly disclaimed. References to specific products or organizations are solely for illustration and do not constitute any endorsement or recommendation. The recipient remains solely responsible for all decisions, use of these materials, and compliance with applicable laws, rules, regulations and standards. Consider seeking advice of legal and other relevant certified/licensed experts prior to taking any specific steps.*

SELECTED QUOTES FROM 2020

Resilience in healthcare: The COVID-19 challenge

There is no doubt that the patient-provider experience during the past several months has accelerated virtual models of care by five to ten years.

Annie Lamont
Cofounder and Managing Partner,
Oak HC/FT

Steve Collis
Chairman, President and CEO,
AmerisourceBergen Corporation

The importance of the medical supply chain has never been clearer. My hope is that after this crisis, we'll have an enduring discussion about the supply-chain function. How can we create high-quality, robust, safe, and transparent supply chains?

It was our ability to get discharges, to get patients out of our emergency room, to help our health center and shelter colleagues care for their patients in place that really kept our system from being overwhelmed.

Kate Walsh
President and CEO,
Boston Medical Center

Telehealth: A quarter-trillion-dollar post-COVID-19 reality?

Oleg Bestsennyy, Greg Gilbert, Alex Harris, and Jennifer Rost

Telehealth has helped expand access to care at a time when the pandemic has severely restricted patients' ability to see their doctors. Actions taken by healthcare leaders today will determine if the full potential of telehealth is realized after the crisis has passed.

COVID-19 has caused a massive acceleration in the use of telehealth. Consumer adoption has skyrocketed, from 11 percent of US consumers using telehealth in 2019 to 46 percent of consumers now using telehealth to replace cancelled healthcare visits.[1] Providers have rapidly scaled offerings and are seeing 50 to 175 times[2-4] the number of patients via telehealth than they did before. Pre-COVID-19, the total annual revenues of US telehealth players were an estimated $3 billion, with the largest vendors focused in the "virtual urgent care" segment: helping consumers get on-demand instant telehealth visits with physicians (most likely, with a physician they have no relationship with).[5] With the acceleration of consumer and provider adoption of telehealth and extension of telehealth beyond virtual urgent care, up to **$250 billion of current US healthcare spend could potentially be virtualized**.[6]

This shift is not inevitable. It will require new ways of working for a broad set of providers, step-change improvements in information exchange, and broadening access and integration of technology. The potential impact is improved convenience and access to care, better patient outcomes, and a more efficient healthcare system. Healthcare players may consider moves now that support such a shift and improve their future position.

Telehealth has surged under COVID-19

Many of the dynamics highlighted in Exhibit 1 are likely to be in place for at least the next 12 to 18 months, as concerns about COVID-19 remain until a vaccine is widely available. During this period, consumers' preferences for care access will continue to evolve, and virtual health could become more deeply embedded into the care delivery system.

However, challenges remain. Our research indicates providers' concerns about telehealth include security, workflow integration, effectiveness compared with in-person visits, and the future for reimbursement.[7] Similarly, there is a gap between consumers' interest in telehealth (76 percent) and actual usage (46 percent). Factors such as lack of awareness of telehealth offerings, education on types of care needs that could be met virtually, and understanding of insurance coverage are some of the drivers of this gap.[8]

What is the full potential for telehealth and virtual care?

We identified five models for virtual or virtually enabled non-acute care and

analyzed the full potential of healthcare volume and spend that could be delivered this way (see technical appendix on p. 15). These models of virtual care have increasing requirements to engage broader and broader portions of the healthcare delivery system, going from offering one-off urgent visits, to building omnichannel care models that deliver a large portion of office visits virtually or near virtually, to embedding virtual services in home care models. They include:

1. **On-demand virtual urgent care** as an alternative to lower acuity emergency department (ED) visits, urgent care visits, and after-hours consultations. These care needs are the most common telehealth use cases today among payers. This allows a consumer to remotely consult on demand with an unknown provider to address immediate concerns (such as an acute sinusitis) and avoid a trip to the ED or an urgent care center. Such usage could be further scaled to address a

Exhibit 1

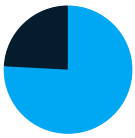
How has COVID-19 changed the outlook for telehealth?

1 Consumer

Shift from:

11%
use of telehealth in 2019

To:



76%
now interested in using telehealth going forward

While the surge in telehealth has been driven by the immediate goal to avoid exposure to COVID-19, with more than 70 percent of in-person visits cancelled,[1] 76 percent of survey respondents indicated they were highly or moderately likely to use telehealth going forward,[2] and 74 percent of telehealth users reported high satisfaction.[3]

2 Provider

Health systems, independent practices, behavioral health providers, and others rapidly scaled telehealth offerings to fill the gap between need and cancelled in-person care, and are reporting

50–175x
the number of telehealth visits pre-COVID-19.[4]

In addition, **57%** of providers view telehealth more favorably than they did before COVID-19 and **64%** are more comfortable using it.[5]

3 Regulatory

Types of services available for telehealth have greatly expanded, with the Centers for Medicare & Medicaid Services (CMS) temporarily approving more than

80 new services

and lifting restrictions on originating site, allowing Medicare Advantage plans to conduct risk assessments via telehealth, and adding other regulatory flexibilities to increase access to virtual care.[6]

[1] McKinsey COVID-19 Consumer Survey, April 27, 2020.
[2] McKinsey COVID-19 Consumer Survey, May 20, 2020.
[3] McKinsey COVID-19 Consumer Survey, April 13, 2020.
[4] Ibid.
[5] McKinsey COVID-19 Physician Survey, May 2020.
[6] "Medicare telemedicine health care provider fact sheet," March 17, 2020, cms.gov.

larger portion of low acuity visits previously seen in EDs.

2. **Virtual office visits** with an established provider for consults that do not require physical exams or concurrent procedures. Such visits can be primary care (such as chronic condition checks, colds, minor skin conditions), behavioral health (such as virtual psychotherapy sessions), and some specialty care (select follow-up visits such as virtual cardiac rehabilitation). An omnichannel care model that fully leverages virtual visits includes a mix of telehealth and in-person care with a consistent set of providers, improving patient convenience, access, and continuity of care. This model also enables clinicians to better manage patients with chronic conditions, with the support of remote patient monitoring, digital therapeutics, and digital coaching, in addition to virtual visits.
3. **Near-virtual office visits** extend the opportunity for patients to conveniently access care outside a provider's office, by combining virtual access to physician consults with "near home" sites for testing and immunizations, such as worksite clinics or retail clinics. For example, a virtual visit of a patient with flu or COVID-like symptoms could be followed up by a trip to a nearby retail clinic for a flu or COVID-19 test, with a subsequent follow-up virtual check-in with the primary care physician to consult on follow-on care.
4. **Virtual home health services** leverage virtual visits, remote monitoring, and digital patient engagement tools to enable some of these services to be delivered remotely, such as a portion of an evaluation, patient and care giver education, physical therapy, occupational therapy, and speech therapy. Direct services, such as wound care and assistance with daily living routines, would still occur in person, but virtual home health services could enhance the patient's and caregiver's experience, extend the reach of home health providers, and improve connectivity with the broader care team. For example, a physical therapist could conduct virtual sessions with elderly patients at their home to improve their strength, balance, and endurance, and to advise them how to avoid physical hazards to reduce risk of falls.
5. **Tech-enabled home medication administration** allows patients to shift receiving some infusible and injectable drugs from the clinic to the home. This shift can happen by leveraging remote monitoring to help manage patients and monitor symptoms, providing self-service tools for patient education (for example, training for self-administration), and providing telehealth oversight of staff (for example, an oncologist overseeing a nurse delivering chemotherapy to a patient at home and monitoring for side effects). This would be coupled with home delivery of the therapeutics.

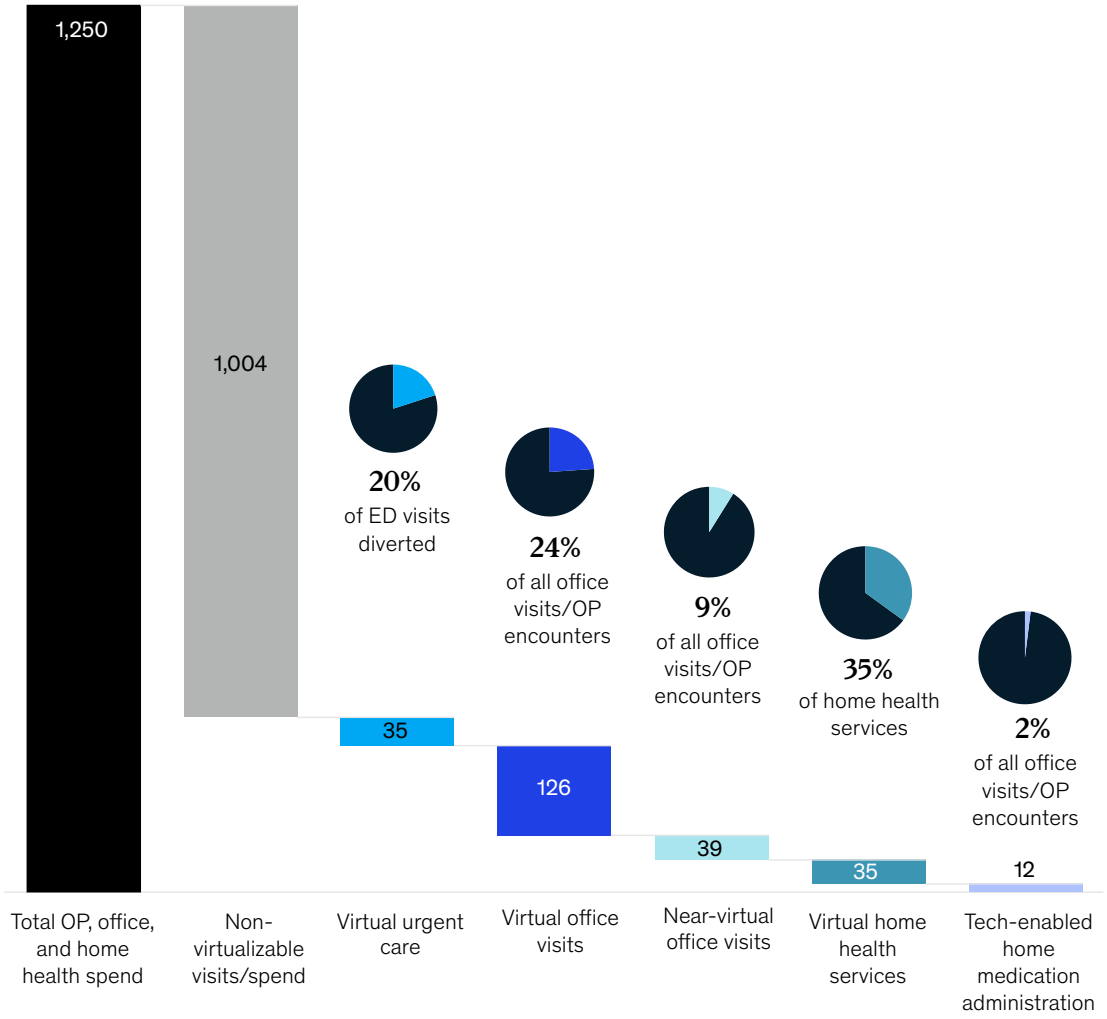
Our claims-based analysis suggests that approximately 20 percent of all emergency room visits could potentially be avoided via virtual urgent care offerings, 24 percent of healthcare office visits and outpatient volume could be delivered virtually, and an additional 9 percent "near-virtually." Furthermore, up to 35 percent of regular home health attendant services could be virtualized, and 2 percent of all outpatient volume could be shifted to the home setting, with tech-enabled medication administration. Overall, these changes add up to $250 billion in healthcare spend in 2020 that could be shifted to virtual or near-virtual care, or 20 percent of all office, outpatient, and home health spend across Medicare, Medicaid, and commercially insured populations (Exhibit 2).

Scaling telehealth does more than alleviate patient and provider concerns over the next 12 to 18 months until a COVID-19

Exhibit 2

Commercial OP, office, and home health spend, could potentially be virtualized.

Current OP and office visits that can be virtually enabled
Commercial, Medicare, and Medicaid 2020 estimated,[1] billions of dollars



ED, emergency department; OP, outpatient.
[1] Projected from 2018 commercial and Medicare spend, using National Health Expenditures.
Source: Anonymized claims data representative of commercial, Medicare, and Medicaid utilization

vaccine is available. Telehealth can increase **access to necessary care** in areas with shortages, such as behavioral health, **improve the patient experience**, and **improve health outcomes**. Fundamentally, the integration of fully virtual and near-virtual health solutions brings care closer to home, increasing the convenience for patients to access care when they need it and the likelihood that they will take the right steps to manage their care. These solutions can also make healthcare more efficient; evidence prior to COVID-19 shows that telehealth solutions deployed for chronic populations can improve total cost of care by 2 to 3 percent.[9] The actual opportunity is likely greater once stakeholders embed telehealth as the new normal (for example, driven by improved abilities to manage chronic patients, potential increases in provider productivity).

Sidebar 1

What changes need to happen to realize the full potential of telehealth?

This value will not happen without concerted efforts by healthcare stakeholders, innovations in care models, adoption of new technologies, and supporting infrastructure.

1. **Scale the use of virtual urgent care.** This change will require building out flexible provider networks to address the shortages and long wait times that consumers experienced during the initial escalation of telehealth demand. Sustaining and growing patient use also will likely require active, personalized patient engagement, by both providers and payers, to ensure a positive experience with telehealth. Integration with e-triage/symptom solutions (by either provider or payer) can make the patient experience even more seamless and can leverage artificial intelligence (AI) to guide patients to the most appropriate care. Finally, the ability to access patients' medical records and make post-encounter additions may be needed to enable care integration.
2. **Scale the use of fully virtual office visits.** This change would require going beyond on-demand visits with an unknown provider and embedding virtual health in the "brick and mortar" healthcare system. Telehealth solutions will likely need to be easier to embed in provider workflows and address security concerns, both of which have been raised by providers as limiting factors to telehealth adoption.[1] Capabilities are needed to allow for more seamless information exchange and sufficiently rich clinical data to be transferred among providers and between providers and patients (for example, ensuring all providers caring for a complex patient have access to the clinical record and can update it based on virtual visits, plus leveraging AI and natural language processes to capture notes in easily sharable forms). In addition, retail diagnostic kits (for example, home pulse oximeters, blood pressure machines) must be widely available, so patients can take basic measurements at home and enable a broader set of care to be delivered virtually. Providers should have a clear end-to-end value proposition for integrating telehealth into their service delivery model (for example, incorporating the value from patient attraction and retention and operating model efficiency, in addition to reimbursement for visits). Payers should also have a clear view of potential outcomes and total cost of care impact (for example, by population and care journey) to inform decisions on provider engagement strategies and reimbursement.
3. **Integrate "near virtual" office visits into the care continuum.** These near-virtual visits will have requirements similar to fully virtual office visits, and scale up the availability of "near-home" sites of care (for example, workplace and retail clinics). They would be integrated into provider networks and delivery system footprints, and optimize care protocols to guide patients to these sites. Even further data integration will likely be needed. This may include patient data shared across platforms outside of a single health system and patient tools (for example, comprehensive personal health records applications, care navigation tools) that allow patients to manage their care across providers.
4. **Virtualize home care services.** This change would likely require increased access to and use of remote monitoring devices, tailored to specific clinical conditions (such as remote continuous glucose monitoring sensors for people with diabetes or remote heartbeat monitors and blood pressure monitors for people with cardiovascular conditions). Providers may be required to integrate use of such devices into care plans. Payers may need to offer reimbursement, and solutions may need to enable integrated access between, for example, primary care physicians, care managers, and at-home caregivers. These services could also require the deployment of supportive patient engagement tools (for example, digital coaching, care plan navigation tools), tailored to patients' needs and integrated with communication channels to providers, care managers, and others involved in their care.
5. **Tech-enabled home medication administration.** This change will have requirements similar to virtualized home care services, as well as tailored digital tools to support monitoring and care delivery (for example, medication adherence tools), and virtual access to pharmacist consults.

[1] McKinsey 2020 Virtual Health Survey.

What actions should healthcare stakeholders take in the near term to shape this opportunity?

Actions payers could consider:

1. **Define a value-backed virtual health roadmap**, taking a data-driven view to prioritize interventions that will improve outcomes for priority populations, and develop strategies to digitally enable end-to-care care journeys.
2. **Optimize provider networks and accelerate value-based contracting to incentivize telehealth.** Define approaches (beyond the immediate COVID-19 response measures) to reimbursement and covered services, embed in contracting, and optimize networks and value-based models to include virtual health. Align incentives for using telehealth, particularly for chronic patients, with the shift to risk-based payment models.
3. **Build virtual health into new product designs** to meet changing consumer preferences and demand for lower-cost plans. This new design may include virtual-first networks, digital front-door features (for example, e-triage), seamless "plug and play" capabilities to offer innovative digital solutions, and benefit coverage for at-home diagnostic kits.
4. **Integrate virtual health into the care delivery approach.** Given the significant disruptions to providers, payers are reassessing their role in care delivery—from ownership of care delivery assets, value-based contracting, or anything in between. Consider options in virtual health (for example, platforms, digital-first providers) as a critical element of this approach.
5. **Reinforce the technology and analytics foundation** that will be required to achieve the full potential of virtual health.

Actions health systems could consider:

1. **Accelerate development of an overall consumer-integrated "front door."** Consider what the integrated product will initially cover beyond what currently exists and integrate with what may have been put in place in response to COVID-19 (for example, e-triage, scheduling, clinic visits, record access).
2. **Segment the patient populations (for example, with specific chronic disease) and specialties** whose remote interactions could be scaled with home-based diagnostics and equipment.
3. **Build the capabilities and incentives of the provider workforce to support virtual care** (for example, workflow design, centralized scheduling, and continuing education); align benefit structure to drive adoption in line with health system and/or physician practice economics.
4. **Measure the value of virtual care by quantifying clinical outcomes,** access improvement, and patient/provider satisfaction to drive advocacy and contracting for continued expanded coverage. Include the potential value from telehealth when contracting with payers for risk models to manage chronic patients.
5. **Consider strategies and rationale to go beyond "telehealth"/clinic visit replacement** to drive growth in new markets and populations and scale other applications (for example, tele-ICU, post-acute care integration).

Actions investors and health services and technology firms could consider:

1. **Develop scenarios on how virtual health will evolve and when,** including how usage evolved post-COVID-19, based on expected consumer preferences, reimbursement, CMS, and other regulations.

Sidebar 2

Technical appendix

Our analysis looked at 2018 claims data representative for Medicare, commercial, and Medicaid lines of business.

Emergency rooms and virtual care
We analyzed the emergency room visits and associated primary diagnoses. Using the NYU Wagner ED visit classification[1] research on various categories of the visits, we split the visits into those with non-emergent status (a big portion of which could be highly avoidable if proper self-triage and virtual urgent care tools could be available at people's disposal) versus those that are higher emergency in nature, and are unlikely to be avoided using virtual urgent care. We assigned probabilities of potential to divert each category of these visits via a virtual urgent care offering.

Outpatient hospital and office visits
We filtered for visits that have evaluation and management procedure codes and analyzed individual claims to determine whether other additional services and procedures occurred during the visit (for example, administration of infusible/injectable drugs, blood draws, immunizations, physical therapy). We categorized the opportunities:

- Virtual office visits: a visit included only evaluation and management and no other procedures
- Near-virtual office visits: a visit included blood draws/lab tests and administration of immunizations/vaccinations
- Tech-enabled home medication administration: the visit included administration of drugs in a clinic/outpatient setting (for example, administration of "J-code" infusible/injectable drugs). We included only a portion of the spend associated with these procedures, using our estimates of what portion of the procedure spend could be saved by shifting administration of these drugs from outpatient to home settings
- Other: all other visits

We conducted clinical reviews to further categorize the various kinds of procedures into high, medium, and low probability of being virtual.

Home health attendant services
We filtered for visits and services occurring in a home setting, and looked at what types of services were rendered during such visits:

- Direct nursing and attendant services (such as wound care, assistance with daily living routines, administration of IV) which are much less likely to be delivered virtually—if at all
- Services that can potentially be delivered virtually (such as evaluation, general assessment, patient and caregiver education, physical therapy, occupational therapy and speech therapy)

For services that did not involve direct nursing or attendant services, we conducted clinical reviews to further categorize them into high, medium, and low ability to virtualize.

After conducting these analyses for each of the commercial, Medicare, and Medicaid data sets, we scaled and projected the spend and utilization to represent national 2020 spend figures, using CMS National Health Expenditure projections.[2]

[1] "Faculty & research," NYU Wagner, wagner.nyu.edu.
[2] "NHE fact sheet," Centers for Medicare & Medicaid Services, last modified March 24, 2020, cms.gov.

2. **Assess impact across virtual health solution/service types,** developing a view of the opportunity for each solution/service type, including expected consumer/provider adoption, impact (for example, to outcomes, experience, affordability), and reimbursement.

3. **Develop potential options** and define investment strategies based on the expected virtual health future (for example, combinations of existing players/platforms, linkages between in-person and virtual care offerings) and create sustainable value.

4. **Identify the assets and capabilities to implement these options,** including specific assets or capabilities to best enable the play, and business models that will deliver attractive returns.

5. **Execute, execute, execute.** The next normal will rapidly take hold, and those that can best anticipate its impact will create disproportionate value. Don't underestimate the potential of network effect.

The window to act is now. The current crisis has demonstrated the relevance of telehealth and created an opening to modernize the care delivery system. This modernization will be achieved by embedding telehealth in the care continuum at scale. A $3 billion revenue market has the potential to grow to $250 billion. The seeds for success will be sown in the next few months during the COVID-19 crisis. Healthcare systems that come out ahead will be those who act decisively, invest to build capabilities at scale, work hard to rewire the care delivery model, and deliver distinctive high-quality care to consumers.

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1 McKinsey COVID-19 Consumer Survey, April 27, 2020.
2 Erickson M, "Stanford Medicine increases use of televisits to help prevent spread of coronavirus," Stanford Medicine, March 30, 2020, med.stanford.edu.
3 Palo Alto Medical Foundation, "Video visits and COVID-19 response," Sutter Health, 2020, sutterhealth.org.
4 Beacon Health Options infographic. Beacon's claims data suggest that compared to April 2019, telehealth sessions increased 5,130 percent in April 2020. (Note: data only include claims paid through May 8, 2020—additional claims for services rendered in April 2020 may be processed at a later date. Additionally, claims for telehealth services may not include a telehealth modifier, and are therefore not included in our telehealth usage calculations.)
5 McKinsey scan of telehealth and digital care vendors. Vendor revenues only partially include physician billings (in situations where vendor only charges a monthly usage fee or a portion of the physician fee); total spend including all physician billings for virtual visits is likely to be higher than $3 billion.
6 See technical appendix on p. 15.
7 McKinsey 2020 Virtual Health Survey.
8 McKinsey COVID-19 Consumer Survey, April 27, 2020.
9 McKinsey 2019 Digital Healthcare Value Opportunity Assessment.

Physician employment: The path forward in the COVID-19 era

Kyle Gibler, Omar Kattan, Rupal Malani, and Laura Medford-Davis

New financial pressures resulting from the COVID-19 pandemic may increase physician practice acquisition and consolidation. However, results from McKinsey physician surveys both before and during the COVID-19 pandemic suggest that these partnerships may benefit from an updated approach.

The COVID-19 pandemic has led many providers and physicians to consider how to maintain clinical quality standards and financial stability. McKinsey launched a national survey of general and specialty physicians in 2019, which it repeated six weeks into the pandemic (Exhibit 1).[1] During the first wave of COVID-19, more than half of respondent physicians reported that they were worried about their practices closing.[2] While autonomy has remained a priority for physicians, respondents indicated that they will consider partnerships or joining a health system as a result of financial uncertainty resulting from the COVID-19 pandemic.[3]

Physician employment continues to grow, and may accelerate after COVID-19

According to an American Medical Association report, physician employment has grown 13 percent since 2012, with the percent of employed physicians surpassing their cohorts in physician-owned practices for the first time in 2018.[4] In McKinsey's 2019 survey, 79 percent of small independents, 67 percent of large independents, and 42 percent of employed physicians cited autonomy as a top factor in selecting their current practice model.[5] In the same survey, 84 percent of all independent physicians who did not proceed with an employment opportunity in previous years, and 59 percent who returned to independent practice after employment, selected autonomy as a primary influencer.[6]

Respondent physicians balance autonomy with employment

While respondent employed physicians cite autonomy as a top three factor in their current practice model decision, they were more likely than respondent independent physicians to also cite financial stability as a top factor (53 percent of employed compared with 38 percent of small independents).[7] Around 40 percent of employed physicians cited both personal and practice finances as influencers in their decision to become employed.[8]

The demand shock from COVID-19 is unprecedented, and many physician respondents believe that the resulting loss of revenue will put their practices at financial risk. Six weeks into COVID-19, 53 percent of all independent physicians reported that they were worried about their practices surviving the COVID-19 challenge.[9] Almost half of all independent physician practices said they had less than four weeks of cash on hand,[10] and 68 percent of those respondents looking for partners ranked financial support as their number-one reason.[11]

A third of small independent physicians reported that they believe working for a larger practice may provide greater benefits.[12] Many independent physicians said that, due to COVID-19, they were considering partnering with a larger entity, selling their practice, or becoming employed (Exhibit 2).[13]

When asked in 2019, 75 percent of respondent physicians preferred to join an independent physician group while 41 percent preferred to join a hospital or health system.[14] Six weeks into COVID-19, 89 percent of respondents preferred to join an independent group while 28 percent preferred to join a health system.[15]

Exhibit 1

Each survey tracked responses across three physician groups—small independent, large independent, and employed.

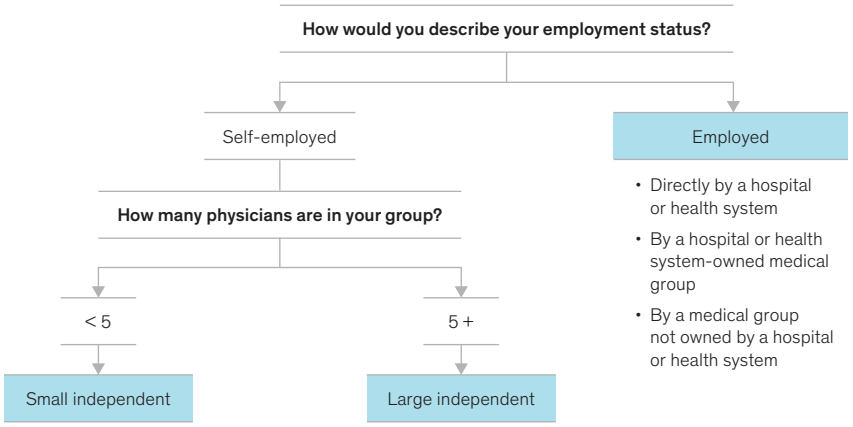
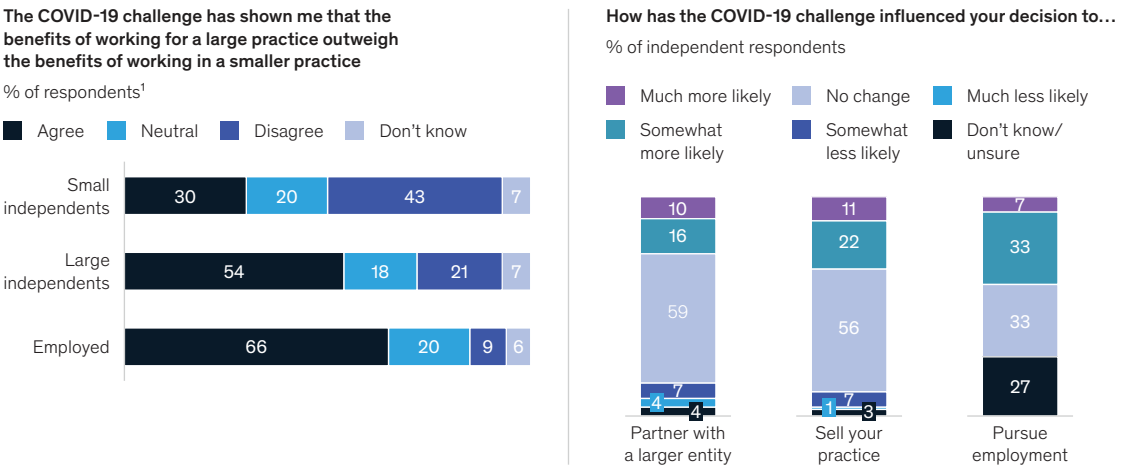


Exhibit 2

COVID-19 has convinced some small independent physicians that there are benefits in working for a larger practice, and a significant proportion of all independents are now considering selling their practice or partnering with a larger entity.



[1] Figures may not sum to 100%, because of rounding.
Source: McKinsey COVID-19 Physician Survey, May 2020

Sixty-five percent of respondents said they were concerned about infecting family members with COVID-19....

Despite increasing interest in joining a practice or health system, 26 percent of physicians who joined a practice or health system reported "buyer's remorse," stating that they were interested in returning to self-employment.[16] Respondent physicians in large independent groups reported being less satisfied than smaller independents.[17] Fifty-eight percent of respondents in large groups compared with 71 percent of respondents in small groups reported that they would like to remain independent.[18] In light of these survey findings, health systems and other stakeholders may consider strategies to optimize the mutual benefits of physician practice acquisition.

Our survey results indicate that while physician referrals historically may be less influenced by formal alignment mechanisms than by patient cost, access, and perceived clinical quality, some physicians are reconsidering referral choices in the context of COVID-19

Physician referral patterns—which hospitals, specialists, or testing centers they recommend to their patients—have often been difficult to change. Almost all physicians refer patients to just two hospitals, and 91 percent have not changed their referral destination in the past five years, even though nearly a third of respondents changed their employment status in that period.[19] A minority of physicians said they consider their employment when making a referral.[20] Physician respondents said they were most concerned with quality of care and patients' ability to access care once referred, including concern for patients' affordability and insurance network, suggesting potential areas for health system focus (Exhibit 3).[21]

However, when judging quality, physicians reported relying on their own impressions over publicly reported quality metrics.[22] In addition, small independent physicians cite cost and insurance coverage more frequently than others, while small and large independent physicians said they are more swayed by their own convenience than employed physicians reported.[23]

Six weeks into the onset of the COVID-19 pandemic, 8 percent of physicians report having changed their hospital referral destination.[24] Physicians' reported reasons for referral remain largely unchanged from prior to COVID-19.[25] The 2020 survey offered two additional COVID-19-related options, with 14 percent of physician respondents selecting access to COVID-19 testing (rank 10) and 12 percent selecting access to personal protective equipment (rank 12) as drivers.[26]

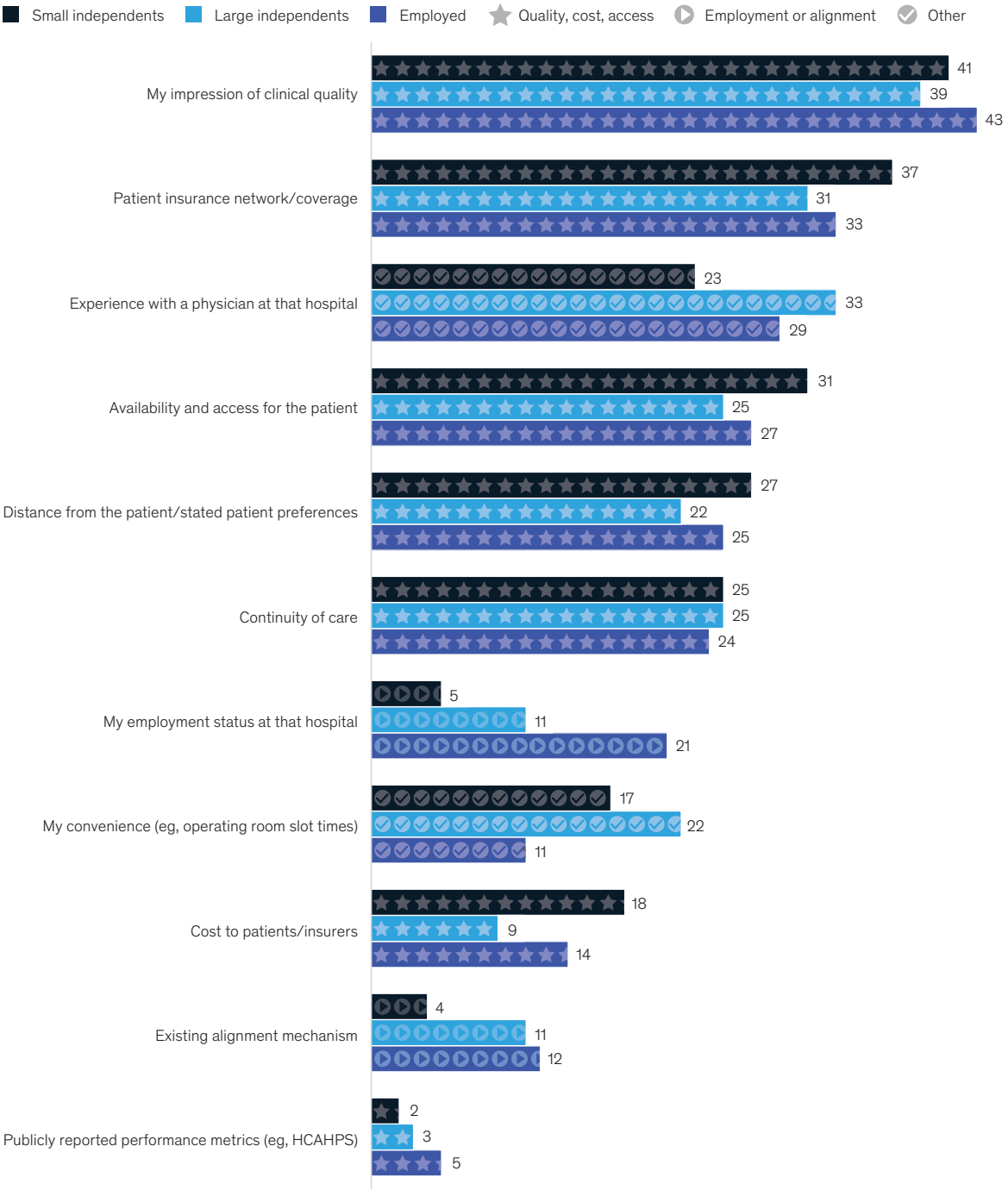
More than 40 percent of physicians reported that post-COVID-19, they will be more likely to refer patients to non-hospital facilities for procedures, office visits, and diagnostic testing than they were pre-COVID-19 (Exhibit 4), with a more pronounced effect on independent physicians than those who are employed.[27] A possible rationale is that physicians may be wary of the safety of hospital-based care in the return from COVID-19, although the survey did not include questions to that effect. Sixty-five percent of respondents said they were concerned about infecting family members with COVID-19, while 72 percent said they were concerned about ensuring their patients' safety from COVID-19.[28] This finding could suggest that proactive communication and engagement may be critical for health systems still addressing COVID-19 while building physician relationships.

Exhibit 3

Physicians report that patient access and experience, cost, and quality are the key drivers for their referrals, and that employment and alignment have little influence on their referral patterns.

Top 3 factors considered when recommending a hospital to a patient[1]

% of respondents



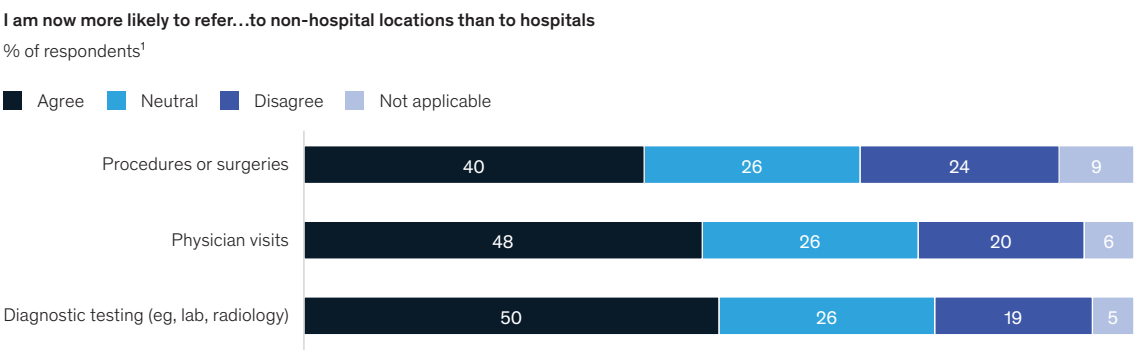
HCAHPS, Hospital Consumer Assessment of Healthcare Providers and Systems.
[1] REF7 asked to rank up to 5.
Source: McKinsey Physician Survey, May 2019

Our findings indicate that respondent employed physicians do not have a better understanding of, or participation in, value-based care models than independents, and 25 percent of independent respondents are now more skeptical of such models in a post-COVID future

Respondent employed physicians were equally likely to be participating in an alternative payment model (APM) in 2019 as large-group independent physicians.[29] In addition, both employed and independent physicians reported a lack of understanding regarding the impact of their performance on their compensation.[30] Employed and small independent physician respondents, however, are twice as unlikely as large independent physicians to report understanding the types of operational metrics that are used as incentives by APMs (Exhibit 5).[31] These survey findings

Exhibit 4

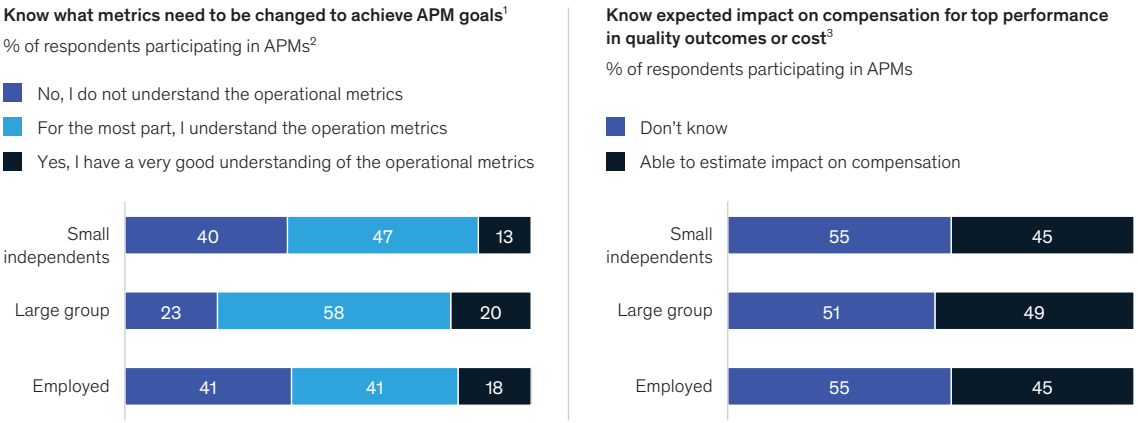
Experience with COVID-19 has made physicians more likely to refer procedures and surgeries, physician visits, and diagnostic testing to non-hospital locations.



[1] Figures may not sum to 100%, because of rounding.
Source: McKinsey COVID-19 Physician Survey, May 2020

Exhibit 5

Physicians who are employed have no better understanding of operational targets or compensation at risk in value-based payments.



APM, alternative payment model.
[1] QVB9_2.
[2] Figures may not sum to 100%, because of rounding.
[3] QVB9_1.
Source: McKinsey Physician Survey, May 2019

suggest that while small independents may lack the scale to operationalize success, physicians' employers may enroll physicians in these models without providing sufficient communication or education.

Additionally, while physicians reported that they would like to use their patients' medical and social risks, costs, and communication preferences to tailor value-based decision making at the point of care, they do not always have the required tools and information to do so (Exhibit 6).[32] This finding is generally consistent regardless of employment status, although respondent small independents report better access to data to understand patients' communication preferences.[33] All independents report better data availability for patients' medication list and social risks than employed physicians report.[34]

Given physicians' reported perceived lack of capabilities to perform in APMs, it is unsurprising that they reported caution about adopting more value-based payment models within the environment of COVID-19. Twenty-one percent of physicians said they will be less likely to participate in APMs in the future.[35]

Employed physicians do not necessarily report better patient access tools, despite potentially greater access to capital, but they do report better operational tools than respondent independent physicians

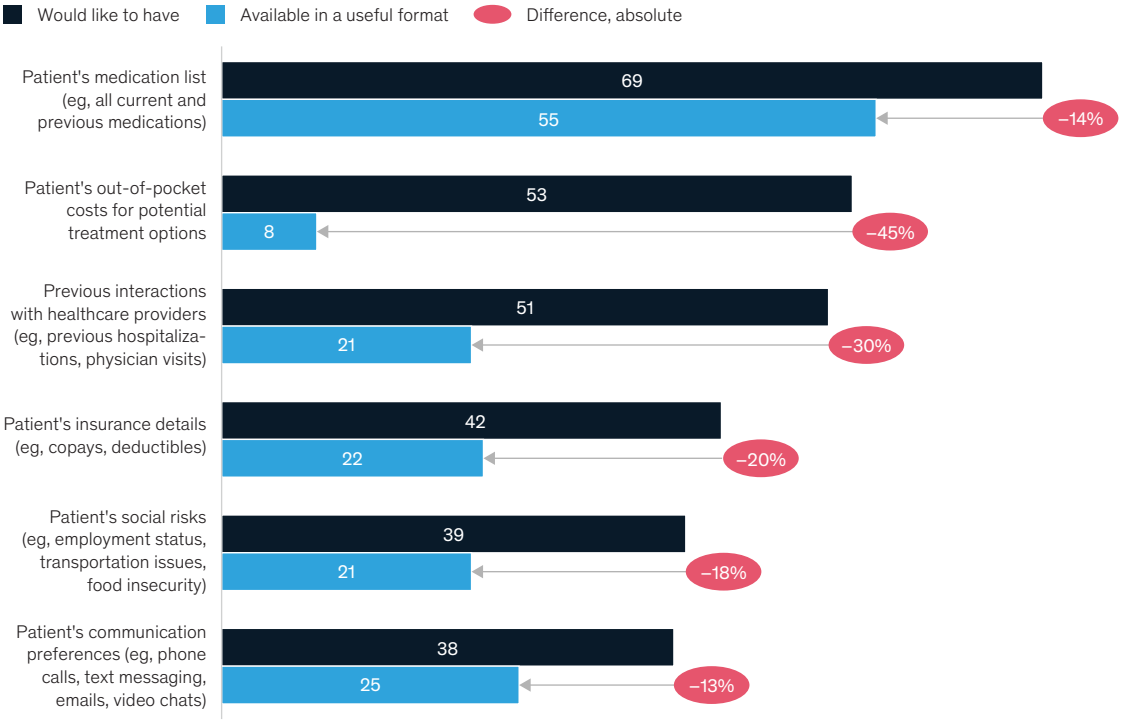
Despite the importance that physicians report placing on patient access when making referrals (Exhibit 3), it appears as though respondent employed physicians have not been as advantaged over large independents in digital access invest-

Exhibit 6

All physician respondents said they are not always equipped with the information or practice tools needed to make high-value decisions at the point of care.

Desirability vs availability of patient information

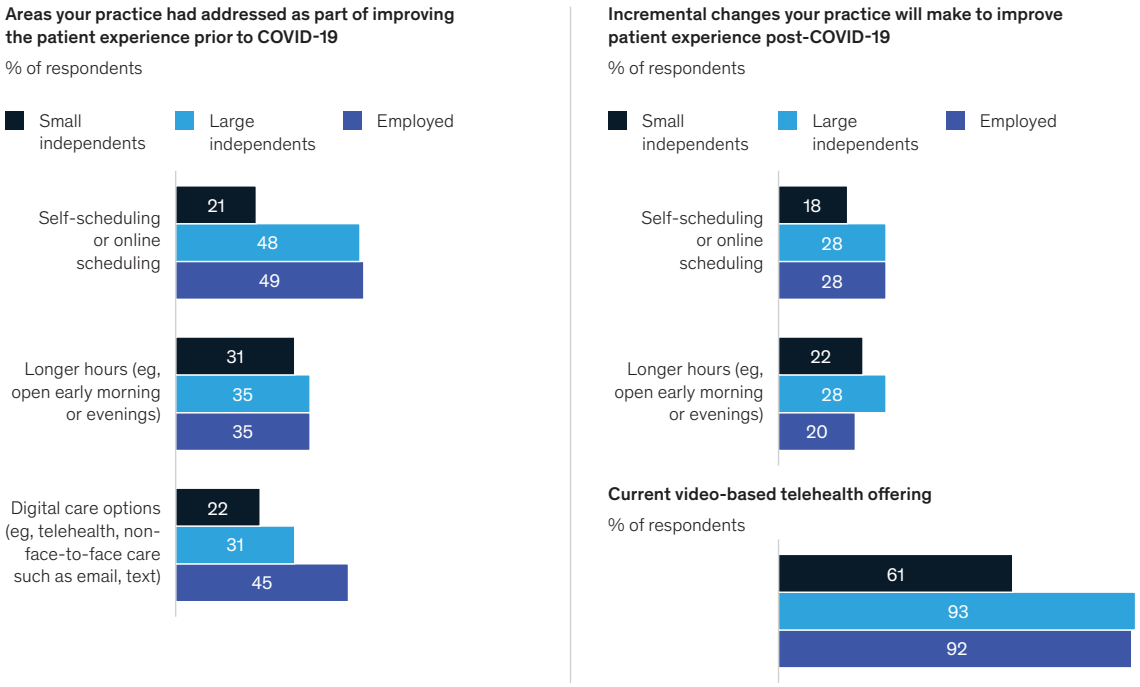
% of respondents stating information is available most of the time



Source: McKinsey Physician Survey, May 2019

Exhibit 7

Prior to COVID-19, employed physicians had an advantage over independents in digital care offerings, but now employed and large groups have quickly scaled up, widening the gap to small independents.



Source: McKinsey Physician Survey, May 2019; COVID-19 Physician Survey, May 2020

ments as might have been expected. Our survey results suggest that large and employed practices are both more likely to offer access through expanded hours than small practices, even though this offering requires minimal capital (Exhibit 7).[36] Prior to COVID-19, employed physicians also reported that they were more likely to offer digital care access such as telehealth, but equally as likely as large independent physicians to report self-scheduling and longer hours.[37]

It appears as though respondent employed and large-group practices are equally likely to have rapidly scaled up digital care offerings in response to COVID-19 to meet their patients' needs.[38] Forty-six percent of physicians report using telehealth during COVID-19 compared with 11 percent in 2019.[39] This finding may be explained by larger entities' greater access to capital required to invest in technology. In addition, employed practices are more likely to report planned updates to facility infrastructure or flow and to have added disinfection procedures.[40] Based on survey results, they also are more likely to offer COVID-19 testing (46 percent employed compared with 37 percent independent) than both small and large independent physicians.[41]

Survey results further suggest that physician satisfaction with operational tools, such as documentation or referral decision support, is generally low regardless of employment status.[42] Less than half of respondent physicians believe that technology improves their productivity.[43] However, employed physicians are consistently more likely than independent physicians to give high ratings to the helpfulness of their electronic medical record (EMR) systems (34 percent compared

with 22 percent), EMR IT support (31 percent compared with 18 percent), scheduling software support (26 percent compared with 17 percent), revenue cycle support (23 percent compared with 15 percent), and care management and social work support (26 percent compared with 18 percent), with a slight advantage reported by large-group independent physicians compared with small groups.[44] These findings suggest that the scale to invest in new infrastructure, technology, and people may be an advantage of health system partnership.

Our findings indicate that understanding what physicians want and what they are able to provide could inform a more successful health system strategy for sustaining physician engagement in the medium and longer term

The negative financial impact due to COVID-19 indicated by more than half of independent practices[45] may lead to a new wave of partnerships and consolidation. However, physician respondents stated that they are looking to gain financial security and operational support without losing too much of their autonomy. Health systems may be looking to increase patient access through an adequate network. Both are committed to providing high-quality, high-value care. As consolidation and partnerships occur, patients could gain greater access to digital care, newer facilities, COVID-19 testing, and social worker support through their physicians' employment. Yet patients also may be concerned that consolidation would impact the personalization of care.

As health systems explore the next chapter of physician acquisition, our research in the healthcare sectors suggests all parties should deepen their understanding of physicians' needs. Clear communication between health systems and physicians on the expectations and benefits of alignment, including the implications for physicians, their teams, and their patients, will be important considerations in building longer-term successful relationships.

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1 In May 2019, McKinsey surveyed 1,008 primary care, cardiology, and orthopedic surgery physicians. The survey was repeated from April 27 to May 5, 2020, with 538 respondents of all specialties (including general practice/surgery, cardiology, orthopedics, dermatology, ob/gyn, oncology, ophthalmology, ENT, pediatrics, plastic surgery, behavioral health, urology, and dentistry) to see how COVID-19 had affected physicians' viewpoints. Responses of the three groups were compared based on physician practice model: employed, small independents, and large independents.

2 QFIN_ATTR1: I am concerned about my practice making it through the COVID-19 challenge. How strongly do you agree or disagree (n = 284 population [large and small independent physicians familiar with the financial position of their practice]; May 2020).

3 OFFER_SWITCH: If you were approached by a larger physician practice/provider entity regarding potentially leaving your current practice to join them, please rank (up to 5) how important the following factors would be when considering the offer overall (sum of top 3; n = 538; 59 percent ranked autonomy over personal schedule or ability to influence decision making at the practice; 78 percent ranked base salary or upside compensation; May 2020).

4 American Medical Association Policy Research Perspectives: Updated data on physician practice arrangements—for the first time, fewer physicians are owners than employees (45.9 percent in physician-owned practices and 47.4 percent employed).

5 QPA2: What are the most important reasons for your preference? Please rank up to 3 (sum of top 2; n = 1,008; May 2019).

6 QPA12: What factors influenced your decision NOT to proceed with employment? Please select all that apply (n = 131 population [currently small or large independent but approached for employment within past 5 years]); QPA10: What influenced your decision to shift from employed to independent? Please select all that apply (n = 28 population [currently small or large independent, but has been employed by a hospital or health system within past 5 years]); May 2019.

7 QPA2. No difference between employed and large independents; 52 percent rank finances.

8 QPA14: What made you shift from independent to employed? Please select all that apply (n = 66 population [physicians employed by a hospital or health system within last 5 years]; May 2019).

9 QFIN_ATTR1: I am concerned about my practice making it through the COVID-19 challenge. How strongly do you agree or disagree (n = 284 population [large and small independent physicians familiar with the financial position of their practice]; May 2020).

[10] QCASH_NOW: How many days of cash on hand does your practice currently have? (n = 284 population [small- and large-group independent physicians familiar with the financial position of their practice], May 2020).
[11] QPARTNER_WHYRANK: What are the primary areas of support you'd seek from a future partner? First choice when ranking up to 5 (n = 106 population [large- and small-group independent physicians with ownership in their practice likely to sell practice or seek partnership or alignment with a larger organization]; May 2020).
[12] FIN_ATTR7: The COVID-19 challenge has shown me that the benefits of working for a large practice outweigh the benefits of working in a smaller practice. How strongly do you agree or disagree (n = 508 population [physicians familiar with the financial position of their practice]; May 2020).
[13] FIN_ATTR7: The COVID-19 challenge has shown me that the benefits of working for a large practice outweigh the benefits of working in a smaller practice. How strongly do you agree or disagree (n = 508 population [physicians familiar with the financial position of their practice]; May 2020); QPARTNER: How has the COVID-19 challenge influenced your decision to pursue a partnership or alignment with a larger organization? (n = 230 population [large- and small-group independent physicians with ownership in their practice]); QSELL_POST: How has the COVID-19 challenge changed your interest in selling your practice? (n = 230 population [large- and small-group independent physicians with ownership in their practice]); QEMP_CHANGE: How has the COVID-19 challenge influenced your decision to pursue employment? (n = 58 population [large- and small-group independent physicians without ownership in their practice]); May 2020.
[14] Rank = 1st or 2nd QPA15: If you were to formally partner with a separate organization to build a new approach to deliver better care, which would be your most trusted collaborator? Please rank up to 3 (n = 425 population [large- and small-group independent physicians]; May 2019).
[15] QWHORANK: Please imagine your practice was potentially acquired. How appealing would the following organizations be for you to join? Please rank from 1 to 5 (n = 166 population [small- and large-group independent physicians with ownership in their practice and more than "no" interest in being acquired]; May 2020).
[16] QPA16: Thinking out 5 years from now, which company would you be most excited to be employed by? Please rank up to 3 (n = 1,008; May 2019).
[17] Ibid.
[18] Ibid.
[19] QREF3: How many hospitals account for 80 percent of your admissions/procedures? (n = 835 population [physicians with admitting or procedure privileges]); QREF4: Thinking about the hospital you most often refer patients to, is it the same hospital that you most often referred patients to 3–5 years ago? (n = 992 population [physicians who refer patients]); QPA9: If not currently employed, in the past 5 years were you employed by a hospital or health system? (n = 617 population [currently independent physicians]); QPA13: If currently employed, how long have you been employed by a hospital/health system? (n = 391 population [currently employed physicians]); May 2019.
[20] QREF7_1: What factors do you consider when recommending a hospital to a patient? Please rank up to 5 most important factors (n = 705 population [hospital is 1st or 2nd most frequent facility type for referrals]; May 2019).
[21] Ibid.
[22] Ibid.
[23] Ibid.
[24] QREF: Is the site you currently refer patients to most often the same site of care you referred to most often before the COVID-19 crisis? (n = 538; May 2020).
[25] QREF7_1 versus QREF_DRIVERRANK: What would make you change referrals to a different site of care? Please rank up to 5 most important factors (n = 456 population [physicians who have not switched referral sites]; May 2020).
[26] QREF_DRIVERRANK: What would make you change referrals to a different site of care? Please rank up to 5 most important factors (n = 456 population [physicians who have not switched referral sites]; May 2020).
[27] TREF_ATT2: I am now more likely to refer procedures or surgeries; physician visits; diagnostic testing (e.g., lab, radiology) to non-hospital locations than hospitals. Please rate how strongly you agree or disagree now compared to how you felt before the COVID-19 challenge (n = 538; increased likelihood for procedures/surgeries 35 percent of employed versus 45 percent of independents; for physician visits 42 percent of employed versus 52 percent of independents; for diagnostic testing 45 percent of employed versus 54 percent of independents; May 2020).
[28] TREF_ATT: I am very concerned about giving COVID-19 to a member of my household when going back to 'normal' care. I am very concerned about ensuring my patients' safety when going back to 'normal' care. Please rate how strongly you agree or disagree (n = 538; May 2020).
[29] QVB6: Do you currently participate in any alternative payment models with health insurance companies (e.g., episodes, capitation, gain-share arrangements)? (n = 1,008; May 2019).
[30] VB9_1: If you were to perform very well or very poorly on quality outcomes or cost, approximately how much would your total compensation change? (n = 196 population [participating in APMs]; VB9_2: Do you know what types of operational metrics need to be changed to achieve goals? (n = 196 population [participating in APMs]); May 2019.
[31] VB9_1: If you were to perform very well or very poorly on quality outcomes or cost, approximately how much would your total compensation change? (n = 196 population [participating in APMs].
[32] QPA22: What type of information would you like to have to support decisions you make or recommend to your patients? Select all that apply (n = 1,008); QPA23: How often do you have the following information in a useful format when you're making decisions or recommending treatments to your patients? Select one frequency for each (n=332–696 population [physicians desiring each type of information]); May 2019.
[33] QPA22 subtracted from QPA23: communication preferences (small independents -1.9 percent versus employed -18.2 percent).
[34] QPA22 subtracted from QPA23: medication list (small independents -3.0 percent versus large independents -7.6 percent versus employed -20.3 percent); social risks (small independents -15.5 percent versus large independents -8.6 percent versus employed -23.8 percent).
[35] VB3: Thinking about as your practice returns to normal post-COVID, do you think you'll be more or less likely to participate in risk-based payments? (n = 192; May 2020).
[36] PA20: Which of the following areas has your practice addressed as part of improving the patient experience? Select all that apply (n = 1,008; May 2019).
[37] Ibid.
[38] PA20: Which of the following areas has your practice addressed as part of improving the patient experience? Select all that apply (n = 1,008; May 2019); TEL_ABLE: Does your practice currently offer video-based telehealth to patients? (n = 538).
[39] Bestsennyy O, Gilbert G, Harris A, and Rost J, "Telehealth: A quarter-trillion-dollar post-COVID-19 reality?," May 2020, McKinsey.com.
[40] PA20: Which of the following areas do you expect your practice will change to improve patient experience once the COVID-19 challenge has passed? Select all that apply (n = 538; May 2020).
[41] Ibid.
[42] PA19: Do you think that technologies would have an impact on care delivery by improving or harming physician productivity (e.g., documentation, diagnosis support, referral decision support, telehealth, non-face-to-face care such as email, text, etc.)? Sum of top 2 box (out of 5) somewhat or significantly improve (n = 1,008; May 2019).
[43] Ibid.
[44] SUP3: How helpful are the types of practice support you receive from a hospital or health system? Sum of top 3 box (out of 10) (n = 1,008; May 2019).
[45] QFIN_ATTR1: I am concerned about my practice making it through the COVID-19 challenge. How strongly do you agree or disagree (n = 284 population [large and small independent physicians familiar with the financial position of their practice]; May 2020).

A holistic approach for the US behavioral health crisis during the COVID-19 pandemic

Erica Coe, Lisa Crystal, Kana Enomoto, and Razili Lewis

COVID-19 creates additional challenges for healthcare leaders seeking to improve behavioral health while offering an opportunity for meaningful change.

The COVID-19 outbreak is a human tragedy that affects not only the global economy but also the global psyche. In a recent publication, "Returning to resilience: The impact of COVID-19 on mental health and substance use,"[1] we highlighted the potential behavioral health impact of the economic and emotional distress caused by the COVID-19 pandemic. Now, we offer a deeper dive into four actions healthcare leaders can take to address behavioral health surrounding the COVID-19 pandemic:

- Strengthen community prevention
- Leverage data, analytics, and technology
- Integrate behavioral and physical health services
- Partner to address unmet health-related basic needs[2]

Behavioral health conditions, consisting of mental and substance use disorders, have societal, economic, and healthcare system implications, all of which are amplified by the COVID-19 pandemic. Before the outbreak, one in two Americans faced a mental or substance use disorder at some point in their lives,[3] with depression as the leading cause of disability worldwide.[4] Surveys show that 23 percent of people in the workplace have depression; these workers miss twice as much work, and have five times as much "lost productive time."[5] In the healthcare system, individuals with behavioral health conditions have a medical spend that is two to four times higher than the rest of the population.[6] This disproportionate spend is driven largely by increased medical costs for comorbid chronic physical conditions.

Furthermore, a gap in treatment capacity to meet these needs exists: 56 percent of counties in the United States are without a psychiatrist,[7] 64 percent of counties have a shortage of mental health providers,[8] and 70 percent of counties lack a child psychiatrist.[9] COVID-19 and the ensuing economic crisis may drive an increase in mental and substance use disorders, as stress contributes to higher rates of post-traumatic stress disorder, depression, anxiety, and alcohol or drug use,[10] along with further shortages in services available as practitioners face economic challenges.[11]

Healthcare leaders already face the challenge of meaningfully improving behavioral health, which may be exacerbated by COVID-19.

Behavioral health context and national momentum

Relevance

Providing prevention, treatment, and recovery support services in behavioral health are critical to improving patient outcomes, reducing costs for providers, preventing criminal justice involvement, promoting school achievement,

supporting employment, and enhancing social connectedness.[12] However, the healthcare system struggles to ensure adequate care for people with mental and substance use disorders. In addition, inequities continue, with racial and ethnic minorities having less access to behavioral health services and being less likely to receive needed high-quality care.[13]

Individuals with behavioral health conditions have two to six times higher frequency of co-occurring chronic physical conditions than individuals without behavioral health conditions (Exhibit 1). While people with behavioral health conditions comprise 23 percent of the insured population, they drive 60 percent of the total cost of care.[14] Moreover, in the post-COVID-19 period, traumatic stress, unemployment, and social isolation will lead to exacerbation of existing behavioral health conditions and onset of new conditions that could drive $100 billion to $140 billion of additional spending on behavioral and physical health services in 2020 and 2021.[15]

Policy shifts

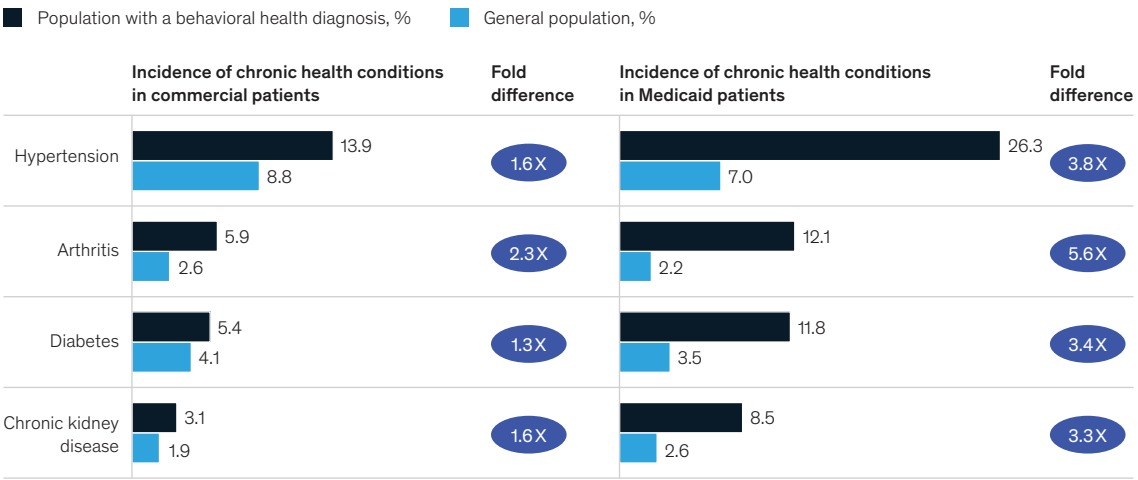
The COVID-19 pandemic may add impetus to an already growing trend around behavioral health as a policy priority. The Coronavirus Aid, Relief, and Economic Security Act (CARES Act) provides $425 million for additional community-based behavioral healthcare and suicide prevention, with most funding going to states and community providers.[16] However, a recent survey of behavioral health providers serving high-needs or high-risk COVID-19 populations revealed inadequate resources to serve their populations.[17]

Behavioral health has been a top bipartisan policy issue for more than a decade, starting with the Mental Health Parity and Addiction Equity Act of 2008 (MHPAEA), which requires behavioral health and medical/surgical benefits to be treated equitably by a payer with respect to annual and lifetime dollar limits, financial requirements, and treatment limitations.[18] Other examples include the Affordable Care Act of 2010 (ACA), which established behavioral health services as essential benefits, and the SUPPORT Act (2018), which significantly expanded funding to combat the opioid epidemic.[19,20]

While the passage of these laws is evidence of progress, their full potential is yet to be fully realized. For example, while MHPAEA

Exhibit 1

Individuals with behavioral health conditions have two to six times higher frequency of co-occurring chronic physical conditions than individuals without behavioral health conditions.



Source: Illustrative Medicaid claims data set from one state and Truven Health Analytics, Inc. MarketScan Commercial database; behavioral health conditions identified by presence of at least one behavioral health diagnosis

Prevention is critical to mitigate a significant rise in behavioral health needs as a result of the stress, anxiety, and social isolation....

endeavors to bring patient financial requirements (for example, copays, deductibles) for behavioral healthcare to parity with physical health services, behavioral health providers are often reimbursed at lower rates than non-behavioral health providers, thereby decreasing participation in insurance networks and increasing members' out-of-pocket costs.[21,22] In ACA marketplaces, 11 percent of all mental health providers participated in plan networks compared with 24 percent of primary care providers.[23] Furthermore, individuals with commercial insurance are five times more likely to use out-of-network providers for behavioral healthcare than for physical healthcare.[24] With cost cited as a major reason people do not access behavioral healthcare, this shift to out-of-network care poses a financial risk to individuals with behavioral health conditions.[25]

Due to COVID-19, several emergency waivers and authorities were granted to facilitate access to behavioral health services, including increasing reimbursement rates and the number of eligible providers for telehealth services, relaxing Health Insurance Portability and Accountability Act of 1996 (HIPAA) technology requirements, increasing Federal Medical Assistance Percentage rates, and allowing remote treatment initiation for medication-assisted treatment.[26] Permanent changes in data privacy were instituted to promote harmonization across substance use disorder treatment and other parts of healthcare.[27] These flexibilities have supported a significant shift in volume of behavioral health services to telehealth and virtual practice. It remains to be seen, however, which flexibilities will endure past the emergency declaration and how, as a whole, these changes will affect the behavioral health landscape.

Actions to improve behavioral healthcare

Building on the current momentum for change, the healthcare system has opportunities to transform behavioral health through four key actions:

Strengthen community prevention

Payers and providers have historically supported physical disease prevention programs, but behavioral health has not had the same support. However, many prevention and early intervention programs for mental and substance use disorders have demonstrated cost effectiveness, with returns on investment as high as $65 per $1 invested. These programs focus on areas such as maternal and infant mental health, school-based mental well-being and substance use education, first-episode psychosis, workplace screening, social isolation prevention, mental health crisis management, and disaster management.[28] Workplace programs have shown the highest returns on investment when they focus on improving knowledge of mental health risks and providing personalized programs for employees.[29] A suicide and self-harm prevention strategy for construction workers has demonstrated a 5:1 return on investment.[30]

The successes of these programs suggest that payers, providers, employers, and governmental entities can all positively and cost-effectively influence behavioral health outcomes by engaging individuals and communities, reducing societal stigma, and intervening early to prevent behavioral health conditions.

Prevention is critical to mitigate a significant rise in behavioral health needs as a result of the stress, anxiety, and social isolation triggered by the COVID-19 pandemic and the associated economic decline. Previous natural

disasters and economic crises have been followed by documented upticks in rates of post-traumatic stress disorder, depression, anxiety, and substance use disorders.[31] For example, after the tragic events following the tsunami in Japan in 2011, 10 percent of the population reported initiating alcohol use.[32] A study of residents in Mexico two months after the 2017 earthquake revealed that 36 percent of individuals had symptoms of post-traumatic stress disorder.[33]

Prevention programs in a physically distanced environment may continue to be a challenge. For example, K–12 systems play an important role in fostering the behavioral health of students, often through informal channels such as lunchtime check-ins with students or phone calls home from teachers and staff. As schools continue physically distancing, institutions will need to ensure these measures continue, albeit in a different form.

As communities move past the peak of the pandemic and toward recovery, healthcare and business leaders can work together to provide crisis counseling, behavioral health screening, and early intervention services. At-risk groups may include frontline healthcare and essential workers, long-term care residents, individuals who were ill or lost a loved one to COVID-19, individuals in extended quarantine, and individuals who lost their jobs. Ongoing vigilance for new symptoms, the development of post-traumatic stress disorder, and an increase in service demands may help focus early intervention resources.

Leverage data, analytics, and technology

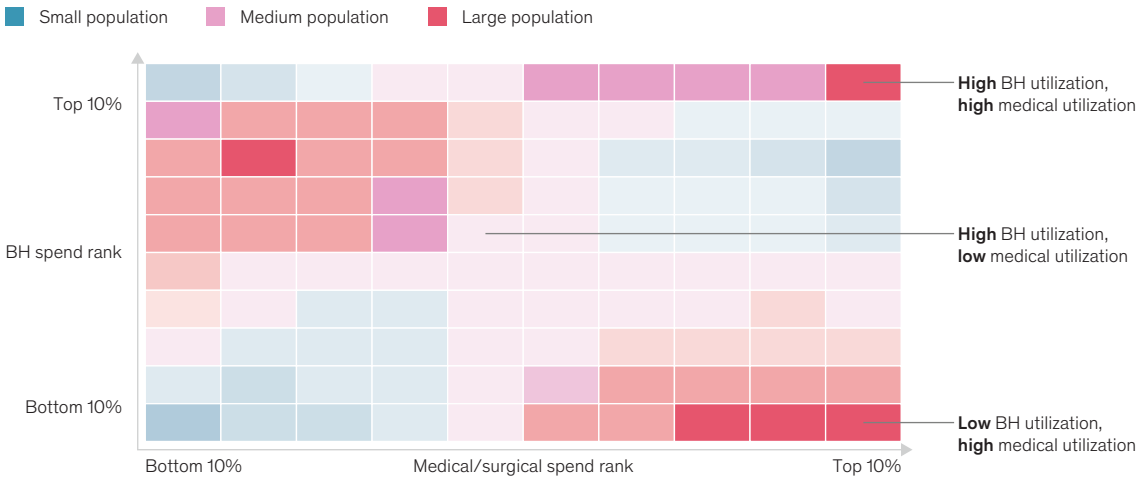
Advanced analytics has made it possible to tailor programs to more precise subsets of individuals (Exhibit 2) so that clinical resources can be directed to those most at risk for mental or substance use conditions and unmet basic needs (for example, housing, food). Using dynamic data sets, such as the Vulnerable Populations Dashboard,[34] healthcare leaders have tools to identify populations who would benefit from targeted prevention and treatment efforts.

Predictive modeling also can be done at the individual patient level to identify those who

Exhibit 2

Advanced analytics has made it possible to tailor programs to more precise subsets of individuals.

Heat map of individuals with behavioral health utilization based on their care costs



BH, behavioral health.
Source: Blended claims data analysis from one state; McKinsey Healthcare Analytics proprietary Behavioral Health Diagnostic tool

would benefit from specific interventions, such as collaborative care or intensive case management (Exhibit 3). Moreover, payers and providers can project demand more effectively by leveraging and improving available data sources and artificial intelligence.

Innovation can enhance care delivery by integrating evidence-based and measurement-based behavioral healthcare within patient self-management applications, digital therapeutics, analytic tools, and electronic health records. As pandemic-related restrictions to in-person care delivery ease, providers will need appropriate referral management resources and protocols to continue meeting acute care needs at a distance. Additionally, privacy concerns have to remain appropriately addressed.

The current context builds upon an existing wave of innovation in behavioral health, with private equity and venture capital companies having invested more than $4.3 billion in behavioral health through June 2020 (Exhibit 4).

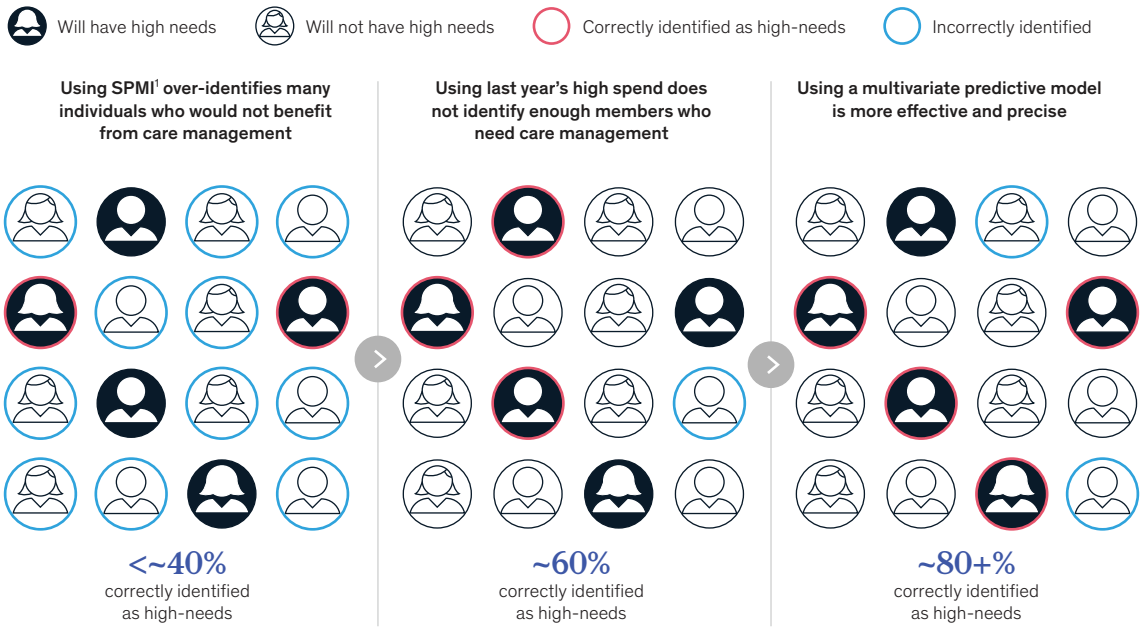
Integrate behavioral and physical health services

The clinical community has made major strides in developing evidence-based treatments for behavioral health conditions, but opportunity for improvement remains. These improvements may include at-scale adoption of these practices and improved collaboration with physical health services. Integrating universal screening for behavioral health conditions into primary and specialty healthcare services (including COVID-19 care) can support the shift to whole person care.

In addition to screening, other evidence-based prevention and treatment strategies can support integrated approaches. For example, medication-assisted treatment for opioid use disorder delivers a three-fold reduction in adverse health outcomes, including overdoses and emergency department visits for other complications related to opioid use. However, the National Survey on Drug Use and Health reports that only 25 percent of those with opioid use disorders receive spe-

Exhibit 3

Predictive modeling can be done at the individual patient level to identify those who would benefit from specific interventions.



[1] SMPI refers to standard definition of "Severe and Persistent Mental Illness."
Source: Illustrative claims data set from a single commercial payer in one state

Exhibit 4

Start-up innovation has rapidly grown to over $4.3 billion in behavioral health from 2015 through June 2020.

Type of innovation	Description	Private equity/venture capital funding through June 2020,[1] $M	Number of companies
Digital platforms to provide care	Platforms that connect patients with behavioral health providers	1,352	37
Digital therapeutics	Clinically validated digitalized therapy options that can be prescribed to treat behavioral health conditions	924	28
Patient self-help/ management	Support tools that enable people to manage their behavioral health conditions (eg, guided/ recorded exercises, suggested activities, daily reminders)	846	27
Data and analytics	Solutions that generate and deliver analytic insights, such as personalized behavioral health treatment plans or predictive analytics to inform early interventions	620	19
Innovations in care delivery	Care delivery models that offer wraparound supportive services or integrated primary and behavioral healthcare	441	13
Electronic health record/workflow tools	Platforms that enable comprehensive patient management (eg, case documentation, clinical information system, behavioral health electronic health records)	119	5

[1] Private placement by private equity and venture capital firms, excluding debt financing and initial public offerings (IPOs); funding as of June 2020.
Source: Crunchbase; company websites

cialty treatment, far lower than for proven treatments for non-behavioral health conditions.[35] From a prevention and early intervention perspective, investing in screening, brief intervention, and referral to treatment (SBIRT) can generate healthcare cost savings that range from $3.81 to $5.60 for each $1 spent.[36] To support better integration of care, strategies include increasing the behavioral health competency of primary care providers, expanding the use of peer counselors to promote engagement in care, and strengthening the behavioral health workforce.

Partner to address unmet health-related basic needs

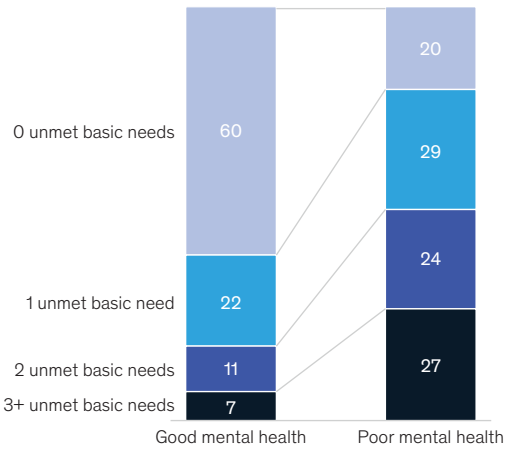
Healthcare leaders can partner to integrate behavioral health and human services for greater impact. In a recent nationwide survey, people with poor mental health were two times as likely to report an unmet basic need as those with good mental health, and four times as likely to have three or more unmet basic needs (Exhibit 5). Behavioral health conditions can interfere with work, family, and navigation of daily life. Whole person care approaches can improve outcomes across both healthcare and broader functioning in society.[37] For example, data sharing and increased connectivity between providers and community-based organizations have led to improved outcomes for patients with unmet basic needs.[38]

Several partnership models already exist to integrate delivering direct healthcare and addressing unmet basic needs. Further expansion can enhance their impact. For example, healthcare organizations could consider hiring peer supporters to improve the effectiveness of clinical services,[39] extend behavioral health networks to include community-based social service providers,[40] integrate behavioral health

Exhibit 5

Behavioral health and health-related basic needs are interlinked, however partnerships to integrate care are underutilized.

Unmet basic needs[1] by self-reported mental health
% of individuals



Partnership models to integrate social and behavioral health
examples

- Hiring **peer supporters** to improve effectiveness of behavioral health treatment
- Treating local community-based **social services providers** as an extension of the clinical network
- Integrating behavioral and social needs in **care management models** to improve whole person health
- **Offering supported employment** and improved return-to-work policies aligned with Americans with Disabilities Act

[1] Also referred to as social determinants of health or social needs, including income, employment, education, food, housing, transportation, social support, and safety. These basic needs, if unmet, can negatively impact health. In addition, factors such as race, ethnicity, gender and sexual orientation, disability, and age can influence health status.
Source: Press search; 2019 McKinsey Social Determinants of Health Survey, n = 2,010, respondents included those with Medicare or Medicaid coverage, individuals with coverage through the individual market who had household incomes below 250% of the federal poverty level, and individuals who were uninsured who had household incomes below 250% of the federal poverty level

and basic needs in care management models and offer supported employment and improved return-to-work policies aligned with the Americans with Disabilities Act.[41]

How to work toward solutions

Healthcare stakeholders can commit to elevating the focus on behavioral health and scaling solutions within their organizations with these tactical solutions. Organizationally, stakeholders can establish behavioral health-specific key performance indicators (KPIs) beyond the behavioral health silo and use these KPIs to evaluate executive performance. For their employees, members, and/or patients, stakeholders can adjust organizational language and policies to combat the pervasive stigma toward those with behavioral health needs, remove barriers to prevention and treatment services, and address mental and substance use disorders with the same urgency as other health conditions. Lastly, they can ensure equitable access to evidence-based behavioral healthcare across populations and geographies, including racial and ethnic minorities.

The behavioral health crisis in the United States has taken a toll on life expectancy, with potentially increased magnitude due to the COVID-19 pandemic.[42,43] Healthcare leaders have the power and responsibility to adopt or scale existing, science-based solutions. Their actions can create meaningful change to benefit their organizations, improve the healthcare system, and save lives.

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Insights on racial and ethnic health inequity in the context of COVID-19

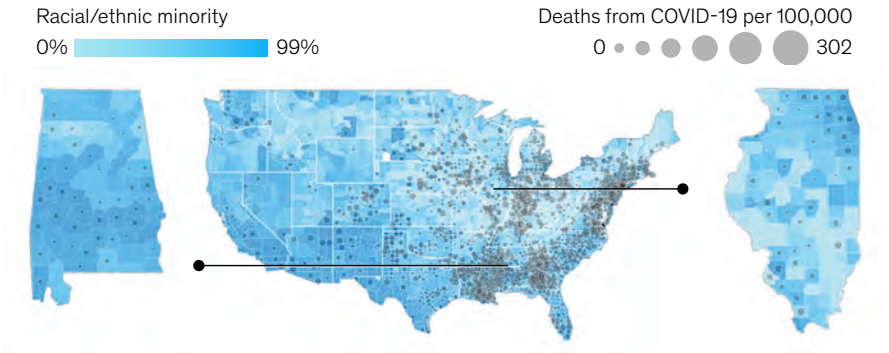
Erica Coe, Kana Enomoto, Alex Mandel, Seema Parmar, and Samuel Yamoah

McKinsey's Center for Societal Benefit through Healthcare shares insights on underlying health inequities that contribute to the disproportionate impact of COVID-19 on communities of color and vulnerable populations.

The disproportionate impact that the COVID-19 pandemic has had on communities of color and vulnerable populations is well documented, and has put a necessary spotlight on longstanding racial and ethnic inequity in health and healthcare. In this infographic, we bring attention to factors that contribute to health inequity in COVID-19 outcomes and beyond. These include socioeconomic factors and racism, which in turn affect clinical health, access to care, and quality and experience for Black and Hispanic/Latinx Americans, among other racial and ethnic groups. Insights are drawn from the McKinsey Center for Societal Benefit through Healthcare Vulnerable Populations Dashboard, McKinsey COVID-19 Consumer Insights Surveys, and publicly available data and academic research on COVID-19 and health equity.

1 COVID-19 is disproportionately impacting communities of color.

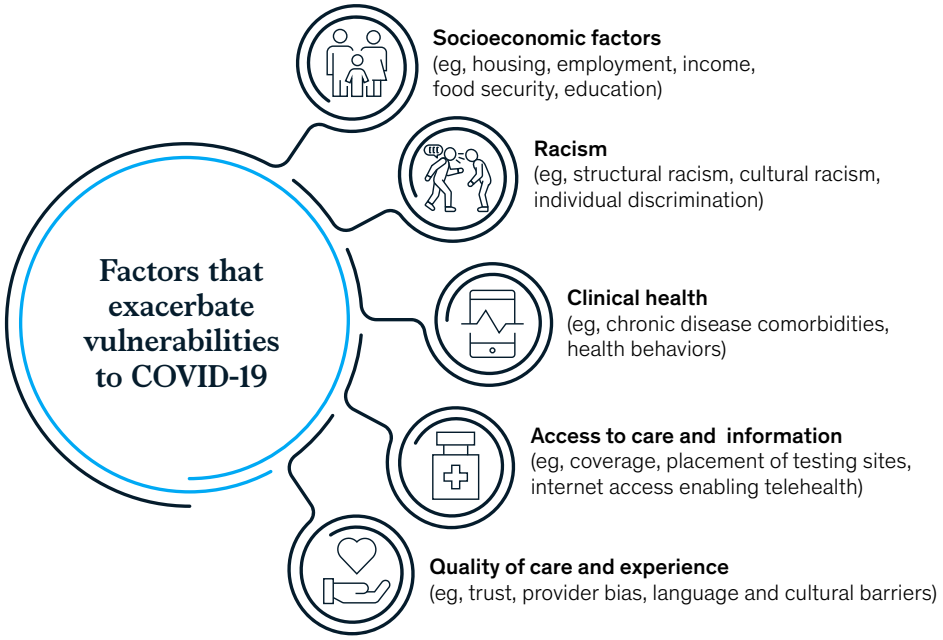
Racial and ethnic disparities in COVID-19 deaths per 100,000[1]



Compared to white Americans, the estimated age-adjusted COVID-19 mortality rate[2,3] for the following American racial/ethnic groups is:

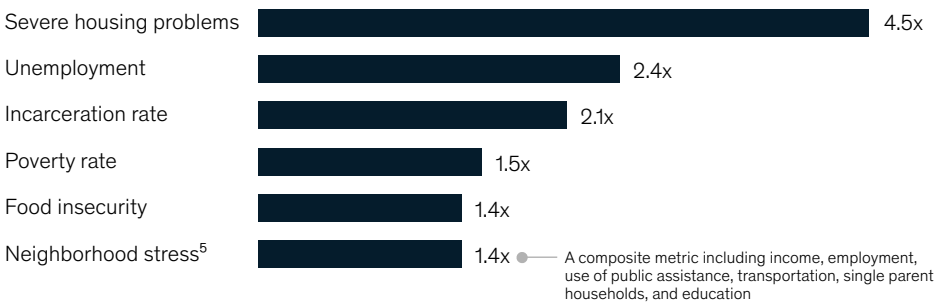
3.8x	3.2x	2.5x	2.6x	1.5x
Black	American Indian	Hispanic/ Latinx	Pacific Islander	Asian

2 Disparities in COVID-19 outcomes expose underlying inequities.



3 COVID-19 deaths are higher in areas with socioeconomic vulnerabilities, which intersect with race and ethnicity.

Ratio of COVID-19 deaths per 100K in areas with a higher concentration of socioeconomic vulnerability[4]



Example intersections of socioeconomic vulnerability with race and ethnicity

20% of the lowest-paid, high-contact **essential jobs** are held by **Black Americans**, heightening risk of exposure to COVID-19[6]

33% Black

23% Hispanic/ Latinx

are a part of the **prison population** (despite being 12% and 18% of the general population, respectively)[7]

Mass incarceration is associated with worse mental and physical health outcomes,[8] and in the context of COVID-19, jail conditions heighten risk—jail cycling (ongoing arrest and pre-trial detention practices) was associated with **16%** of COVID-19 cases in a single state[9]

(continued)

3 COVID-19 deaths are higher in areas with socioeconomic vulnerabilities, which intersect with race and ethnicity.

Example intersections of socioeconomic vulnerability with race and ethnicity

(continued)

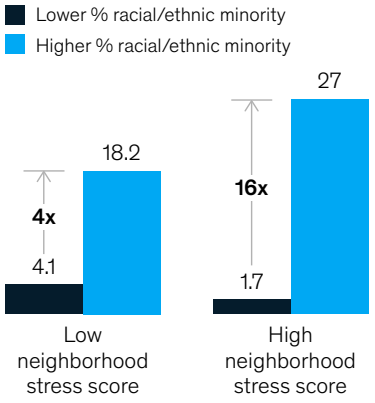
84% Black **88%** Hispanic/ Latinx live in **urban** areas,[10] where about **90%** of COVID-19 cases are concentrated.[11] Historical systematic denial of government and private sector services, a form of structural racism, is among factors that exacerbate health disparities for a range of health conditions (eg, asthma, cancer)[12]

39% Black **37%** Hispanic/ Latinx **22%** White households with children have been estimated to be **food insecure** during the COVID-19 pandemic[13]

Socioeconomic vulnerabilities contributing to disparities in COVID-19 deaths have been shaped by structural racism[14]

4 Racism has been associated with stress and negative health outcomes.

COVID-19 deaths per 100K across counties, by level of neighborhood stress score[7] **and concentration of racial and ethnic minorities**[15]



Racism affects both physical and mental health, but the association between reported racism and **mental health** has been found to be twice as large as that for physical health[16]

Vigilance (including stress associated with anticipated exposure to racism) increases likelihood of **depressive symptoms, sleep difficulties, and hypertension** and contributes to racial differences for these outcomes[17]

Among women with low socioeconomic status, **27%** of women of color report mistreatment in maternity care, compared to **19%** of white women[18]

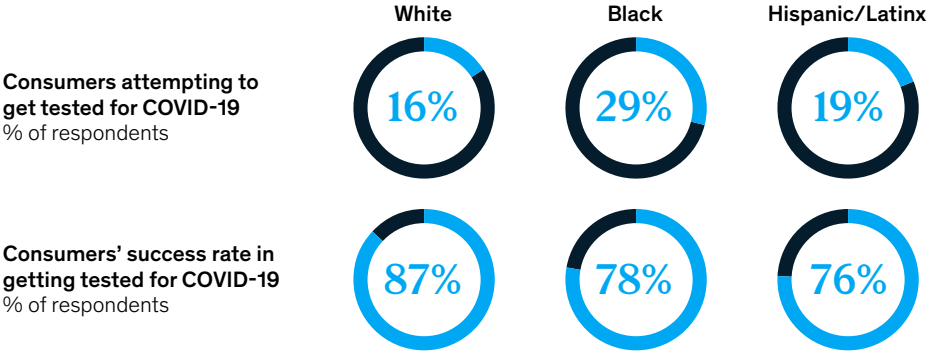
5 Black and Hispanic/Latinx Americans are at heightened clinical health risk for severe COVID-19 symptoms.

Black Americans have a **30%** **higher likelihood** of having a chronic condition compared to whites[19]

Patients with hypertension or diabetes, both **chronic conditions**, were up to **2x** **more likely** to be admitted to the ICU or die from COVID-19[20]

6 There are racial and ethnic disparities in access to care in the context of COVID-19.

Black and Hispanic/Latinx Americans were **more likely to try to get tested** for COVID-19, but **less likely to successfully get tested**[21]



Black Americans were **3x** Hispanic/Latinx Americans were **2x**

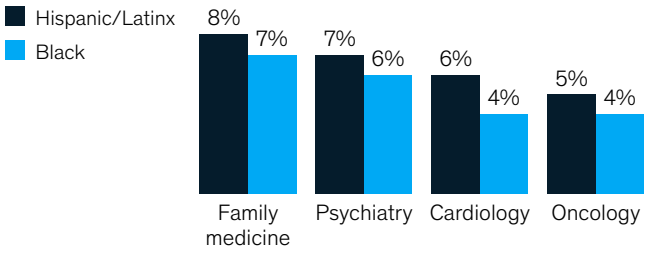
more likely to report loss of health insurance during the pandemic compared to white respondents.[21,22] Other contributing factors to disparities in testing may include: geographic placement of testing sites, access to transportation, testing center hours of operation, and access to paid sick leave

7 There is an opportunity to more broadly improve healthcare quality and experience for Black and Hispanic/Latinx consumers.

Greater representation could lead to more positive outcomes for communities of color

Examples of racial and ethnic inequity in healthcare quality and experience

Percent of physician specialists by race[23]



Hispanic/Latinx and Black Americans make up 18% and 12% of the general population, but make up **6%** and **5%** of physicians, respectively

32% of Black Americans have reported being personally discriminated against when going to the doctor or health clinic[25]

65% of Black patients have reported that a doctor of the same race would understand their concerns best[24]

Although language access is covered under the Civil Rights Act, only **61%** of hospitals offer linguistic and/or translation services

Healthcare organizations can innovate in-person, digital, and written solutions (eg, video remote interpreting, website usability)[26]

Racial and ethnic representation in the healthcare workforce is an important factor for building trust-based, empathetic, and unbiased relationships[27]

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[1] Racial and ethnic minorities included in county level analysis: American Indian, Alaska Native, Asian, Black American, Hispanic/Latinx, and Native Hawaiian or other Pacific Islander. Aggregate county-level deaths were sourced from the McKinsey Vulnerable Populations Dashboard from USA Facts and are not attributed to race or ethnicity.

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[4] Higher levels of socioeconomic vulnerability defined as the top quintile of counties for a given socioeconomic factor and lower levels defined as the counties in the bottom.

[5] Neighborhood stress score is calculated based on a composite of Census values including income, employment, use of public assistance, transportation, single parent households, and education. See McKinsey Vulnerable Populations Dashboard data dictionary for additional detail.

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[19] CDC. Includes cardiovascular disease, asthma, diabetes, chronic kidney disease, hypertension, and obesity.

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[21] McKinsey COVID-19 Consumer Survey as of June 8, 2020. Respondents were asked whether they have lost health insurance since the beginning of the coronavirus/COVID-19 pandemic began (eg, due to job loss), but exact reasons for job loss were not reported.

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[26] 2018 American Hospital Association Statistics, Figure 6; "National standards for culturally and linguistically appropriate services in health and health care: A blueprint for advancing and sustaining CLAS policy and practice," HHS Office of Minority Health, April 2013; Title VI of the Civil Rights Act of 1964.

[27] Williams DR and Cooper LA, "Reducing racial inequities in health: Using what we already know to take action," *Int J Environ Res Public Health*, 2019, Volume 16, p. 606.

From "wartime" to "peacetime": Five stages for healthcare institutions in the battle against COVID-19

Penelope Dash, Prashanth Reddy, Shubham Singhal, and Kyle Weber

Healthcare has found itself tested by the pandemic. The frontlines are delivering heroically, but the next normal for healthcare will look nothing like the normal we leave behind.

In "Beyond coronavirus: The path to the next normal,"[1] we outlined five stages that leaders must plan for: Resolve, Resilience, Return, Reimagination, and Reform (Exhibit 1)**.** Healthcare leaders face a multifaceted challenge: combating the healthcare crisis on the frontlines while also tackling similar issues as other industries, such as employee safety and economic challenges.

Most healthcare leaders have already assembled high-functioning teams to respond to the immediate crisis resolving to manage the immediate need to care for the surge of COVID-19 patients. They also have demonstrated the resilience required to deal with fast-moving liquidity, solvency, and economic sustainability challenges.

Many leaders now are beginning to recognize the importance of planning for the complicated return stage. Return from the lockdowns will not be easy—particularly as we remain vigilant against virus resurgence in the absence of a vaccine or treatment.

For some leaders, it has been difficult to dedicate much time to reimagination and reform. The pandemic is likely to result in a series of discontinuous changes that will fundamentally reshape healthcare. These changes include:

- The expectations and needs of individuals as citizens, consumers, patients, and employees
- The combination of resilience and productivity demanded by the funders of healthcare expenditure
- The need to be able to flex up and down care capacity and shift care across modalities, including virtual health platforms
- An opportunity to unlock the promise of exponential improvement[2] through technology and medical science

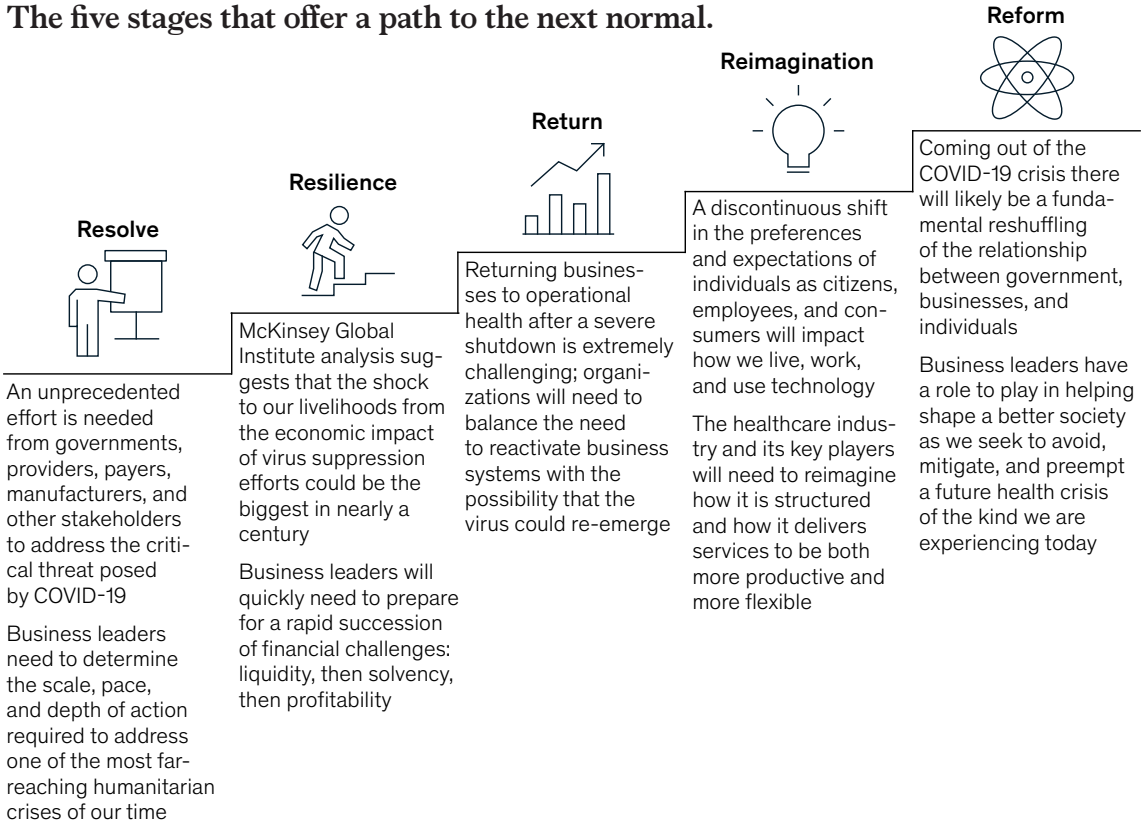
Moreover, healthcare reform often has followed major economic shocks. While there are an extensive set of issues for healthcare leaders to consider across each stage, below are some critical items to consider.

Actions now

This is the time when boards and CEOs will likely have the greatest opportunity in their careers to positively impact their organizations and the communities they serve. This opportunity should not be squandered. Boards and CEOs should prioritize creating an environment where decisions are made calmly and based on facts. Second, given the high degree of continuing uncertainty, leaders should ensure they are actively tuned into the real-time information from all levels in their organization, plus outside forces, to inform decisions. Finally, the ability

Exhibit 1

The five stages that offer a path to the next normal.



to act, innovate, and execute at scale at previously unheard-of speeds likely will be critical. We have observed many examples of organizations that have accelerated projects scheduled to take months and years to a timeline of a few days and weeks.

An important aspect will be for CEOs to organize their management team to act against each of the five stages. Each organization will need to make this decision individually, but we see three guidelines for selecting accountable leaders. First, CEOs must be able to trust the accountable leader's judgment within the role's decision-making context, particularly in this speedy and uncertain climate. Second, the accountable leader should directly report to the CEO. This reporting relationship does not need to have been a preestablished one and can be created ad hoc during this crisis. Third, CEOs must ensure that accountable leaders are motivated by a deeper resolve, whether it be to address the humanitarian crisis, or to protect the team and workers within the organization.

Five stages to plan for

Phase 1

Resolve: How organizations can structure a Nerve Center to combat COVID-19

Globally, crisis response efforts are in full swing. Healthcare systems are doing everything in their power to increase capacity of beds, supplies, and trained workers. Related organizations are assisting with the consumer, technology, financing, and policy elements of the response.

At this stage, all organizations should have a fully operational nerve center focused on major areas of operational continuity. There are several themes that are relevant across geographies:

First, assess and expand supply and care capacity[3]—Immediately expanding access to care (for example, intensive care unit [ICU] beds), medical equipment (such as personal protective equipment [PPE], ventilators, oxygen, testing equipment), and an appropriately trained workforce (for example, ICU nurses) are imperative to meet the critical care demand surge. Addressing supply and demand mismatch is paramount.

Freeing up critical care capacity (for example, deferring elective procedures, moving non-COVID-19 patients to alternate sites), building alternate capacity (such as converting ambulatory surgery centers, unstaffed floors, physical therapy space, outpatient facilities, non-healthcare facilities), plus delivering appropriate care in nonacute settings (for example, home care, telehealth) are all important.

Fortifying the supply chain also is critical. Usage of certain supplies has grown exponentially. For example, PPE usage has grown in terms of volume of users, moving beyond healthcare workers to include transport workers and police. The settings also have expanded, with those in areas such as hospital waiting rooms using PPE. Organizations should prepare a list of key supplies, equipment, tests, and drugs, understand usage rates, and establish supply conservation protocols. Organizations should consider sourcing directly from manufacturers, in-house production, and protocols for supplies sterilization and reuse.

Second, adapt care delivery models—Ensure clinical protocols are rapidly established based on emerging data and experience. These new protocols could include expansion of home-based services, engaging patients with chronic conditions using technology, creating dedicated COVID-19 treatment/triage sites of care (for example, offsite ambulatory/drive-through testing), and rescheduling nonemergent procedures.

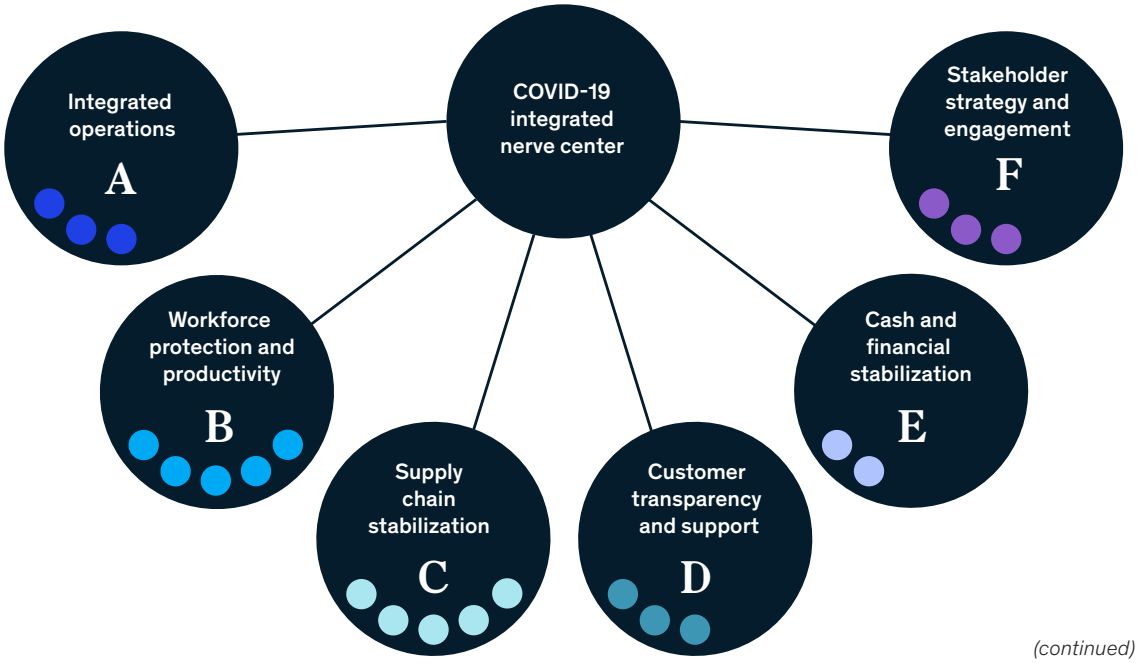
Third, lower financial barriers where they exist—Consider eliminating out-of-pocket payment for COVID-19 patients. This may involve extending government funding for testing and treatment in countries without broad health insurance coverage. It also may include elimination of cost sharing and out-of-network restrictions for testing and treatment within health insurance.

Fourth, provide COVID-19-specific guidance—Develop new guidelines to ensure access across different sites of care for both diagnostic testing and treatment of COVID-19. Communicate these new guidelines through multiple distribution channels, such as responding to inquiries at call centers, to ensure individuals are aware of guidelines and are actively seeking appropriate care.

PHASE 1: RESOLVE

Overview of responsibilities for the minimum viable nerve center.

Based on discussions with health and risk professionals



(continued)

PHASE 1: RESOLVE *(continued)*

Overview of responsibilities for the minimum viable nerve center.

A. Integrated operations	
Issue map and management	Single source of truth for issue resolution and tapping surge resources where needed
Porfolio of actions	Trigger-based portfolio of actions
Leadership alignment	Align leaders on scenarios | Roundtable exercises
B. Workforce protection and productivity	
Policy and management	Policies | Portfolio of actions including prevention | Escalation criteria and process
Two-way communication	Multichannel communications | Confidential reporting mechanisms | Source of truth
Personnel and contractors	Tiering (all/some/no work from home) | Work-from-home infrastructure setup (VPN, telephony) | Contractor incentives
Facility and onsite norms	Staggering work shifts/times | Prevention (eg, physical distancing) | Closures
Health and govt engagement	Local and federal regulators and public health officials
C. Supply chain stabilization	
Supplier engagement	Cross-tier risk transparency | Supplier restart | Order management | New supplier qualifications
Inventory management	Critical part identification | Parts rationing | Location optimization
Production and operations	Operational impact assessment | Production capacity optimization
Demand management	S&OP SKU-level demand signal estimates by macro scenario | Production and sourcing plans
Logistics	Ports | Logistics capacity pre-booking | Route optimization
D. Customer transparency and support	
B2B transparency	Comms to B2B customers (eg, microsite) | Scenario-based risk comms
Customer protection	Prevention interventions across customer journey | Customer team training | Execution monitoring
Customer outreach	Customer comms re: COVID-19 practices | Fact-based reports on issues | Situation comms
E. Cash and financial stabilization	
Scenario definition	Relevant scenarios based on latest epidemiological and economic outlooks
Financial stress tests	Financials in different scenarios, especially working capital requirements
F. Stakeholder strategy and engagement	
Member protection	Protective interventions across member journey | Execution monitoring | Access to care/testing
Demand responsiveness	Reaction to member's demand signals | Flexible product and service forecasting
Provider support	Comms re: COVID-19 practices | Fact-based reports on issues | Situation comms

Fifth, provide guidance for non-COVID-19 healthcare—Minimize barriers for non-COVID-19 acute and chronic care. This may include ensuring all patients who need care can receive it quickly without needing to navigate complex pre-approval processes and ensuring prescriptions can be refilled through automated delivery services. Encourage alternative and remote care options (for example, telemedicine, home-based monitoring) to preserve system capacity for COVID-19 patients.

Phase 2

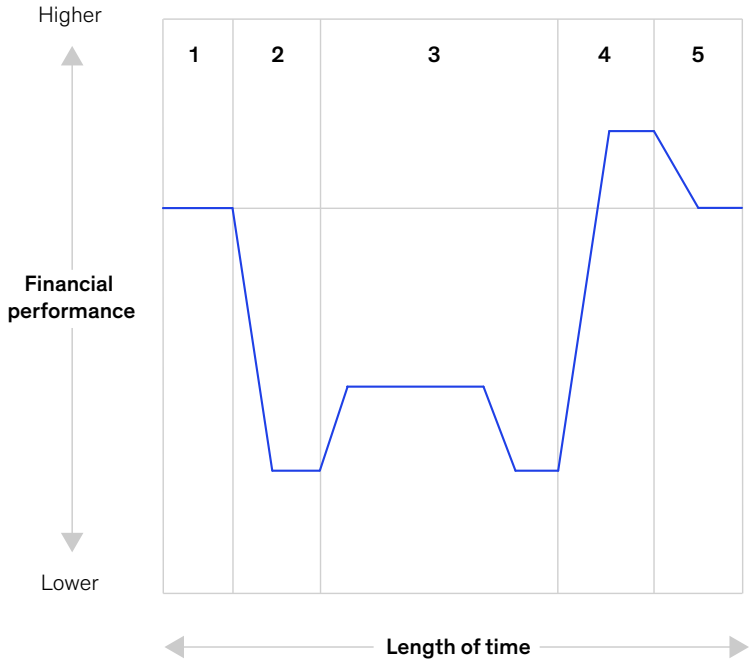
Resilience: How the economic impact may affect healthcare organizations over time

Recent McKinsey Global Institute analysis suggests that the shock to our livelihoods from the economic impact of virus suppression efforts could be the biggest in nearly a century.[4] We see three distinct but overlapping sets of issues for which healthcare leaders will need to prepare as the crisis unfolds: maintain liquidity, address solvency, and grow for sustainability.

PHASE 2: RESILIENCE

Long-term impact of COVID-19 on a typical health system's operating margin.

Financial performance over time (provider example)



1. Pre-COVID-19 performance
2. Elective, ED, and AMB volume decline, prior to COVID-19 ramp-up
3. COVID-19 impact: Ramp-up, plateau, and decline, with continued elective volume loss
4. Elective recapture following COVID-19 resolution
5. Elective volume stabilization following support of COVID-19 pent-up demand

Keys to resilience

Maintain liquidity

- Providers face immediate threats to their cash position, being harmed from multiple, compounding angles
- Payers face a distinct but similarly challenging position to their liquidity
- Services firms will face a variety of competing forces that impact cash position

Address solvency

- Businesses will need to take aggressive action to remain solvent—must be careful not to over-index on debt covenants tied to liquidity, missing those tied to solvency
- For payers it is not difficult to imagine a sequence of events leading to insolvency
- Other types of healthcare organizations may face a similar set of solvency issues that result from a combination of declining asset values and increasing expenses and liabilities

Grow for sustainability

Organizations that survive the liquidity and solvency issues will have an opportunity to reshape the healthcare system. While strategies vary, themes emerge:

- Acquiring strategic assets, partnering to create/fortify ecosystem, responding to coverage shifts, capitalizing on moves toward digital therapies and care delivery, tightening relationships with public-sector agencies, embedding advanced analytics in operations *(In the United States, government assistance has focused on boosting providers' resiliency)*

ED, emergency department; AMB, ambulatory.

Maintain liquidity

All businesses need cash flow models to identify when their "cash crunch" is coming. Addressing this cash crunch will take different forms among different healthcare institutions:

Providers face immediate threats to their cash position, facing headwinds from multiple, compounding angles. The pandemic already has caused providers to be severely impacted. In response to regulators' guidance, many hospitals eliminated scheduled (often described as "elective") procedures—which tend to be prepaid and sources of predictable cash flow—to make capacity available for an anticipated surge of COVID-19 cases. As a result, net service revenue has declined as much as 50 percent for hospitals in communities that have not yet seen a surge in COVID-19. At the same time, many hospitals have faced increasing costs in the form of labor, such as overtime, and other external spend (for example, off-contract PPE purchases). Physician practices, both independent and those employed by health systems, have faced a significant reduction in volume as patients practice physical distancing. Hospitals also report that emergency room volumes for conditions such as stroke, chest pain, and appendicitis have declined as well, with cases appearing later in the course of illness that are more serious. These forces, combined with the possibility that consumers and payers may delay or default on payments due to their own cash flow constraints, result in significant pressure on provider liquidity.

Payers are experiencing a temporary reduction in claims spend, with growing challenges around cash management. Deferment of nonemergent utilization, such as joint replacements, and elimination of certain emergent spend, such as trauma cases, is creating a temporary but strong reduction in medical claims spend. This short-term boost in cash flow is being offset by reduced access to credit, a decrease in market-to-market value of investment portfolios, and impairment from other balance sheet liabilities. Shocks to provider economics could further create need for advance payments, bridge loans, or other cash flow acceleration requirements to assist providers. In addition, many payers are facing delays or reductions in premium payments (for example, "premium relief") as a result of government intervention, customer negotiation, or self-driven interventions for community support. Further, in the event that self-insured customers go into bankruptcy, payers may be required to backstop unpaid provider payments.

Services firms face large variation in volume and cash flow. Many services firms will be impacted by shifts in enrollment across traditional payer segments. Those in the United States that play in Medicaid and Individual markets are expected to see additional volume. Those focused on traditional commercial group segments likely will see a reduction in demand. Service firms will likely be squeezed by cash-constrained purchasers seeking to renegotiate contracts and move to lower tiers of service. Companies with payments tied to value delivery may face longer-lasting liquidity issues: healthcare delivery is not expected to return to normal volumes and mix until long after COVID-19 has been stemmed.

Address solvency

Following or concurrent with liquidity challenges, businesses should consider aggressive action to remain solvent. While these actions sometimes involve addressing a set of issues similar to those described regarding maintaining liquidity, there are additional distinct challenges. For example, while an organization may have sufficient cash, it likely will need to address declining operating performance, diminished investment portfolio valuation, and degradation of the balance sheet that results in rating agency actions. The latter could then trigger debt covenants and penalties that undermine the organization's solvency.

For smaller providers, addressing solvency can be particularly challenging. The uncertainty of the length of the COVID-19 crisis and magnitude of supplemental funding (such as

Sidebar 1

Provider resiliency is ongoing in a COVID-19 era.

In the United States, government assistance has focused on boosting providers' resiliency as they face immediate funding challenges responding to the crisis. The CARES Act addresses resiliency in the following ways:

- **Supplying direct funding to providers** to cover unreimbursed healthcare-related expenses or lost revenues attributable to the public health emergency resulting from COVID-19 ($100 billion total pool)
- **Guaranteeing that providers will be fairly reimbursed for COVID-19-related treatment** via existing or new agreements with payers
- **Granting providers access to interest-free cash advances** through the Medicare Advance payments program
- **Removing constraints on providers' ability to respond adequately to the crisis** and allowing greater flexibility to deliver non-COVID-19 services in parallel (for example, waiving inpatient and long-term-care eligibility rules, allowing reimbursement for telehealth elective procedures, investing $1.3 billion for community health centers to build COVID-19 capabilities)

Payer liquidity may be negatively affected by measures intended to shield members and providers from COVID-19-related costs (for example, mandate to reimburse COVID-19 testing at no cost to patients), but it is unclear if this is material.

those funds connected to the Coronavirus Aid, Relief, and Economic Security [CARES] Act) makes planning extremely difficult for independent physician practices, home health agencies, and ancillary healthcare providers, such as dentists and optometrists. While these challenges will exist for larger providers, stronger balance sheets often make them more able to weather the impact.

For payers, it is not difficult to imagine a sequence of events that challenge solvency. For example, during an economic downturn it is expected that members will shift from self-insured segments to fully insured segments (for example, from administrative services only [ASO] to fully insured group, Individual, Medicaid). These new fully insured members require greater capital reserves compared to self-insured members. At the same time, during an economic downturn the value of the payer's reserves, to the extent they are connected to equities or other markets, will likely decline in value. These effects combine to significantly reduce the payer's capital reserve ratio (such as "risk-based capital" in the United States). All of these factors together can trigger debt covenants and penalties that leave the payer underwater.

To address these solvency challenges, organizations of all types may seek to make efforts to offset the impact on operating performance while simultaneously strengthening the balance sheet. First, organizations should seek to materially improve productivity and efficiency. We have previously assessed that $1.2 trillion to $2.3 trillion could be saved over the next decade if healthcare delivery were to move to a productivity-driven growth model. This assessment suggests there are ample opportunities to improve productivity and efficiency.[5] At the same time, organizations may consider revisiting and recalibrating their capital plans in light of the current crisis to ensure investments strike the appropriate balance between directly responding to COVID-19, addressing the aforementioned solvency concerns, and growing for sustainability (see Sidebar 1, above).

Grow for sustainability

Organizations that maintain liquidity and address solvency may be more equipped to shape a healthcare system that better serves individuals and their healthcare needs, while preparing the organization's own position in future crises. While specific strategies may vary, growing sustainably often will touch on similar themes:

— Address shifts in volume and economics. Organizations may consider actively rebalancing their portfolio and capital allocation decisions to take advantage of anticipated changes to coverage and how services are delivered. For example, providers and services firms in the United States may need to dedicate resources to developing new models for serving Medicaid patients (given an anticipated influx of individuals with Medicaid coverage) where historically the economics have been challenging.

— Respond to shifts in care delivery model. The COVID-19 pandemic likely will lead to lasting changes to how care is delivered. Individuals may be more receptive to remote or technology-enabled models, including digital therapies and telehealth. Payers, providers, and service organizations that develop or acquire capabilities to better serve their customers with remote models likely will be well positioned for future growth.

— Shore up capabilities in digital and analytics. There remains a tremendous untapped opportunity in healthcare to deploy digital technology and advanced analytic capabilities to improve operations and effectively orchestrate care delivery. For example, payers that have more sophisticated product, pricing, and underwriting models powered by advanced analytics may be better able to retain customers during a downturn and grow new business coming out of a downturn.

Phase 3

Return: How organizations can begin to scale up operations once the worst of the crisis is over

Many industries will face the challenge of returning business to normal as the COVID-19 crisis subsides, but for healthcare organizations it will be even more complex. Given the possibility of subsequent waves of COVID-19, organizations will need to define new ways of working to prevent, identify, report, and contain future flareups.

Providers will need to continuously rebalance the retention of capacity for ongoing COVID-19 volume. This requires maintenance of excess demand/flexibility in case of a COVID-19 resurgence and capacity for addressing pent-up demand for non-COVID-19 services. Providers should ask themselves:

1. What should my testing/tracing/isolation strategy be and how do I effectively collaborate with payer and government partners?
2. How much capacity do I need in reserve for various resurgence scenarios?
3. How do I maintain resurgence capacity and what does that look like?
4. How do I revert to managing non-COVID-19 care?

Testing, tracing, and isolation strategies should be scaled based on demand modeling, recognizing that there is still significant uncertainty around any demand estimate. Approaches should then be standardized via clear protocols. The most effective protocols will start the "funnel" at the patient's home. Providers, in collaboration with their payer partners, could use member education channels and have detailed plans for using telehealth and remote monitoring capabilities, along with home care. After testing, the handoff between stakeholders and transition from testing to tracing is critical. Providers may need to coordinate tightly with government agencies to share information that allows for rapid and effective tracing, subject to relevant privacy laws

PHASE 3: RETURN

Providers and payers can take steps across their organization to reactivate non-COVID-19 capacity.

	Provider	Payer
Talent	• Establish proactive program for caregiver healing • Understand gaps in readiness to scale non-COVID-19 capacity	• Engage in broad workforce renewal • Supplement talent in areas of emerging importance to next normal
Customers	• Reestablish the health system as a safe place for patients • Learn patients' preferences on new forms of healthcare	• Engage at-risk members • Promote a differentiated telehealth program
Operations	• Design operations to allow for flexible transition from/to COVID-19 operations • Sequence return of non-COVID-19 clinical volume	• Ensure appropriate payment for services offered during crisis • Double down on member communications, care/utilization management, and care navigation
Regulations	• Engage regulators to maintain crisis-driven changes in rules where patient care was improved • Coordinate on widespread testing and tracking initiatives	• Engage regulators to clarify and/or codify rules established in crisis • Shape the narrative on how next normal may be regulated
Finance	• Begin proactively utilizing new capabilities • Appropriately generate reserves	• Allocate capital to developing new capabilities • Ensure appropriate reserves

and norms. Simultaneously, providers will need to send and receive a constant flow of information from government agencies on tracing progress, while ensuring appropriate privacy safeguards. This will let them understand the current state of the epidemic, refine testing strategies, and inform plans to ramp up non-COVID-19 volume.

Staying prepared for resurgence scenarios would start with a multi-scenario modeling exercise, likely first with a broader industry model, but then localized to each community. Localized modeling should consider the prior experiences of similar communities. It would need to be developed collaboratively with local authorities who may already be creating isolation protocols in a resurgence scenario. Resurgence scenarios may loop back into testing, tracing, and isolation strategies.

Maintaining resurgence capacity will, in many localities, look much like solidification of existing capacity. Talent teams should quickly launch retention, renewal, and recruiting strategies. These strategies may include "readiness/burnout" testing to proactive "caregiver healing" offerings (for example, onsite child care). One possibility is that regulators allow crisis-driven rule changes that created capacity flexibility (for example, telehealth reimbursement parity). Providers, with regulator engagement, may consider exploring keeping alternative sites (such as field hospitals) without creating undue cost/workforce pressure. Other localities less affected by the first COVID-19 wave should prepare by replicating many of these new ways of working.

Reverting to non-COVID-19 care will require extensive planning and market testing. This starts with prioritizing services for non-COVID-19 patients based on health impact, urgency, staff and bed capacity and recognizing that some patients may prefer to receive care remotely. Providers will need to work closely with public- and private-sector payers in

addressing pent-up demand while avoiding financial harm to individual organizations.

Payers will need to answer similar questions:

a. What steps are required to reinforce and align providers against best-practices for testing, tracing, and isolation?

b. What do resurgence scenarios look like?

c. What policies should be adopted to reinforce provider capacity and quality of care delivery in case of a resurgence?

d. How should I prepare for incoming volume of non-COVID-19 care and shifts in payer coverage?

Payers will have a major role to play in reinforcing and aligning providers with practices for testing, tracing, and isolation. First, payers need to create appropriate reimbursement policies and incentives for providers to build the capabilities that allow for starting the testing/tracing/isolation "funnel" at the patient's home. Further, by acting as a conduit for knowledge sharing between providers, payers can cascade best practices and create shared guidelines. These guidelines should feed customer engagement channels in order to reinforce communications from providers regarding preventive care tactics and when and how patients should seek testing. Payers should consider means of further incentivizing proper member behavior, as well as directly engaging at-risk members. Finally, payers may consider acting as advocates and conveners to help establish key partnerships (for example, group purchasing organizations for test kits).

When modeling resurgence scenarios, payers should work with local providers to share data and analytics resources. These relationships are important as providers can share more real-time data and qualitative inputs, while payers can bring a broader data set (for example, by coordinating across providers) and analytics talent. Modeling outputs will inform both provider and payer capacity and financial planning.

In addition to enabling provider capacity, payers may seek to incentivize ways to ensure quality of care delivery in the event of a COVID-19 resurgence. These practices will start with establishing appropriate documentation, adjudication, and payment protocols for procedures conducted during the crisis. Establishing new reimbursement rules for alternative sites and alternative staffing for services will serve to reinforce best practices that providers should pursue in capacity maintenance. Finally, payers can engage and educate regulators on new standards and lessons, such as with digital therapeutics.

A return to normal for payers will not only involve preparing for non-COVID-19 care volume, but also adapting to expected shifts in payer coverage, depending on geography. Payers will have a key role in ensuring the sustainability of the healthcare ecosystem and eliminating bottlenecks to minimize patient harm. Financial modeling will need to consider pent-up volume, possible increases in medical costs resulting from delayed non-COVID-19 treatments and procedures, changes in reimbursement based on (potentially new) coverage, and next normal procedures and volumes (for example, telemedicine and greater mail-order pharmacy volumes).

Modeling insights should cascade into actions to (1) enhance internal operations to reduce bottlenecks in the system, (2) create data-sharing protocols, and (3) engage regulators to curb unintended risks to the system at-large. First, payer talent teams should engage in broader workforce renewal similar to providers, while also reskilling and restaffing for new spikes from pent-up demand. For example, clinical staff involved in prior authorizations will need to be trained/redirected to an expected increase in at-home care delivery. Next, changes to a member's insurer or coverage will require new data-sharing pipes internally and externally. These actions will ensure member information continues to be integrated into care and does not cause breaks in payer and provider workflows. Finally, payers may seek to actively monitor risk-of-care access, cost, and quality at the system level against unintended consequences. For example, payers could help regulators identify risks of pent-up volume going to low quality sites of care, curbing these trends proactively.

Phase 4

Reimagine: How we can fundamentally reinvent health services given what we have learned

Reimagining healthcare systems and services will require the imagination of many. The innovation and resourcefulness of healthcare organizations in the immediate response to this crisis is inspiring. This crisis has revealed not just vulnerabilities in our systems, but also transformative opportunities to improve healthcare. During this crisis, leaders have had to reexamine their understanding of how and where care can be provided, of how and where professional boundaries are truly fixed versus flexible, of which costs are truly fixed versus variable, which resources are nice to have versus required.

Many of the changes in healthcare delivery adopted during the COVID-19 crisis will also result in more productive healthcare services—something much needed in many healthcare systems globally.[6] Going forward, systems must find ways to (1) create a system capable of rapidly flexing up critical care capacity, (2) strengthen resiliency across all parts of the healthcare system, and (3) improve productivity.

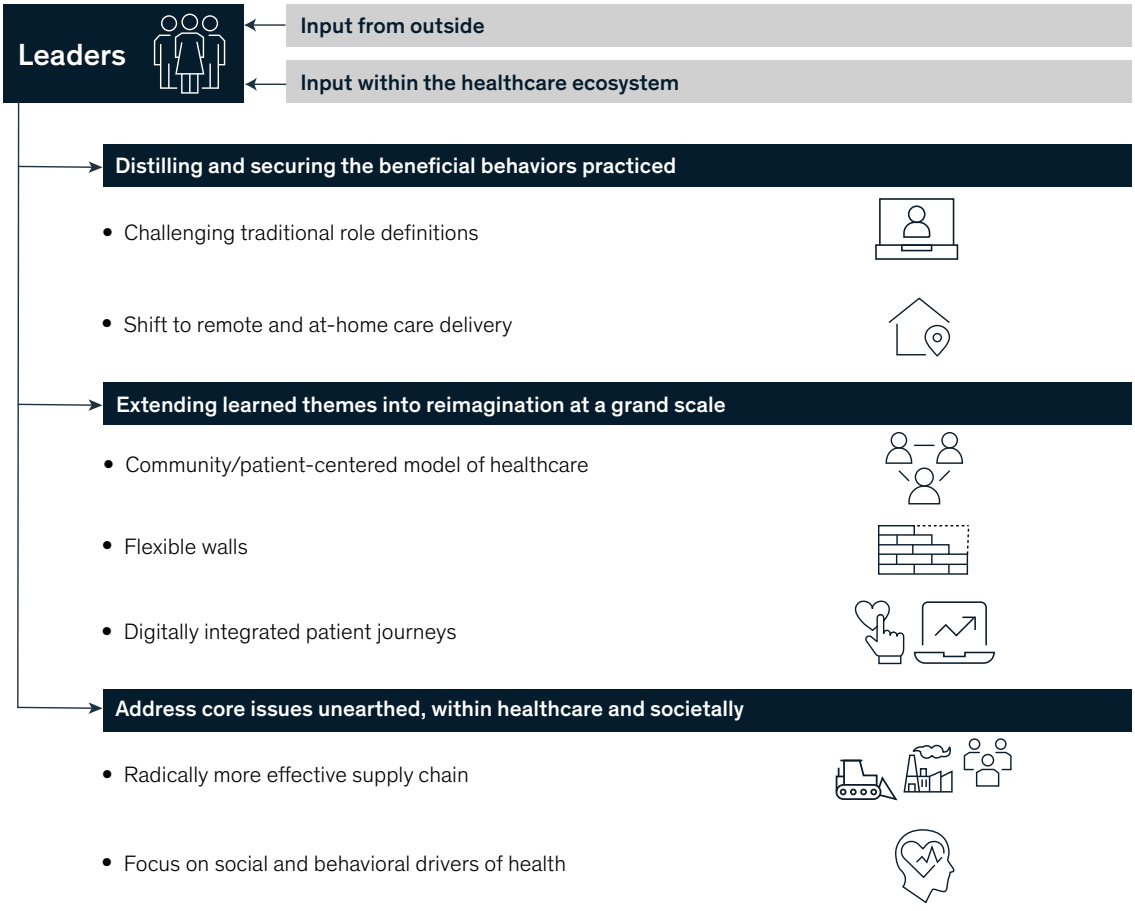
To reimagine healthcare, we would suggest healthcare leaders focus on three emerging themes.

Distilling and securing the beneficial behaviors practiced

Challenging traditional role definitions. Healthcare productivity remains restricted by shortages of appropriately trained clinical staff and the continued prevalence of inefficient and highly manual activities. It is imperative to improve efficiency by giving nonclinical

PHASE 4: REIMAGINE

How can we fundamentally reinvent health services in a different way?



staff the capabilities to take on basic but critical activities and unlock clinician capacity for more advanced functions. The crisis has also shown that as demand for services in many specialties declined, the overall demand for clinicians increased and ability to redeploy across specialties has been an important unlock.

Shift to remote and at-home care delivery. Over the past few weeks we have observed a rapid adoption of remote consultations and telehealth. Constraints, either regulatory or consumer/clinician willingness to try, have relaxed and may be sustained. Similar trends can be seen across digital therapies, remote monitoring, and select at-home hospital procedures.

Permanently embed speed of decision making and execution. Most organizations have found that decisions that took weeks or months were now taking a matter of days. Cross-organizational collaboration has been easier. Stakeholders have benefited from the clarity of focus on the mission. Distilling the learning from the crisis to permanently adopt new ways of working will be important. The scale of change unleashed by the crisis will restructure healthcare over many months and years.

Extending learned themes into reimagination at a grand scale

Community/patient-centered model of healthcare. As traditional roles in healthcare delivery are shifting, so too should the care models. The current crisis has highlighted how challenging it can be for individuals to interact with the healthcare system and receive consistent, personalized guidance and understand care alternatives. The solution could be reorientation around community and patient needs. Healthcare organizations can facilitate this change in many ways, primarily by shifting focus away from traditional sites of care and departments and onto integrated care settings and hub-and-spoke models that address patients' needs.

Data sharing. There is a crucial need for real-time data on patients presenting with symptoms of COVID-19, hospital admissions and use of critical care is crucial to monitoring the spread of the virus and demands for healthcare services. This will continue to be important as isolation measures are lifted to identify emerging resurgences as well as to identify the degree to which non-COVID-19 care can be safely provided.

Flexible walls. The challenge of traditional roles can be extended to traditional definitions of facilities and clinics. Despite the range of geographical variation in hospital utilization,[7] recent weeks have demonstrated that capacity remains a global constraint in times of crisis. There is an opportunity to redesign the healthcare system by redefining the boundaries of traditional care settings to enable flexibility across sites of care. Facilities should be able to dynamically scale up or scale down capacity at different acuity levels to respond to changing needs. To facilitate this rapid scaling, health systems should pre-identify alternative sites of care with clear protocols, partnerships (if applicable), and tiers of escalation to respond rapidly in times of crisis.

Digitally integrated patient journeys. The rapid adoption of digital care delivery and remote monitoring has reduced skepticism and shortened adoption curves for care pathways and analytics-based, personalized patient journeys that benefit the patient, staff, and organizations. "Consumerism" sentiment may yet extend further into an expectation of such digitally integrated care.

Addressing core issues unearthed, within healthcare and societally

Radically more resilient, transparent, and efficient supply chain. Existing healthcare supply chains failed to adequately respond to the world's surge in need for critical medical supplies. There is a critical need to redefine models that enable scalable, agile production and optimized distribution based on both actual and anticipated needs. Alternative suppliers are being leveraged today, but this is not yet fundamental supply chain reimagination. Future steps could include governments rewarding producers for being able to scale up production of critical inputs to patient care in a

time of crisis, providers and governments maintaining greater minimum levels of critical items (such as ventilators and PPE), as well as requirements to build intentional redundancy into supply sources to reduce concentration in any one geography. The consumer retail supply chain was redesigned in the 1990s to be able to provide transparency of inventory from the retail store shelves to the factory floor and everything in between. The medical supply chain, lacking such transparency, has been shown to have significant challenges in dynamically adjusting to demand or supply shocks.

Focus on holistic drivers of health. Addressing social needs (for example, affordable nutritious food, safe housing, social support)[8] and behavioral health (including mental health and substance use) needs[9] has proven meaningful in improving health even before COVID-19. This is all the more important in times of crisis, when latent demand and increased societal stressors exacerbate social and behavioral health needs.[10] The current healthcare system focuses on physical health and often does not adequately address social and behavioral health needs. Mental distress also is shown to exacerbate physical health symptoms, further increasing underlying risk. Furthermore, obesity has been shown to increase risk and severity of exacerbations from viral respiratory infections (and well understood to result in a variety of health issues). Helping patients holistically manage their health and well-being with interventions to address physical, behavioral, and social health should be prioritized with renewed vigor. Enhancing the productivity and resiliency of our communities requires explicit collaboration between payers, providers, local community agencies, and private, non-healthcare enterprises. Practically, this will mean reimagining the scope of what we define as "healthcare," blending-in models oriented around behavioral health and social needs such as social support, food security, housing, and wellness.

Even as we describe the above emerging themes, many unknowns remain on ways in which healthcare will be fundamentally reshaped post-COVID-19. As such, the successful "reimaginers" may share a few traits:

- The ability to continually develop ahead of the market insight and foresight into the changing needs and preferences of individuals—as citizens, workers, and consumers—will shift under COVID-19. Steve Jobs, the late Apple CEO, was able to see that consumers would build an inseparable relationship with smartphones well before consumers knew they wanted one.
- The skill to translate how broad societal expectations will manifest themselves in government regulations.
- An innovation engine to translate these insights into changes in their current business models, creating entirely new businesses, and altering business models of adjacent businesses.
- Superior execution capabilities to bring innovations to market and scale them faster than anyone else.

Phase 5
Reform: How will the relationship between government, businesses, and individuals change?

In most geographies, the basic structure of the healthcare system has only marginally changed since World War II. The COVID-19 crisis highlights the need to determine how to meet a rapid surge in patient volume while managing seamlessly across in-person and virtual care. Public health approaches, in an interconnected and highly mobile world, must rethink the speed and global coordination with which they need to react. Policies on critical healthcare infrastructure, strategic reserves of key supplies, and contingency production facilities for critical medical equipment will need to be addressed.

Coming out of this crisis, the relationship between government, businesses, and individuals will be reshuffled in a fundamental way—especially in the context of health and wellness. Healthcare leaders need to anticipate changes to policies and regulations as society seeks to avoid, mitigate, and preempt a future health crisis.

Given this context, governments may pursue several actions to prepare for a future crisis:

PHASE 5: REFORM

How will the relationship between government, businesses, and individuals change?

There are several actions many governments may pursue to be prepared for a future crisis

A handful of reforms have already been enacted that may result in longer-term structural changes to the industry:

- Allowing the permanent, direct hire of National Disaster Medical System healthcare
- Limiting out-of-pocket cost-sharing for COVID-19 testing
- Adjusting CMS regulations to permit use of telehealth

Acceptance of new monitoring techniques. The variation in responses and outcomes across countries, combined with the significant humanitarian impact from COVID-19, will likely make monitoring techniques, such as digital applications specifically for pandemics and temperature taking, more accepted and ubiquitous to prevent and mitigate future pandemics.

Data interoperability as a renewed priority. Similar to greater acceptance of new monitoring techniques, a reinvigorated focus will be placed on data interoperability and reduced latency that improves responsiveness for drug and vaccine development, and the creation and rollout of treatment protocols.

Strategic reserve of supplies and agile manufacturing.[11] The shortage of PPE during the COVID-19 crisis likely will lead to new efforts to build large reserves of necessary supplies for a variety of pandemic scenarios as well as regulation and incentives to enable manufacturing to quickly ramp up production.

Emergency medical force.[12] Shortages of clinicians could result in governments creating something akin to a "Medical National Guard" that can help fill critical labor shortages in times of extreme need; widespread basic training of nonclinical staff and lay people could free clinicians to perform more advanced procedures.

Multilayer coordination in response efforts. The challenges coordinating across multiple layers of government (local, state/provincial, federal, global health) will cause governments to rethink how crises are managed to enable faster, more consistent decision making. Governments may need to establish protocols to pool clinical resources in times of crisis.

Standardization of currently fragmented medical systems. Difficulty in executing a consistent response across health systems of varying sizes and capabilities may result in a push to standardize health systems on multiple fronts (for example, clinician licensing, data sharing, procedure cost and reimbursement).

Heightened expectations of financial protection. Emergency government action to shield patients from COVID-19-related costs may spark broader healthcare reform to make healthcare more affordable in countries such as the United States. Providers will similarly expect new protections to reduce focus on liquidity and solvency in times of crises. In addition to these important but relatively modest reforms, the likelihood of transformational government reform of the healthcare system has become more probable. For many years, a broad range of stakeholders has been paying into a system that, while inefficient and expensive, was presumed to be able to deliver top quality care. When the immediate COVID-19 crisis has resolved itself, providers may face a public discouraged with the healthcare system (see Sidebar 2, below).

Furthermore, it is likely, if not certain, that an economic downturn will result from the physical distancing measures and shutdown of economies that have been deployed to contain the spread of COVID-19. Over the last 50 years in the United States, nearly every economic downturn was subsequently followed by significant regulatory change in the healthcare industry. For example, the dot-com bust of 2001 was quickly followed by the enactment of Medicare Advantage. The 2008–09 Great Recession was followed by the Affordable Care Act in 2010. This combination of dissatisfaction with the healthcare system's ability to respond in the current crisis and an economic downturn could be leading indicators of significant reform to come.

As we consider the scale of change that COVID-19 has engendered—and will continue to create in the weeks and months ahead—we feel compelled to reflect not just on a health crisis of immense proportion but also on an imminent restructuring of the healthcare industry in the future. The five stages described here offer healthcare leaders a path to begin navigating to the next normal—a normal that looks unlike any in the years preceding COVID-19, the pandemic that changed everything.

Sidebar 2

Long-term reforms may result from COVID-19.

While current US government action is focused on short-term measures to deal with the immediate COVID-19 crisis, **a handful of reforms have already been enacted that may result in longer-term structural changes to the industry**:

- **Allowing the permanent, direct hire of National Disaster Medical System healthcare professionals**, permanently increasing the available healthcare workforce.
- **Limiting out-of-pocket cost sharing for COVID-19 testing**; it is reasonable to expect, following the pandemic, that more effort will be made to limit cost sharing for contagious disease testing so we can identify potential pandemics early.
- **Adjusting Center for Medicare and Medicaid Services regulations to permit use of telehealth** to provide a wide range of services to Medicare FFS and get reimbursed at face-to-face rate. This is an area where both public uptake/acceptance/future demand and lower risk associated with physical interaction may lead regulators to consider making telehealth reimbursement permanent.

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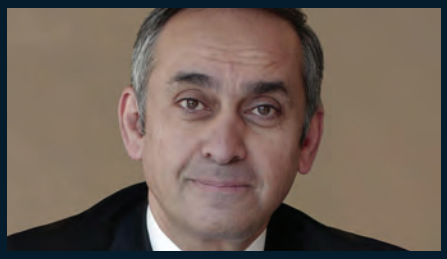
SELECTED QUOTES FROM 2020

Reimagining healthcare in a COVID-19 era

Our healthcare system, like all healthcare systems, is designed as a "sickness service" rather than a "health and well-being service." The value proposition has been treating the sick. But the value proposition has to change, in fact, to preventing illness.



Lord Ara Darzi, KBE, MD
Paul Hamlyn Chair of Surgery,
Imperial College London

Shobana Kamineni
Executive Vice Chairperson,
Apollo Hospitals Enterprise Limited

The healthcare model can never be just virtual. It has to be anchored in the omni, the duality of physical and virtual that is this new age of health. When people ask me about the healthcare system of the future, I tell them it's never going to be anything unless it's anchored by the reality of the care you want to give to a patient.

Sometimes, as a doctor, you just have to examine a patient. Sometimes you need a reading or you need a blood test. But having a distributed infrastructure so you can interact with a patient, on top of remote monitoring and remote care, creates a whole different way of delivering healthcare.

Alan Lotvin, MD
Executive Vice President and President,
CVS Caremark

‘And now win the peace’: Ten lessons from history for the next normal

Shubham Singhal and Kevin Sneader

We are not at the end of the COVID-19 crisis, and maybe not even at the end of the beginning. But it is not too soon to build the strategies that will foster broad-based growth.

Two months after Germany surrendered, Britain held a general election. “And now win the peace,” exhorted the Labour Party, which promised massive social and economic change. The words struck a chord and Labour won big, sweeping Winston Churchill out of leadership.

Western Europe, Japan, and the United States did win the peace, enjoying more than two decades of broad-based economic growth that not only raised living standards and brought a better quality of life to their citizens but also helped to fuel global growth (Exhibits 1 and 2).

As the world considers how to navigate the post-COVID-19 future, the only certainty is that it will be different, or as we wrote in a prior article, “The future is not what it used to be: Thoughts on the shape of the next normal.”[1] But then, the future is always different, and always uncertain. The past is less so. Considering the lessons of history can help business leaders and policy makers figure out how to manage the challenging years ahead.

With that in mind, we looked specifically at the post–World War II era—a time when much of the world rose, quite literally, from the ashes. Not everywhere, of course, or to the same degree. Indeed, many countries would not want to revisit the decades after the war. Eastern Europe went behind the iron curtain; China suffered civil war, starvation, and the Cultural Revolution; much of Africa, Latin America, and the Middle East was unstable and wracked by conflict (although there were bright spots in these regions, too). So the following discussion draws chiefly on the experience of Japan, the United States, and Western Europe, which were conspicuous in their success. Technologies developed for war were adapted for peace-time use. Poverty, government debt, and inequality fell, while living standards improved and prosperity spread broadly.

In this article, we address two questions. First, what accounted for this record of inclusive growth, sustained for more than two decades? And second, while acknowledging that the world has changed enormously since 1945, are there ideas and actions taken then that can inspire us now?

The lessons of the past: Factors behind postwar recovery

When everybody else thinks it’s the end, we have to begin.
—Konrad Adenauer, chancellor of West Germany, 1949–63

The French have a phrase for it—“les trente glorieuses,” or the “glorious 30”—the period from 1945 to 1975 in which faster growth, greater productivity, higher wages, and generous social benefits transformed the country. The German term is “wirtschaftswunder,” or economic miracle, and the Italian is similar, “il miracolo economico.” In 1964, a rebuilt Japan successfully hosted the Tokyo Olympics.

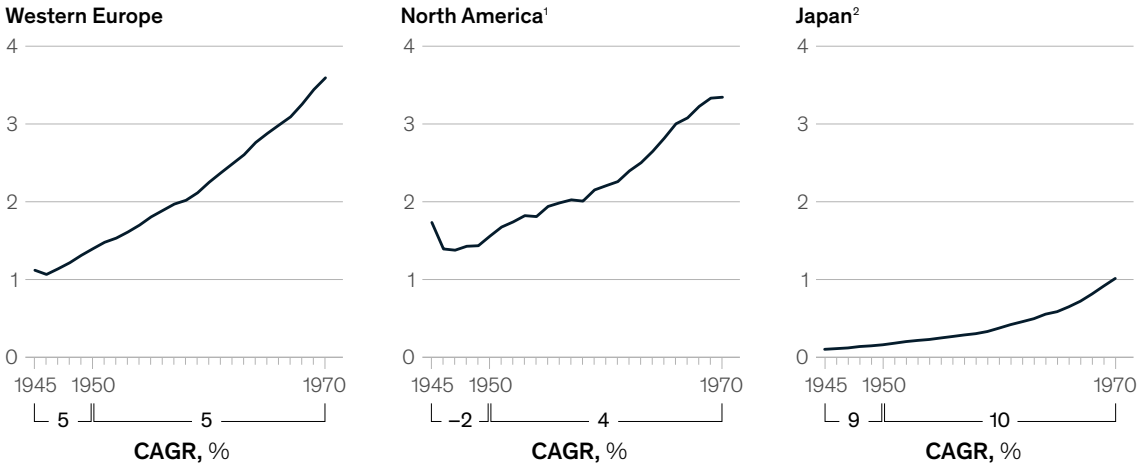
The COVID-19 pandemic is not nearly on the scale of the tragedy of World War II, in which

an estimated 60 million people died and many cities were leveled. But COVID-19 has killed more than 600,000 people so far and shut down huge swathes of the global economy, with all the suffering that implies. By any standard, that constitutes a global catastrophe. So it may be useful to think about how Western Europe, Japan, and the United States recovered from a previous catastrophe. We think the following factors were particularly relevant.

Exhibit 1

Economic growth was strong from 1945 to 1970 in Western Europe, North America, and Japan.

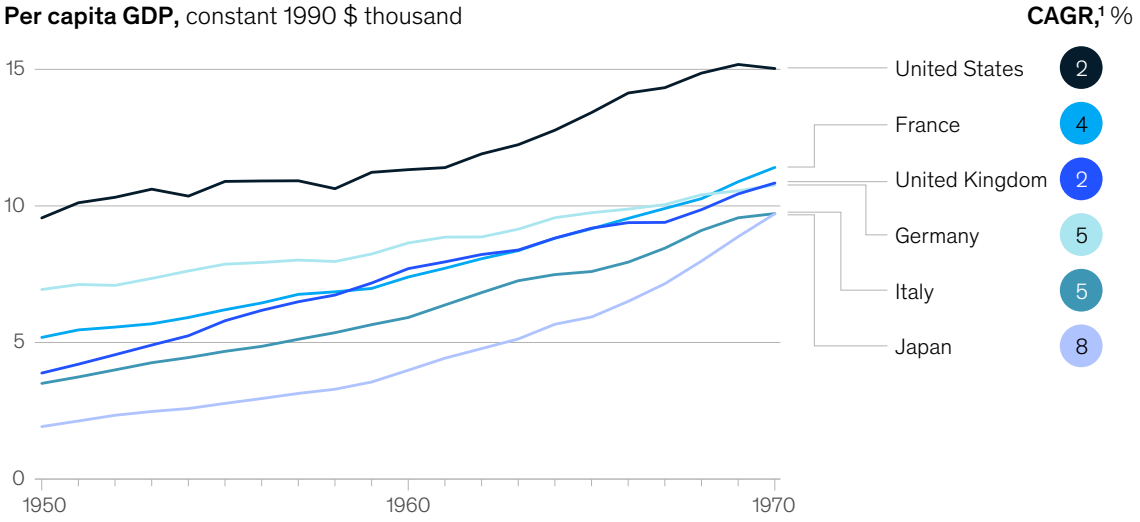
GDP, constant 1990 $ trillion



[1] Canada and United States.
[2] Data unavailable for 1941–49, and so GDP was estimated using 1940–50 compound annual growth rate (CAGR).
Source: Maddison Project Database (2010), University of Groningen

Exhibit 2

Per capita GDP growth also was strong from 1950 to 1970.



[1] Compound annual growth rate.
Source: Maddison Project Database (2010), University of Groningen

Considering the lessons of history can help business leaders and policy makers figure out how to manage the challenging years ahead.

There was a sense of purpose around rebuilding lives and livelihoods

In June 1941, when Britain was near its wartime nadir, a British civil servant named William Beveridge was tasked with writing a report on the country's social-insurance programs. In November 1942, he produced something much more substantive. What became known as the Beveridge Report made the case for eradicating what Beveridge called five "giant evils": want, disease, ignorance, squalor, and idleness. The report had both a sense of urgency, and of possibility: "Now, when the war is abolishing landmarks of every kind, is the opportunity for using experience in a clear field. A revolutionary moment in the world's history is a time for revolutions, not for patching." The report argued for "cooperation between the State and the individual" but without stifling "incentive, opportunity, responsibility." These principles, adapted to local conditions, to a large degree describe the basis for the development of many of the postwar European welfare states.

The United States also played an important role. It suffered little physical destruction during the war and endured nothing like the postwar distress of Japan and Europe, where even several years after the war, tens of millions of people remained hungry and cold. The United States recognized that, for both humanitarian and geopolitical reasons, it needed to help. The most famous effort to meet these pressing needs was the Marshall Plan. From 1948 to 1952, the United States gave $13 billion in aid to 16 European countries (equivalent to $126 billion today) to get European economies back on their feet. Assistance went to everything from funding the French aircraft industry (to help buy propellers) to fighting tuberculosis to bringing European specialists to the United States to learn new industrial and agricultural techniques to financing Portugal's cod-fishing fleet. By 1952, when funding ended, each participating country's economy had surpassed prewar levels. Japan also received considerable aid and other support that fostered the structural adjustments it needed to transition from a war-focused to a peacetime economy. All told, US economic aid totaled $44 billion by 1954—the equivalent of $420 billion today.

No two countries are alike, and there were no magic multinational bullets that solved these countries' problems. What can be said, however, is that after World War II, there was a broad sense that it was time to do better for the millions of people who had suffered so terribly and whose leaders had previously failed them so badly.

Global institutions created the structures to promote technology sharing, economic growth, and political stability

It's a veritable alphabet soup: EAEC, ECSC, GATT, IMF, NATO, UN.[2] All of these were created in the years after the war in an effort to forge a more constructive economic and international order. The creation of GATT, for example, created a framework that liberalized international trade. As trade barriers fell, technological transfer between industries and countries rose. Global foreign direct investment grew eight times from 1950 to 1970. At the same time, the formation of NATO in 1949 created the geopolitical security that allowed Western European governments breathing room to reconstruct their countries.

When future historians look back on the first two decades of the 21st century, one of the themes they will emphasize will be globalization.

The creation of these international institutions allowed individual economies and businesses to get on with the job of deploying the capital and technology available to rebuild their countries—with far-reaching effects. The ECSC, for example, eventually evolved into what is now the European Union.

There was sustained investment in human and physical infrastructure
Governments took a long-term view, with effective planning teams that implemented multiyear initiatives in areas such as education, energy, infrastructure, R&D, telecom, and transportation. These were sustained through changes in political leadership and included the expertise of scientists and economists.

War-torn countries needed to fix their roads and replace their bridges, and they did, often remarkably quickly. France restored more than 80 percent of its coal capacity by the end of 1945 and doubled its steel capacity between 1947 and 1950. The US interstate highway system, begun in 1956, contributed to higher productivity and lower transportation costs. "We needed them [highways] for the economy," noted one of the system's architects, "Not just as a public-works measure, but for future growth."

The infrastructure efforts went well beyond bricks and mortar. Japan introduced reforms that both demilitarized and broadened education. In the United States, the GI Bill more than doubled the number of college graduates between 1940 and 1950. Britain mandated free secondary education, and France extended how long children stayed in school. What this translated into isn't just better-educated people—a good in and of itself—but a pool of workers capable of excelling in the fast-changing industrial economy.

Business adapted
Once the basics were established, such as stable currencies, relatively open trade, antitrust laws, workforce training, and land and labor reforms, business was able to get back to business. Public and private investment had no difficulty finding commercial applications, and the private sector absorbed it productively. In 1948, when West Germany scrapped price controls and created the Deutsche Mark, industrial production immediately responded, rising 50 percent.

Wartime economic policy also played a role, as it forced selected companies to scale up, make new products, and innovate faster than they would have otherwise. For example, Pfizer was a citric-acid manufacturer when the US government asked it to participate in the production of penicillin. After the war, the company adapted what it had learned to create an improved, deep-tank fermentation production process that enabled it to create new antibiotics and become a major pharmaceutical player. Wartime investments in areas like nuclear energy, rocketry, synthetic rubber, and automotive engineering all had positive spillover effects during peacetime.

With reduced postwar government controls, business also consolidated, creating larger units that were able to make sizeable investments in innovative technologies; the chemicals, pharmaceuticals, and high-tech industries are notable examples of this effect. At the same time,

a stable political and social environment, along with flexible working conditions, also encouraged new business formation. With investment coming in, and liberalized trade rules fostering the transfer and expansion of technology, the stage was set for sustained growth with broad social benefits, as workers moved from lower-paid sectors, such as agriculture, into more productive and higher-paid ones.

Drawing the right conclusions: The limits of the postwar analogy

It is not often that nations learn from the past, even rarer that they draw the correct conclusions from it.
—Henry Kissinger, *A World Restored*

There was no postwar miracle; the actions that forged recovery were all human made. Good policies, political commitment, and hard work made it happen. The same will have to be the case in recovering from the COVID-19 crisis. Not the same policies, of course—the conditions are too different. Trade flows are much bigger, international travel is routine, information is transferred seamlessly, and the use of digital tools is only going to get much greater. But there are broad themes that we believe are pertinent.

In the postwar era, international institutions (Bretton Woods, GATT, Marshall Plan[3]), domestic government policies (education, training, infrastructure, currency reform), and private-sector actions (innovation, technology partnerships, structural change) worked together to create the conditions for broad-based growth (Exhibits 3, 4, and 5).

And in fact, the same factors were also critical in more recent success stories, such as Estonia, Israel, Singapore, South Korea, and Taiwan, all of which emerged from difficult circumstances to create advanced economies and prosperous societies. In the postpandemic world, there needs to be a similar cohesiveness of action.

Adapting the lessons of the postwar era to the coming post-COVID-19 era

Part of being optimistic is keeping one's head pointed toward the sun, one's feet moving forward. There were many dark moments when my faith in humanity was sorely tested, but I would not and could not give myself up to despair. That way lays defeat and death.
—Nelson Mandela, *Long Walk to Freedom: The Autobiography of Nelson Mandela*

To win the post-COVID-19 peace, today's policy makers and business leaders need to channel the optimism and imagination of their postwar equivalents—but differently. In many ways, we live in the world created then. While keeping what is worthwhile, it is time to do better. Here we suggest ten ways to win the peace.

Reform and reshape globalization
When future historians look back on the first two decades of the 21st century, one of the themes they will emphasize will be globalization—the world's growing connectedness, in both cultural and economic terms. Globalization is a long-term phenomenon: exports of goods as a share of global GDP doubled from 4 percent in 1945 to 9 percent in 1970 and doubled again in the 1980s. By 2017, the cross-border trade in goods and services had reached 28 percent of global GDP.[4] In addition, the continued emergence of China, India, and other economies, plus the rise of seamless communications, in the form of the mobile phone and the internet, have quickened the pace and deepened the effects of globalization. On the whole, this has been a very good thing: the spread of globalization has helped lift billions of people out of poverty. But there have been losers, in both environmental and social terms.

Global problems need global attention, something the architects of the postwar world recognized. Today, we need to do the same, reshaping globalization and its institutions to meet modern needs. The good news is that doing so may be a matter of

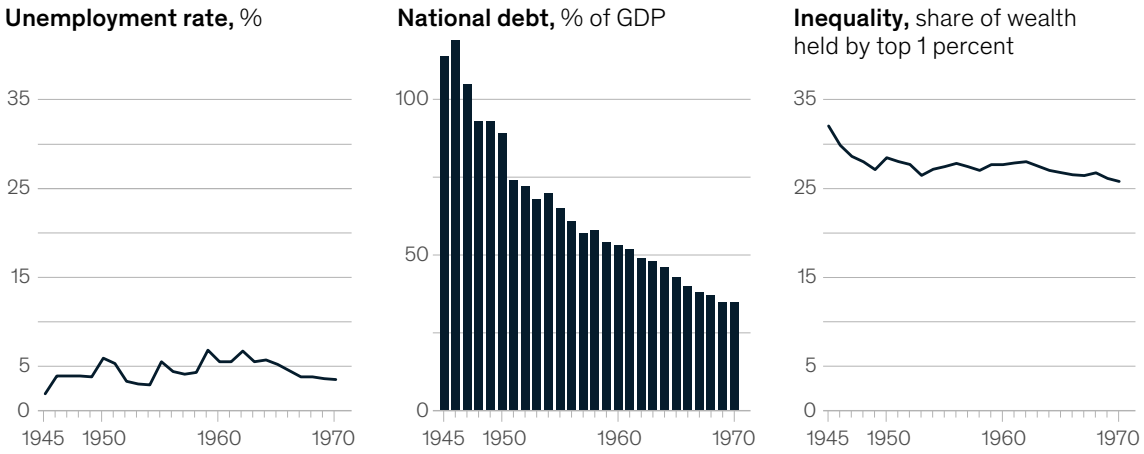
pushing on an open door. A 2019 poll by the World Economic Forum, with respondents from 29 countries, for example, found that at least 72 percent in all regions agreed that "all countries can improve at the same time"; and majorities in all regions (and 76 percent overall) believe that it is important for countries to work together. Here are some ways to address some of the discontents associated with globalization.

Create trade policies that take into account how globalization is changing

One change is that trade in services is now growing much faster than trade in goods—60 percent faster overall, and two to three times as fast in specific sectors, such as information technology. In fact, depending on how the figures are calculated, trade in services may already be more valuable than that in goods.[5] Digital flows exert a larger impact

Exhibit 3

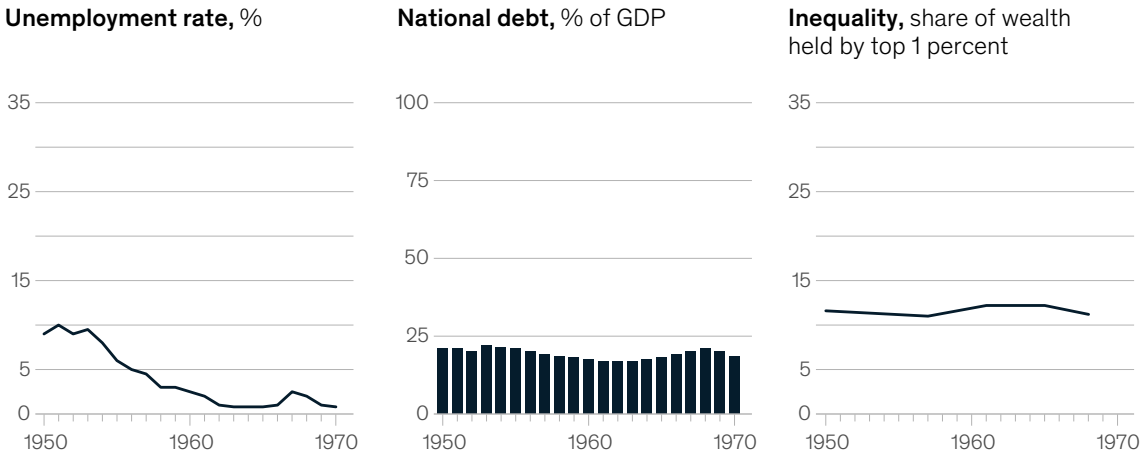
In the United States, employment remained robust after 1945, while national debt and inequality declined.



Source: Federal Reserve Bank of St. Louis

Exhibit 4

German unemployment dropped after 1950, while debt and inequality also declined.



Source: German Federal Bank; German Ministry of Finance

on GDP growth than the trade in goods, and even the trade in goods often has a digital component.[6] Another departure from the 20th century is that labor-cost arbitrage is less important, accounting for only 18 percent of the trade in goods from poorer to richer countries. A third is that more trade is happening regionally, particularly within Europe and Asia; the COVID-19 crisis could well accelerate this development, as many companies will want to bring critical parts of their supply chain closer to home. Trade disputes have been a constant feature of the international environment, and they still are. But they have generally been related to goods. Recognizing that intellectual property- and tax-related issues will likely be more complex with services and digital technologies than with goods, it makes sense to get ahead of the action before these also become mired in endless conflict.

Global institutions need to be modernized so that these (and other technologies and trends) can become the basis for inclusive growth. International agreements that enable a balanced and safe flow of data and services, including standards for taxes on digital products and services, intellectual-property protection, data privacy, and security, all need to be developed.

Promote the diffusion of technology

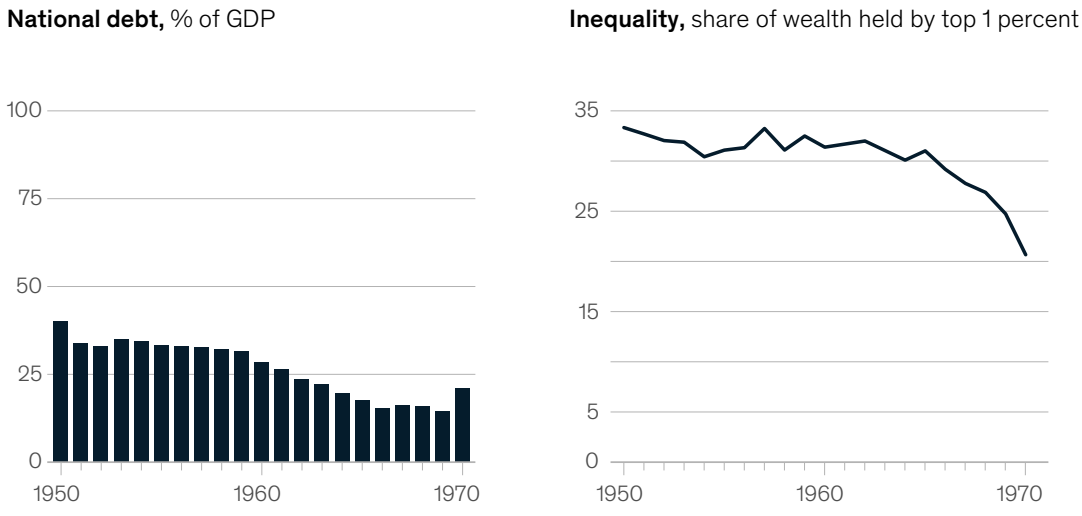
The McKinsey Global Institute (MGI) has identified a dozen technologies[7,8] that could create $33 trillion a year in value by 2025. For technology to continue to advance and thrive, there must be a global framework within which companies can operate; without it, regulation will be fragmented, which raises costs and irritation to no good effect. Again, the COVID-19 era is showing the possibilities, with new and nimble partnerships producing equipment and working together to find and develop a vaccine.

Renew the role and effectiveness of the public sector

In many countries, there is rising distrust of established institutions, fueled by a sense that the young, minorities, and low- and middle-income earners are losing out.[9] There is widening economic inequality within many countries and a sense that the next generation is growing up in a more dangerous, less financially secure, and generally unsettled age.[10] The COVID-19 crisis has only

Exhibit 5

France saw significant improvements in levels of both debt and inequality after 1950.



Source: International Monetary Fund

exacerbated these concerns. To increase trust, governments need to show that they are serious about fostering economic inclusion and making technology work for everyone. And they need to do so effectively; only 10 percent of those surveyed in 2019 believed government executed its duties competently; more than half characterized government as unfair and often corrupt. Just as in business, execution matters.

Modernize social policies

The reality is that many countries offer more insecure work, higher housing costs, and greater economic polarization. Yet social policies related to work, unemployment, and income support have not changed nearly as much as the circumstances around them. That said, some initiatives are worth evaluating to see how well they work (or not). For instance, some governments are legislating new labor laws to address the needs of temporary, gig, and other unconventional working patterns. Australia, France, Georgia, and Massachusetts are considering or have passed legislation that extends unemployment insurance to independent contractors. Others allow recipients to continue to receive benefits if they are working part-time or starting a business. Governments from Germany to Nebraska to Minneapolis are considering changes to zoning laws to encourage the construction of denser and cheaper housing. Others are looking at restricting rent increases. Making benefits portable—that is, attached to individuals, rather than workplaces—is another option. For example, New York State's Black Car Fund provides workers' compensation, paid for by a fare surcharge, for livery and rideshare drivers. Lifelong training accounts, funded by business, government, and individuals, could encourage workers to invest in themselves, and also boost productivity. These are just some of the ideas that countries and states are experimenting with; we cite them to illustrate that there are many different options to learn from. The role of government is to identify the best ideas, test them, and then expand (or discard) them.

Institute measures to increase productivity

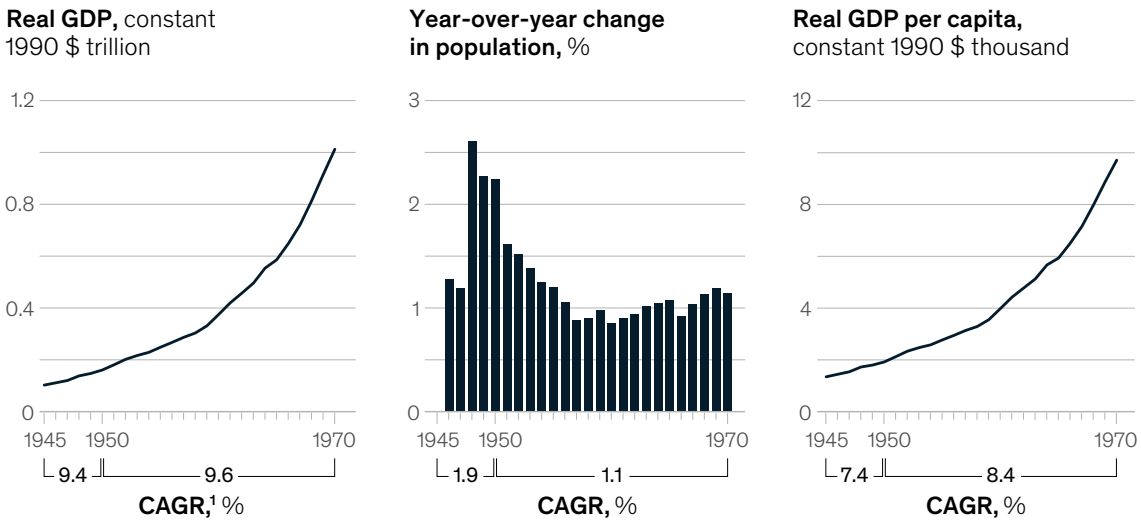
There can be no inclusive growth without economic growth, which means productivity has to grow, too.[11] Productivity was the foundation of the economic success of the postwar era (Exhibit 6). Led by rising business investment and technology diffusion, Germany, Japan, and other war-torn economies built world-class industries in sectors ranging from cars and luxury goods to steel and energy. It is still true that only through greater productivity do wages and living standards improve, particularly in markets where population growth ranges from little to none.

In many advanced economies, however, productivity growth has slowed[12]—to 0.5 percent in 2010 to 2014,[13] down from 2.4 percent a decade earlier. We recognize that economists discuss whether productivity gains are well measured and why digital technology does not translate in expected productivity gains. Nevertheless, to do better, there are proven "catch-up" approaches,[14] such as removing barriers to competition in services, cutting red tape that impedes business formation (and dissolution), and allowing more effective reallocation of human and financial resources as new technologies emerge and productivity gains shift across industries. The productivity of public and regulated sectors, such as healthcare, has been notably slow to improve.

The other way to boost productivity is to "push the frontier" of innovation and technology. This is where sustained, long-term growth will come from. It will not come from industry as we knew it in the 20th century but from Industry 4.0, meaning the use of advanced technologies such as artificial intelligence (AI), robotics, genetics, biomedicine, and the Internet of Things. The latter, for example, has a wide range of uses, from detecting production errors early to boosting crop yields by measuring the moisture of fields to monitoring the health status of patients.[15] Fulfilling the potential of these technologies, however, requires supportive

Exhibit 6

Strong productivity contributed to Japan's postwar growth, even when population growth slowed after 1960.



[1]Compound annual growth rate.
Source: Maddison Project Database (2010), University of Groningen

regulation and a well-prepared workforce. Otherwise, the danger is that those who are displaced by technological change will end up in lower-paid or casual work—the opposite of inclusive growth.

Build digital infrastructure

After the war, countries built physical assets, such as Japan's high-speed railways or deepwater ports in Europe and the United States, to accelerate their economies. In the 21st century, digital capabilities are likely to be the most important infrastructure investment. In four sectors alone—mobility, healthcare, manufacturing, and retail—McKinsey has identified use cases that could boost global GDP by as much as $2 trillion by 2030.[16]

Beyond the implications for industry, connectivity also has ramifications for equity and society—something that has been proved emphatically true during the pandemic, in which the use of online education and telemedicine has skyrocketed. However, even in advanced economies, not everyone has access to high-speed internet, and those without digital connectivity will have less access to economic opportunity. Governments can play a role in expanding access, with the goal of universal connectivity. For example, they can illustrate the possibilities in their own operations; encourage its use in the development of smart cities; and establish a regulatory framework that ensures privacy, security, ownership, and interoperability.

Invest in reskilling

Industry 4.0 and the knowledge economy could bring significant economic and social benefits. McKinsey has estimated that AI adoption alone could raise global GDP $13 trillion by 2030—but only if the right talent is available.[17] The change could be wrenching. By 2030, according to MGI, as many as 375 million workers—or roughly 14 percent of the global workforce—may need to switch occupational categories as digitization, automation, and advances in AI disrupt the world of work.[18] One out of 11 jobs in 2030 could be in occupations that didn't exist in 2015.[19] There will be more jobs that require tertiary education and fewer available to those with only a high-school education or less.

The case for change is clear. But educational models have not changed much over

COVID-19-riddled 2020 is not war-wracked 1950. But history can still provide useful lessons.

the past century, and in the countries that are part of the Organisation for Economic Co-operation and Development (OECD), government spending on training has actually fallen. The public sector will need to devise new unemployment income and worker-transition support programs and work more closely with the private sector and organized labor to develop effective ways to build capabilities.[20] The GI Bill and other postwar education reforms helped to create a workforce capable of excelling in a sophisticated industrial economy. Now the need is to work with business to invest in a workforce that can do the same in Industry 4.0. One priority: compile the data—a problem cannot be fixed if it is undefined. The European Union is creating a tool that can be used by all its members to consolidate information on what skills are in demand where; and Denmark is compiling detailed information on the skills required for hundreds of occupations. Another area to look at is extending educational support into adulthood through the creation of lifelong learning programs, such as the individual training accounts established in France and Singapore.

Expand the labor force

In the postwar era, population growth was an important factor in the period's economic and productivity success. In today's context of aging populations (and in many countries—notably Japan, but others, too—absolute population decline), there is no new baby boom in sight, and women can only enter the workforce in big numbers once. In this context, how could the labor force be expanded? One way is through better health. According to new research from MGI,[21] poor health reduces global GDP by 15 percent. Investment in health, MGI suggests, is also sound economic policy, with a return of $2 to $4 for every $1 in spending on known health improvements.

In emerging economies, poor health is a drag on productivity. In advanced economies, the benefit is subtler: the possibility of creating a longer, healthier middle age. As MGI put it, 65 would be the new 55. The value of improved health to the happiness of individuals is, of course, incalculable. In strictly economic terms, a healthier late middle age would allow more people to work longer and more productively. In the United States, where population growth is slowing, delayed retirement could add 675 million work hours per week. We understand that this would require changes to retirement laws and pension systems, and that this could be contentious (to put it mildly). Strictly in economic terms, however, increasing labor-force participation in this way could bring big dividends.

Reimagine and reinvigorate the private-sector social contract

As individuals assume more responsibility (and the state less) for their careers, benefits, and retirement, the role of the workplace becomes more important. In January 2020, the Edelman Trust Barometer found that more than half (56 percent) of respondents in 28 markets (and majorities in 22 of them) agreed that "capitalism as it exists today does more harm than good in the world." Almost three-quarters said CEOs should take the lead on change, rather than waiting for government. Pressure on businesses to serve their communities in variegated ways will only build, given the substantial aid governments have provided to the private sector to cope with the COVID-19 crisis—double the scale of that related to the 2008 financial crisis.[22] Just as business stepped up after the war, so must it do now, but in different ways.

Embrace 'stakeholder capitalism'

The term encompasses the idea that companies consider the interests of their employees, customers, suppliers, and communities, as well as shareholders, in their decision making. In a general sense, few CEOs would disagree (and even fewer publicly). But the good intentions embodied in this phrase must be accompanied by action. Again, there are many examples, such as Walmart's education and training programs and global software company SAP's extensive reskilling initiatives.[23] Others, such as Unilever and Bank of America,[24] have voluntarily raised wages for lower-paid workers; in high-cost Silicon Valley, a few companies are building housing for some of their workers and also funding affordable housing in their communities.[25] But it is fair to say that business can do more.

The research is limited, but there is evidence to suggest[26] that companies that execute the "triple bottom line" well—meaning economic, social, and governance programs—create positive financial value through greater efficiency, innovation, risk management, and access to markets. In the future, regardless of the bottom-line effects, actively participating along all three dimensions may be seen as part of the social license that business needs to operate. This is a curve that the best companies will want to get ahead of.

Invest in employees

When it comes to the social contract between companies and communities, reskilling—that is, equipping existing workers to do higher-level jobs—would appear to be an area where the role of business is straightforward. But the record is patchy. In a 2017 survey of executives, only 16 percent said they felt "very prepared" to address potential skills gaps. About twice as many said they were "somewhat" or "very" unprepared.[27] While training budgets have risen over the past few years, that is not the same thing as reskilling; much of the former goes to leadership conferences and showing new workers the ropes.

Reskilling is essential if businesses are to deliver on the promise of Industry 4.0—and if workers are to benefit from it. Amazon, for example, is spending $700 million to upskill as much as a third of its workforce, or 100,000 people. One program trains non-technical staff to transition them into software-engineering careers; in another, warehouse workers can earn an A+ certification that qualifies them for IT support positions.

Altruism may be an element in this and similar efforts, but there are also economic benefits: it can be much more profitable to reskill a valued employee than to find a new one. And as labor forces grow more slowly, or even shrink, a company's existing pool of workers can be a source of new talent. As one executive told *The Wall Street Journal*, "Executives have this idea that 'as my people become obsolete, I'll just hire new people.' Well, they won't be there."

Reskilling can be expensive, particularly for smaller companies; and it's true that sometimes employees take their new skills elsewhere. One approach is to work with other institutions—community colleges, government agencies, even companies in the same sector—to spread the costs, as winemakers have done in Washington state. And it's worth remembering that while reskilling carries cost—so does having a less adept and discouraged workforce.

Deploy productivity-boosting technology

During the COVID-19 crisis, companies have used technology in new ways to cope, often with a speed and success that surprised them. For example, retail stores cut down on the number of in-store cashiers but added more people to deal with online-enabled curbside pickup and delivery. On the whole, however, there are big gaps between what is being done and what could be done. In 2017, MGI found that on average,[28] industries were less than 40 percent digitized; China, Europe, and the United States, other research found in 2019, had tapped into only 20 percent of their digital potential.[29] That matters, because just as technological

diffusion powered postwar growth, digital capabilities will likely be a major factor in fueling post-COVID-19 growth.

An analysis of the effect of digital on productivity is compelling—70 percent of those identified as "digital superstars" achieve higher-than-average productivity, and the most digitized sectors are also the ones that are the most productive.[30] Even so, only a quarter of global sales and supply-chain operations were digitized in 2019, less than a third of operations volume was digitally automated, and in 2018, only 12 percent of companies had invested in AI in domains where the business case to do so was strong. There is particular potential in supply-chain digitization, where the process has barely started.[31] Some companies are getting it right, by closely tying their digital and corporate strategies and creating a healthy organizational culture.[32] But not nearly enough are doing so, meaning that the economy is not benefiting from these proven productivity technologies.

The good old days, in many ways, weren't all that good. People all over the world today are richer and healthier, with more access to information, culture, and education. From 2004 to 2018, more than 300 million people in India alone have lifted themselves out of poverty. Global life expectancy in 2016 was 72 years—up from 46 years in 1950 and higher than in any single country then. In Africa, life expectancy increased by almost a decade from 2000 to 2016 (to 62.1 years).

In one sense, however, the 1950s and '60s do look pretty good, as many economies enjoyed sustained and inclusive growth. COVID-19-riddled 2020 is not war-wracked 1950. But history can still provide useful lessons. One is the need for international institutions and the public and private sectors to pull in the same direction. Another is the importance of health, education, and training.

There are also lessons in what not to do. Countries that cut themselves off from global flows of technology, trade, and information generally underperform. Controls on capital, wages, and prices suppress growth. Nationalizing industry is a productivity dud (with rare exceptions). Even with the right goals and the best of intentions, making the wrong choices can hurt productivity—as happened in postwar Britain—and thus make it less likely that the desired outcomes occur.

Imagination, leadership, and a dash of inspiration will be required to figure out the right policies for the 21st century. During the COVID-19 crisis, there have been many examples from the public, private, and social sectors to prove that these qualities are alive and well. What is needed now is the commitment to make the changes and investments that will create a future of broad prosperity.

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Reimagining the postpandemic economic future

Wan-Lae Cheng, André Dua, Zoe Jacobs, Mike Kerlin, Jonathan Law, Ben Safran, Jörg Schubert, Chun Ying Wang, Qi Xu, and Ammanuel Zegeye

As the COVID-19 crisis continues to devastate US lives and livelihoods, policy makers are challenged to emerge from it in a way that lays a foundation for a strong, healthy economy in the long run.

The scale of the economic challenge created by the COVID-19 pandemic has not been faced in the United States in nearly a century. The pandemic has not only exposed weaknesses in US health systems but also, just as quickly, exposed economic vulnerabilities. The impacts across employment and productivity are at levels not seen since the Great Depression.

To date, crisis-recovery planning has focused primarily on delivering the historically unprecedented levels of relief that are providing lifelines for individuals and businesses trying to remain solvent. It is also addressing the complex choreography required to reopen economies safely while minimizing resurgence of the virus—a challenge underscored by the recent rollback of or pause on reopen plans in many states.

Now is the time, however, for governments to turn their attention to reimagining a stronger economic future by very deliberately addressing the vulnerabilities the crisis has exposed. National monetary, fiscal, and other policy decisions will provide large-scale boosts to aggregate supply and demand and will help create the conditions for renewed economic growth. Yet it is state and local leaders, together with their business and civic communities, who will shape the speed and inclusivity of the recovery. The COVID-19 crisis is forcing states and localities to balance a surge in demand for government expenditures with unprecedented funding shortfalls. At the same time, it is requiring them to find ways to build and fund strategies and programs to deliver stronger, more equal, and more resilient economies.

Identifying where the COVID-19 crisis has caused the most economic damage

The first step toward reimagining a more resilient economic future is to understand how and where the pandemic has most damaged the US economy at the state and local levels. Our analysis suggests that the COVID-19 crisis has had the worst impact in the following six areas:

— *The most vulnerable have borne the brunt of the economic impacts.* The pandemic has attacked the economically vulnerable, much like it has attacked those with preexisting health vulnerabilities. The economically vulnerable portion of the population is the least able to withstand this disruption: 86 percent of the US jobs that are vulnerable to pay cuts, lost hours, and layoffs are held by workers earning less than $40,000 a year. People of color and less-educated workers disproportionately work in those occupations. In contrast, only 1 percent of jobs paying more than $70,000 and 13 percent of those paying between

$40,000 and $70,000 a year are vulnerable to layoffs, furloughs, and reduced hours. Additionally, 40 percent of the revenues of Black-owned businesses are generated in the five most vulnerable sectors, compared with 25 percent of the revenues of all US businesses.

McKinsey's late-March 2020 Consumer Insights Survey found that, nationally, 52 percent of Black workers and 57 percent of Hispanic workers say the COVID-19 pandemic is a major threat to their personal financial situations, compared with 44 percent of white respondents. While those living from paycheck to paycheck have turned to unemployment assistance and food stamps, US billionaires' wealth increased by $584 billion, or 20 percent, between mid-March and mid-June.

— *Many small businesses are on the brink of failure.* Small and medium-size enterprises (SMEs), particularly young SMEs, are the lifeblood of employment growth. In the United States, 78 percent of net employment growth between 2013 and 2018 was generated by companies less than five years old.[1] The COVID-19 crisis has put particular strain on this segment. SMEs have fewer cash reserves to maintain employee salaries when shocks occur and have more trouble navigating and accessing channels of aid. The median SME has 27 days of cash on hand, yet the crisis is now approaching the six-month mark in the United States.[2] Results published in June 2020 from a series of McKinsey surveys of small businesses indicate that, absent any intervention, 25 to 36 percent of the businesses were at risk of closing permanently because of disruption from the first four months of the pandemic.[3]

In addition, racial and ethnic minorities—who are already vulnerable, as previously described—own a quarter of the small businesses in the most affected small-business sectors but only around 15 percent in the less-affected sectors. As a contrast to the state of SMEs, tech-company stocks have soared, up almost 20 percent since the start of 2020 versus a less than 1 percent increase in the S&P 500 index over the same period. Of course, the real economy—as measured by jobs and GDP—has performed far worse than all of the major stock-market indexes.

— *Investment in innovation is at risk.* The pandemic presents new challenges to innovation ecosystems, since history suggests that venture-capital (VC) firms may be less likely to raise new funds and start-ups less likely to receive funding in such circumstances. In the Great Recession, the total amount of VC raised declined by almost 60 percent between 2008 and 2009. R&D funding could also be at risk: business R&D funding declined 3 percent during that recession. History also suggests that the timing is unfortunate, since countercyclical investments in innovation pay dividends. Some of today's most successful unicorns were founded in the aftermath of the Great Recession. Research on Organisation for Economic Co-operation and Development countries suggests that governments that are innovation leaders increase public R&D spending during recessions whereas innovation laggards cut back.[4]

The sectors of the US economy that have suffered the most during recent recessions are also the ones experiencing the greatest economic impacts from the COVID-19 crisis.

— *The crisis has again exposed regions with high concentrations of vulnerable sectors.* The sectors of the US economy that have suffered greater loss of employment and GDP, on average, over the past five recessions—accommodation and food service, retail, and manufacturing—are also the ones experiencing the greatest economic impacts from the COVID-19 crisis. The regions with the greatest exposure to those sectors are again experiencing the pains of procyclical exposure. For instance, Nevada's economy is 4.0 times more specialized in accommodation and food service than the overall US economy is, and Hawaii's and Florida's are 3.0 times and 1.5 times more specialized, respectively. The three states are among those with the highest unemployment rates.[5]

States with an average or lower concentration in vulnerable sectors, such as Maine and Utah, saw unemployment rates nearly 10 percent lower than the overall US rate. That underlines the importance of reimagining the economy in a way that can break such patterns. How can states and cities reimagine their least resilient and productive sectors while also diversifying into more resilient and productive sectors?

— *The depth and importance of the digital divide has been exposed.* Seemingly overnight, access to digital infrastructure became a basic requirement for doing business in the face of the pandemic. Yet the variations in access across communities are still stark—sometimes a more than 30-percentage-point difference in the rate of access between counties, even within the same state.

Around 24 million American households lack access to reliable, affordable, high-speed internet, and 80 percent of those households are in rural areas.[6] Suburban adults in the United States are 12 percent more likely than rural adults to own desktop or laptop computers, which are critical for remote learning and working from home. As technological innovation continues and accelerates, the expectation of digital access as the key means of doing business is only expected to continue.

— *The future role of megacities is in question.* Megacities (12 cities composing close to a quarter of the total US population) captured a disproportionate share of economic benefits in the two decades leading up to the COVID-19 crisis. Global connectivity and crowding in public spaces made them viral hot spots early in the pandemic. Many have adapted, closing off streets to allow outdoor dining and successfully pushing public norms around wearing face coverings and other physical-distancing behaviors. Nevertheless, the crisis has left US homes on the market for longer, with a greater increase—at 35 percent—in time on the market for urban areas, versus a 30 percent increase in suburban areas and a 25 percent increase in rural areas.

Even before the crisis hit, questions were being raised about the future of megacities. Some have pointed out that rapid and concentrated development in them has negative effects, including growing urban–rural inequality and a lack of affordability for workers who are not benefiting from the cities' economic growth. A talent-attraction scorecard for 2019 from labor-market-analytics company Emsi reported that eight of the ten most populous US counties were not home to superstar cities,[7] suggesting that workers were moving to smaller high-growth hubs or other niche cities in which housing and costs of living are more affordable.[8] Still, megacities continue to serve as major centers for foreign immigration and gateways to the American dream. In the wake of the pandemic, will cities continue as productive engines of opportunity? And if so, which cities will be best positioned to capture those benefits?[9]

The COVID-19 crisis has exacerbated existing divides, cut into the productive potential of the most vulnerable segments of the working population, slowed the pace of productivity enhancements and limited the diffusion of their benefits, highlighted constraints in provision of essential digital infrastructure, and exposed opportunities of the future as open questions. The stakes are high for state and local economic leaders to get it right as they reimagine the economy. That imperative is underlined by the wide disparity in recovery rates that states attained following the Great Recession, which left top-quintile-performing states with roughly 30 percent more GDP than bottom-quintile performers after a decade of recovery (Exhibit).

Laying foundations for a reimagined economy

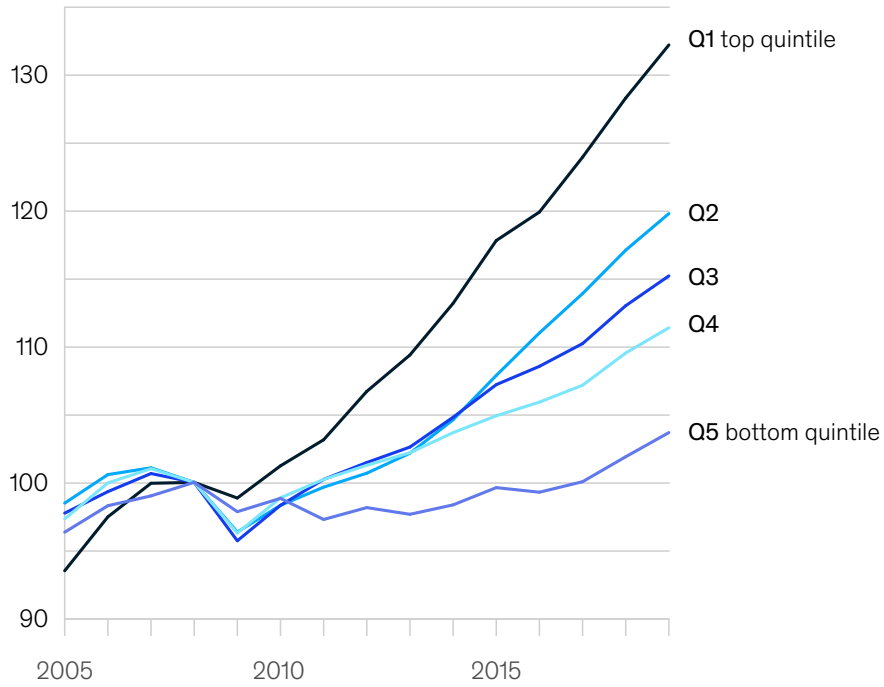
Fundamental to building a robust, reimagined postpandemic economy is keeping in mind the simultaneous and often self-reinforcing objectives of productivity improvement and inclusion. Nebraska, North Dakota, and Utah, for example, all had top-quintile GDP growth in the decade after the Great Recession, and all had top-quintile income equality as of 2018.[10]

To deliver on the dual mandate of productivity growth and broad-based income growth, public leaders at the state, regional, and city levels may find it helpful to prioritize seven areas of focus as part of their recovery and reimagination plans. Together, those levers aim to increase aggregate supply through greater productivity and innovation while unlocking latent demand to deliver growth.

Exhibit

Economic recovery among US states after the Great Recession has been uneven.

Real GDP recovery after the Great Recession by state quintiles,[1] % change



[1] Quintiles defined by 2008–19 real GDP compounded annual growth rate.
Source: Moody's Analytics

There are three levers that address supply:

— *Embrace and accelerate productivity enhancements.* Many trends and disruptions may accelerate in the wake of the COVID-19 crisis. Of them, automation and a shift of activities to online channels could be among the most relevant accelerating developments across many sectors. Some traditional sectors and occupations may be in decline, as a result, while newer ones may be generated. The economies that embrace and plan for those accelerating trends rather than resisting their impacts will most likely be the ones that outperform in the reimagined future.

  Public-sector leaders can incentivize the technology and skill investments needed for companies and workers to adapt to accelerated automation and digitalization. For example, the UK government, in collaboration with the manufacturing industry, launched a £20 million Made Smarter North West pilot to help SMEs navigate and adopt digital tools, including robotics and automation.

— *Find new openings to build resilience through 'health proofing' and diversifying economies.* Many sectors will be facing fundamental changes in how business is conducted in the postpandemic world, with a renewed emphasis on health. Hotels and airports are investing in contactless technology. New physical-distancing requirements will require numerous businesses to rethink. As such changes shake up businesses, policy makers and economic planners could take the opportunity to consider how to build back better, with healthy products and services.

  In addition, the current economic disruptions may also prompt policy makers to consider how to make their local economies more resilient through diversification of their economic activities. For example, New York City's diversification away from finance toward tourism, business service, and the arts allows the city to withstand market volatility better. With its diversified base in education, research, and technology, Austin was able to add jobs during the Great Recession.[11] Texas diversified by investing nearly $3 billion in cancer research and treatment in the first decade after the Great Recession, a move that helped boost its residents' health outcomes and the state's life-science ecosystem.

— *Invest in innovation ecosystems.* Building and strengthening innovation ecosystems—from state, business, and academia-led R&D to commercialization, start-up, entrepreneurship, and VC—will be critical in building a strong postpandemic economy and gaining global share of the innovation economy. Coordinated investments in R&D, talent, capital, place, and inclusion are all needed to strengthen regional innovation ecosystems. For example, the New York City metropolitan area anchored its innovation ecosystem in financial services and research universities, and that approach helped the area foster a robust tech sector and helped increase total VC investments more than five-fold from 2008 to 2017.

There are four levers that both expand productive capacity and broaden demand and inclusion:

— *Invest in inclusive growth and unlocking the maximum productive potential of all people in communities.* The widening disparities in access to opportunity are growing starker, as are the disparities in outcome across race, ethnicity, gender, and income. Research has shown that equity-enhancing measures can boost economic growth in the long run. For example, achieving gender equality could add $4 trillion to the US economy, and closing the Black–white wealth gap could add a further $1.5 trillion.[12]

  Solutions need to be targeted and long term, and they will require targeted investments to ensure equity in income and wealth across demographic groups. Such investment areas could include expanded childcare, accessible public

Leaders could be well served by planning projects that make their cities and regions more connected, equitable, sustainable, safe, and attractive.

transportation and other essential public services, available early-childhood education, improved K–12 outcomes, better public health, affordable housing, and affordable banking for underserved populations, among other strategies.

— *Lead a skill and talent revolution.* The long-term trends toward more automation and more digitization are now compounded by a shift to remote work and changing health and safety standards. It is likely that workers will need both digital and knowledge-based skills to ensure that they have a place in the postpandemic economy.

  Initiatives that could help achieve that goal include strengthening education on problem solving, science, technology, engineering, and mathematics at all levels; incentivizing workers and companies to reskill themselves through tax credits and training subsidies; and scaling up apprenticeship and internship programs dramatically through education-industry partnerships—the types of programs that states such as Colorado and countries such as Germany and Switzerland have pursued. Public leaders at all levels could have an important role to play in helping workers reskill to attain new and better jobs.

— *Invest in digital-infrastructure access to close the divide.* Digital infrastructure, among other public infrastructure and services, has been exposed by the COVID-19 pandemic as part of the realization that public good is not shared equally across US regions. Investments in public digital-infrastructure projects—particularly those that support access to data and enable cloud and 5G technology—can create jobs, support workforce development, and attract business investment. For example, Government Technology Agency, Singapore's public-sector information- and technology-services arm, is increasing its spending by 30 percent in the wake of the COVID-19 crisis, and that move is expected to help kick-start more digital-infrastructure spending within the government and throughout Singapore.

— *Invest in making cities citizen-centric.* Megacities face a battlefield of competing for workers who are increasingly mobile. Recent and future projections of employment growth highlight growing preferences for alternative high-growth hubs, such as Austin, Denver, and Raleigh, over their larger, more expensive peers. Cities may want to consider their value propositions, such as their ability to offer efficient and high-quality public services, updated public infrastructure, and more affordable housing. By making the right investments, state and local leaders could be well served by planning not just for shovel-ready projects but also for those that make their cities and regions more connected, equitable, sustainable, safe, and attractive.

Implementing new ways of organization to enable changes

The scope of the challenge in reimagining the US economic future is daunting, but the stakes have never been higher. To unlock latent demand and execute the vision, governments could consider adopting new ways of working and organizing, such as the following:

— *Organize for success within government.* Within government, neither the economic-development organization nor the treasury department alone can deliver growth.

The crisis provides an opportunity to reevaluate metrics of success, such as by giving greater consideration to the quality as well as quantity of new jobs.

Leaders will need to convene a broad-based group within government that cuts across economic development, treasury and budget, transportation, energy, higher education, K–12 education, labor, and other departments. Close involvement of the governor's or mayor's office and sponsorship by the governor and mayor are likely to be of critical importance as well.

— *Ensure broad civic engagement.* Beyond government, a broad-based, multisector task force, including private and not-for-profit leaders, can be built to maximize the number of ideas from all sectors of the economy, secure buy-in, and ensure that all expertise and implementation resources are brought to bear.

Policy makers could consider positioning Black, Latinx, and Native American communities at the center of designing and delivering inclusive plans. That could help those communities identify with, advocate for, and lead the work to bring in more sustained long-term investment. As an example of broad civic engagement, the Netherlands launched the Voor je Buurt (For Your Neighborhood) platform in 2013 to crowdsource and crowdfund civic projects; it has been implemented in more than 40 cities and provinces.

— *Introduce better success metrics.* The implementation challenge will likely be particularly high when a task is as bold as economic reimagination. It is therefore critical to maintain discipline, energy, focus, and momentum throughout a multiyear period. Each initiative will need metrics, targets, milestones, and owners. Outcome metrics and targets should be identified in some long-term, measurable performance areas, such as GDP, productivity, median income, improvements in income for underrepresented groups, income distribution more broadly, VC investment, and number of businesses started. Metrics and targets should also be identified for some short-term areas, such as consumer spending and job placement.

The current crisis provides an opportunity to reevaluate traditional metrics of success, such as by giving greater consideration to the quality of new jobs, in addition to their number. Some novel approaches pointing the way include new models being embraced in the Netherlands, New Zealand, South Africa, and the United Kingdom. For example, New Zealand released the world's first-ever well-being budget in 2019.

— *Implement funding.* The unprecedented demand for government expenditures has put immense fiscal pressure on state and local governments. Governments will need to pursue the full set of resources available to them to fund the reimagination of the economy: leverage federal funding, reform state and local tax policies, issue debt, monetize government-owned assets, and establish public–private partnerships to crowd in private capital.

As government funding is squeezed by lower sales and income-tax receipts and if stock indexes continue to soar, then public–private partnerships and other mobilization of private capital might offer the largest pools of funding and financing for economic reimagination. The challenge

will be to unlock that private investment. Inviting private-sector players to the table early in the planning can certainly help.

— *Diagnose context-specific challenges.* Public leaders should consider making a retrospective assessment of the performance, assets, and vulnerabilities of their regions' economies before the COVID-19 pandemic and recession. Those can provide baselines for evaluating the potential impacts of the crisis. It is critical for forecasts to include a number of scenarios at the macrolevel and at the microlevel, including postpandemic macrotrends, to understand exactly where challenges and opportunities are likely to spring up and where there will be urgent calls for reimagination.

— *Design challenge-specific solutions.* Policy makers may find it helpful to make an inventory of the solutions proven effective in dealing with expected barriers to determine which ones to pilot or scale up. Such an inventory could include excellent programs that are already designed but are operating subscale, best practices that other regions have pursued during the current crisis and past crises, and new initiatives that respond to new trends and challenges. Ultimately, a set of initiatives should emerge that balances cost, ease, impact, time horizon, and responsible actors. It is often better to have fewer higher-impact initiatives than too long a list of fragmented initiatives that is likely to fall victim to overly dissipated energies.

— *Execute with accountability, sustainability, and agility.* Implementation is where governments and multisector task forces most often fall short.

The individual resilience of businesses and workers during the unique and devastating COVID-19 crisis has been inspiring. To help efforts add up to more than the sum of their parts and to have flexibility and resilience in the long run, leaders in government and across sectors can take advantage of a major opportunity—one that is unprecedented in recent years and could serve them well in this crisis and in future crises. That opportunity is to reimagine not just their economies but also how they could work together to become far more than just the sum of their own parts.

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The great acceleration in healthcare: Six trends to heed

Cara Repasky and Shubham Singhal

Next-generation care management, health for all, consolidated care delivery, and reform efforts are among the trends that may shape healthcare in the years ahead.

"The fault lines between industries and business models that we understood intellectually before the COVID-19 crisis have now become giant fissures, separating the old reality from the new one." Our colleagues in the Strategy practice wrote this in their article, "The Great Acceleration."[1] We see seeds being sown of a similar acceleration in healthcare during the COVID-19 era. As US healthcare leaders set the direction for their organizations, six trends stand out.

Reform

COVID-19 has potentially set the stage for healthcare reform along three dimensions: COVID-19-era waivers that could become permanent; actions that may be taken to strengthen the healthcare system to deal with pandemics; and reforms to address the COVID-19-induced crisis.

To enable the healthcare system to respond to the pandemic, the Centers for Medicare & Medicaid Services has introduced more than 190 waivers and modifications since the beginning of March 2020.[2] These actions impact the clinical practice of medicine and the financing and reimbursement for services. Many of these measures are only relevant during the crisis (for example, the waiver of intensive care unit death reporting). A retrospective assessment of others (for example,

These six trends are likely to shape post-COVID-19 healthcare.

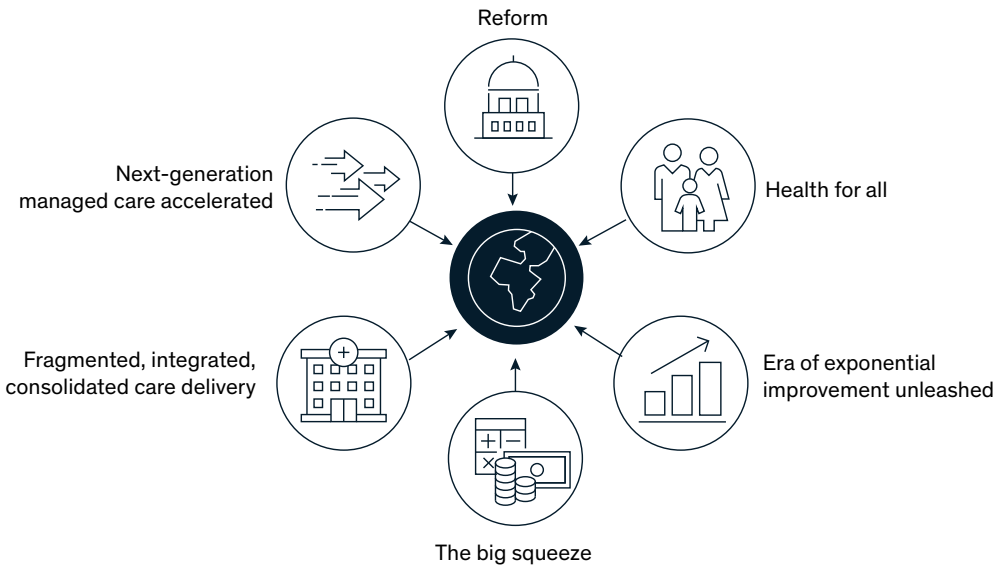
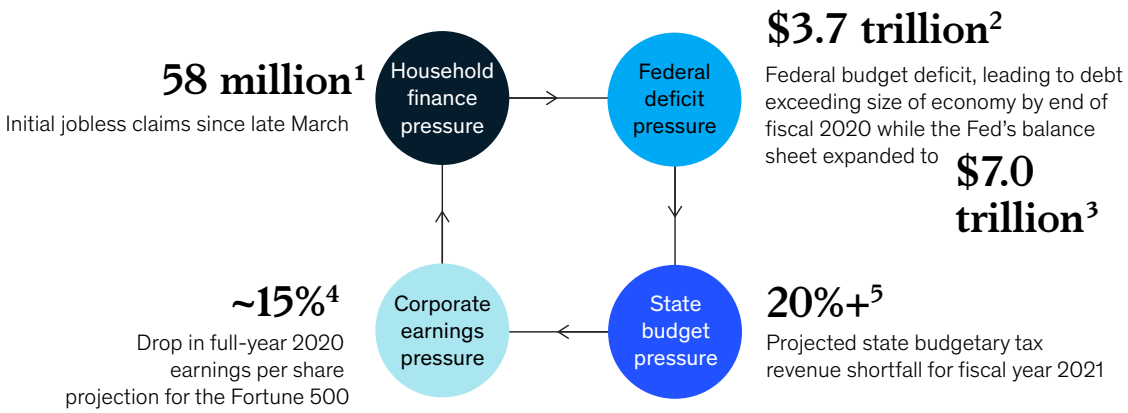


Exhibit 1

Severe COVID-19-era economic pressure may be likely to heighten calls to contain rising healthcare costs.



[1] Department of Labor as of August 27, 2020.
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expansion of telehealth access) could reveal beneficial innovation worth preserving.

The frontline workers and leaders in healthcare took heroic action to save lives. At the same time the crisis has revealed areas that could improve the resilience of the system. Some of these opportunities include ramping up measures to control the spread of such a fast-moving virus, greater resilience in the healthcare system to avoid being overwhelmed (for example, addressing weak links within the medical supply chain and developing the ability to flex up critical care capacity and clinical workforce), as well as ways to improve the baseline health of the population (for example, offering services to mitigate the prevalence of chronic conditions and obesity rates).

The economic impact of COVID-19 is unprecedented in the last 75 years, creating historic economic pressure across federal and state governments, corporations, and American households (Exhibit 1). Furthermore, in some cases the impact of COVID-19 may cause up to roughly 10 million Americans to lose employer-sponsored healthcare coverage by the end of 2021.[3] In the United States, such economic dislocation has often been followed by major healthcare reform (Exhibit 2). If the United States embarks on new reform, the contours are unclear at this time. However, given the substantial shifts in relative market positioning among industry players that prior reforms have created, leaders would do well to plan ahead now, as we discussed in the article "Getting ahead of the next stage of the coronavirus crisis."[4]

Health for all

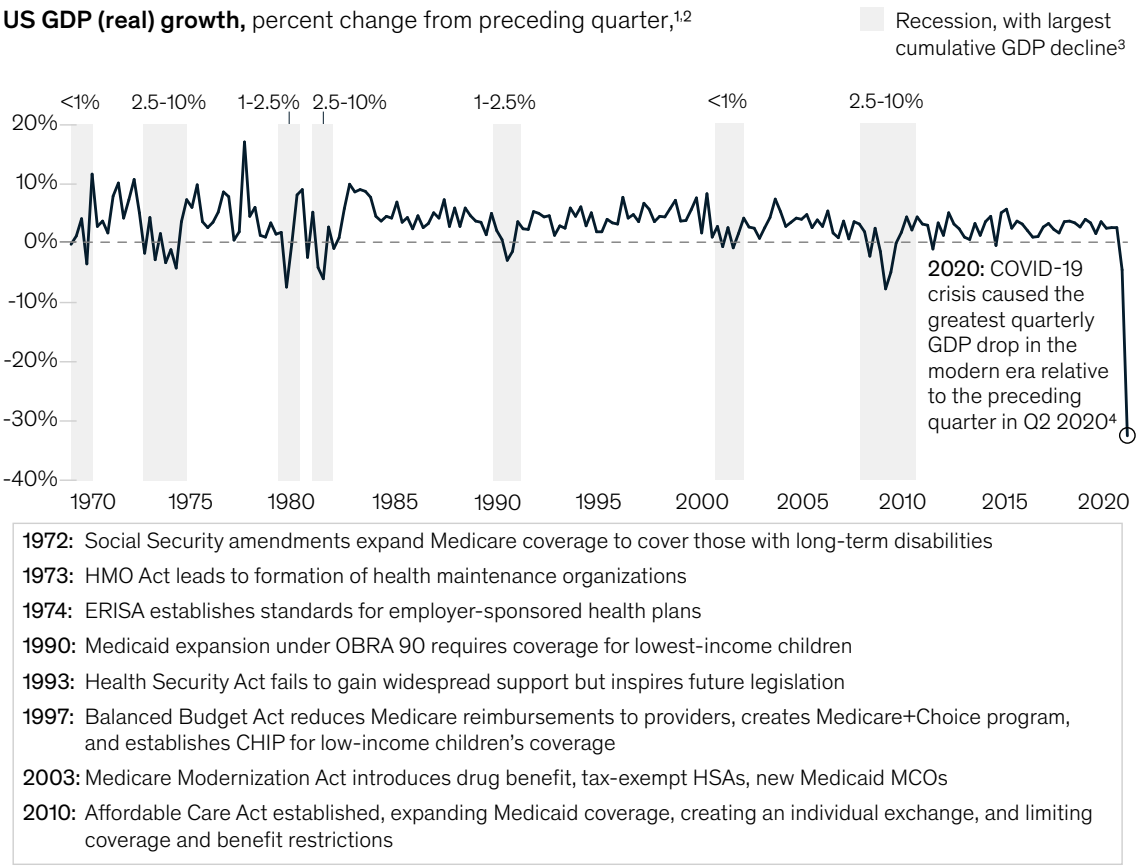
COVID-19 has amplified existing inequitable health outcomes. These five intersecting health and social conditions are correlated with poorer health outcomes.

— **Physical health status.** People with chronic conditions, the immunocompromised, and the elderly make up most COVID-19 deaths in the United States. For example, obese patients, defined as those with a Body Mass Index above 35, are 2 times more likely to be hospitalized and 3.5 times as likely to be admitted to the intensive care unit due to COVID-19.[5]

— **Behavioral health challenges.** Individuals at an increased risk of developing

Exhibit 2

Economic recessions have been fertile ground for healthcare reform.



CHIP, Children's Health Insurance Program; ERISA, Employee Retirement Income Security Act; HMO, health maintenance organization; HSA, health savings account; MCO, Managed Care Organization; OBRA, Omnibus Budget Reconciliation Act.
[1] Expansionary period is defined as duration from through to peak.
[2] Economic cycle defined as duration length of "peak to peak" timeline.
[3] Largest cumulative GDP decline in 2-year period after NBER peak.
[4] Q2 2020 change is projected based on scenario A1 based on McKinsey Global Institute analysis.
Source: Bureau of Economic Analysis; Bureau of Labor Statistics; National Bureau of Economic Research; McKinsey Global Institute

severe COVID-19 symptoms are nearly twice as likely to have a behavioral health condition, including mental health and substance abuse disorders.[6]

— **Unmet social needs.** Americans living in areas with significant unmet social needs (for example, food insecurity, housing insecurity) account for 15 percent of the population but 28 percent of COVID-19 deaths.[7] In areas with high unemployment levels, COVID-19 deaths per 100,000 are 2.4 times higher than in areas with low unemployment.

— **Racial inequity.** Compared with white Americans, the estimated age-adjusted COVID-19 mortality rate for Black Americans is 3.8 times, for American Indians 3.2 times, and for Hispanic/Latinx Americans 2.5 times.[8]

— **Access to care.** Challenges in access to care continue across the United States, with around 60 million Americans living in counties with low physical access to care.[9] Furthermore, around 63 percent of all counties in the United States have a shortage of psychiatrists.[10] Telehealth offers a great opportunity to expand access: inadequate physical access to care could be redressed for up to an additional 50 million Americans. However, 10 million Americans still do not have broadband access and live in areas with low physical access to care (Exhibit 3).[11]

Era of exponential improvement unleashed

As we previously highlighted in "The era of exponential improvement in healthcare?,"[12] technology-driven innovation may improve our understanding of patients, enable the delivery of more convenient, individualized care, and create from $350 billion to $410 billion in annual value by 2025. While the pace of change in healthcare has lagged other industries in the past, potential for rapid improvement may accelerate due to COVID-19. An example is the exponential uptake of digitally enabled, virtual care. Our analysis presented in "Telehealth: A quarter-trillion-dollar post-COVID-19 reality?"[13] showed that health systems, primary care, and behavioral health practices are reporting increases of more than 50–175 times in telehealth visits, and the potential market size for virtual care could reach around $250 billion (Exhibit 4).

Proliferation of digitally enabled, virtual care could further contribute to the rise of personalized and intuitive healthcare ecosystems. As we shared in "The next wave of healthcare innovation: The evolution of ecosystems,"[14] ecosystems in healthcare have the potential to deliver an integrated experience to consumers, enhance productivity of providers, engage both formal and informal caregivers, and improve outcomes while lowering cost.

The big squeeze

While the aftermath of the 2008–09 financial crisis led to a net outflow due to the transition of commercially insured employees to uninsured, the Affordable Care Act brought an injection of $130 billion-plus of funding into healthcare (for example, Medicaid expansion, funding for the marketplace). However, a similar injection of funding to mitigate the **$70 billion and $100 billion outflow** (for example, coverage shifts, state budgetary pressures) due to COVID-19 **may not take place by 2022**. This outflow is expected to be primarily driven by coverage shifts out of employer-sponsored insurance and possible coverage reductions by employers as well as Medicaid rate pressures from states.

We estimate that COVID-19 could depress healthcare industry earnings by between $35 billion and $75 billion compared with baseline

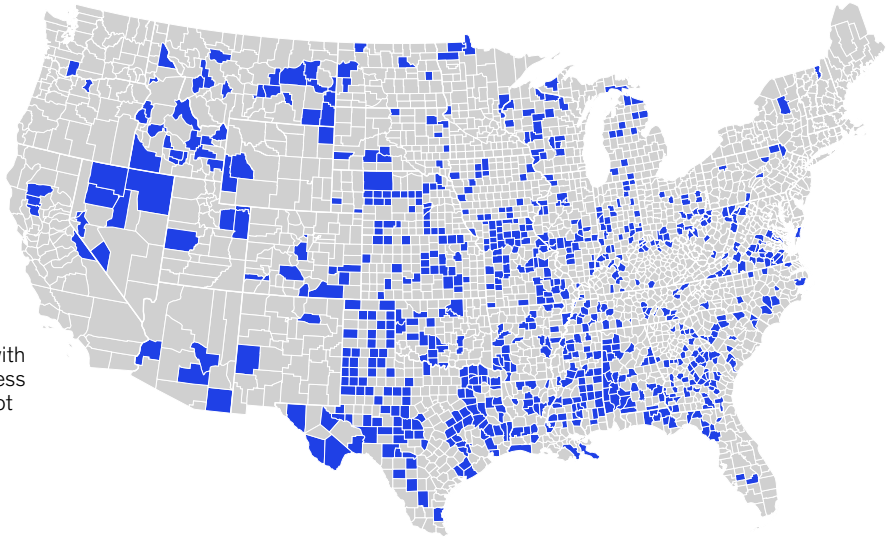
Exhibit 3

Virtual care will expand access to many, but not all, areas of the country with limited physical access.

US counties with low physical access to care and no access to broadband in lower 48 states[1]

~10 million people

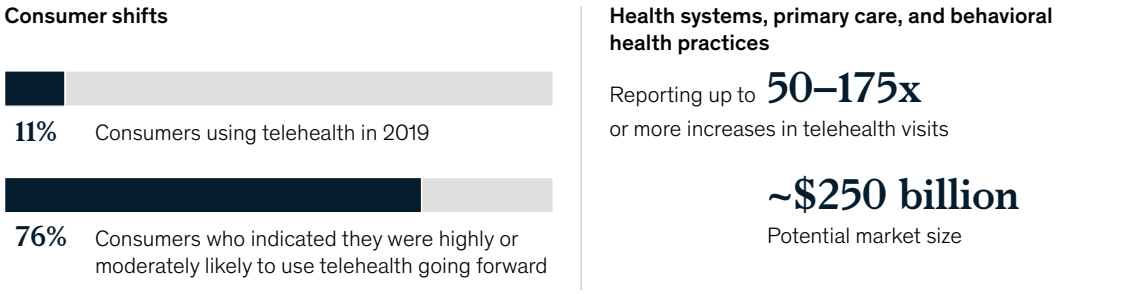
live in counties with low physical access to care and do not have access to broadband



[1] n = 3,075 counties with sufficient data for comparison.
Source: Census Bureau, American Community Survey and FCC 2019 Broadband Deployment Report

Exhibit 4

COVID-19 and the potential of digitally enabled, virtual care.



Source: McKinsey analysis published in Bestsennyy O, Gilbert G, Harris A, and Rost J, "Telehealth: A quarter-trillion-dollar post-COVID-19 reality," May 2020, McKinsey.com

expectations. Select high-growth segments will remain attractive (for example, virtual care, home health, software and platforms, specialty pharmacy) and will disproportionally drive growth. These high-growth areas are expected to increase more than 10 percent over the next five years, while other segments may stagnate or decline altogether.[15]

Despite the pressure in earnings, organizations with businesses that operate in the lower-growth segments may still outperform and deliver higher-growth returns by improving productivity. We estimate between $280 billion and $550 billion in opportunity within healthcare delivery by 2028 achievable through productivity gains. More details can be found in our publication "The productivity imperative for healthcare delivery in the United States."[16]

Fragmented, integrated, consolidated care delivery

The shift of care out of hospitals is not new but has been accelerated by COVID-19. Care in the next normal could be increasingly delivered in distributed sites of care (Exhibit 5), integrated around the patient through digital and analytics across patient-centered ecosystems, and driven by at-scale players pursuing proven models to outperform. Larger, geographically diversified providers are weathering the financial impacts of COVID-19 better.[17] These systems also own an outsized share of the distributed, outpatient assets that could drive earnings growth in the next normal. For example, the largest 25 percent of health systems generate 60 percent of revenue from outpatient assets compared with around 40 percent for smaller systems.[18] Further more, large payers have rapidly become major owners of non-hospital care delivery assets, with nine out of ten top payers already owning distributed, outpatient assets.[19]

Next-generation managed care accelerated

Payers pursuing the next-generation managed care model (through deep integration with care delivery) demonstrate better financial performance, capturing an additional 50 basis points of earnings before interest, taxes, depreciation, and amortization above expectation (Exhibit 6). This next-generation managed care model has been driven in large part through Medicare Advantage, where positive outcomes have been delivered to beneficiaries (see Sidebar on p. 85).

As discussed earlier, the current crisis is placing substantial pressure on employers' economics. However, the primary lever of shifting costs to employees to promote value conscious consumption has run out of steam. In 2019, average employee contribution for family coverage was 32 percent at employers with more than 500 employees and 53 percent for smaller employers with less than 500 employees. The intense pressure on household financials makes the overall healthcare exposure larger than many consumers' ability to absorb (Exhibit 7). Employers and payers could consider fundamentally rethinking how employer-sponsored health coverage is structured. Learnings from Medicare Advantage (see Sidebar on p. 85) could provide inspiration for such a reimagination.

What actions could you take?

— Launch a **plan-ahead team** to collect forward-looking intelligence, develop scenarios, and identify decision points for action to navigate uncertainty in the path to the next normal. As we outlined in "Getting ahead of the next stage of the coronavirus crisis,"[20] planning ahead for crises requires a dedicated effort, with a full-time senior executive leading and accountable for a team of high performers located "next door" to the CEO.

— **Question everything** about your role in healthcare and future business model as your organization transitions from "wartime" to "peacetime." More details on the transition can be found in our article "From 'wartime' to 'peacetime': Five stages for healthcare institutions in the battle against COVID-19"[21]

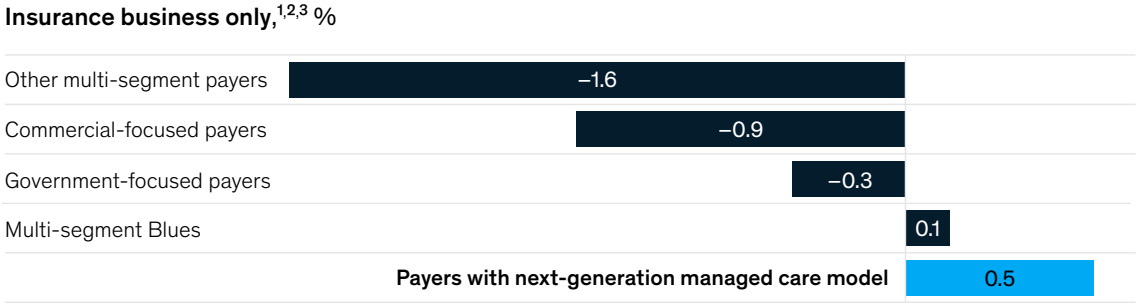
Exhibit 5

Virtual care and outpatient options show more potential revenue growth through 2022.

[1] Compound annual growth rate.
Source: McKinsey analysis

Exhibit 6

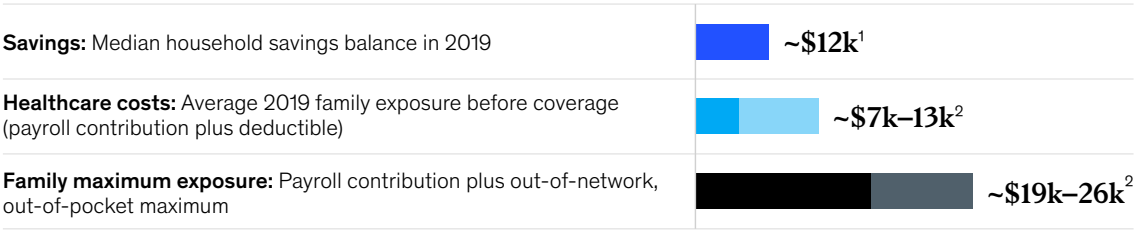
Payers pursuing the next-generation managed care model demonstrate better financial performance (2017–18).



[1] Does not include administrative services only, Individual, and Medicare stand-alone prescription drug plan.
[2] Weighted average on premium for excess gain across all lines of business.
[3] Does not include Kaiser.
Source: McKinsey Payer Financial database

Exhibit 7

Households may no longer be able to absorb further healthcare cost shifting.



[1] Based on MagnifyMoney report derived from Federal Reserve and Federal Deposit Insurance Corporation data.
[2] Range based on the following: Low-end based on a family enrolled in a preferred provider organization plan with an employer of 10–20k employees (low end) and a family, high-end based on a family in high-deductible health plan with an employer with <500 employees.
Source: Census Bureau American Community Survey Data; Mercer 2019 Health and Benefits Survey; Survey of Consumer Finances (SCF)

— Ramp up capabilities to **transform your business, including acquisitions and alliances**. Our two decades of research outlined in the article "The power of through-cycle M&A"[22] show that a through-cycle mind-set to M&A can enable and accelerate the strategic shifts necessary to emerge from the COVID-19 crisis healthy and profitable.

— **Reimagine your organization to lock in the speed** of decision making and execution achieved during the crisis. In "Ready, set, go: Reinventing the organization for speed in the post-COVID-19 era,"[23] we share nine discrete ways companies can get faster.

— Lean forward on actions to **drive health equity**. We expressed the criticality of tracking the damage of COVID-19 and the recovery from the pandemic along racial lines in "COVID-19: Investing in black lives and livelihoods."[24] It is incumbent on all stakeholders to take proactive action to mitigate disparities and push toward health for all.

While the challenges are numerous, leaders who seize the mind-set that "disruptive change provides an opportunity to separate yourself from the pack" will build organizations meaningfully stronger than the ones they ran going into the crisis.

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7 Areas with significant unmet social needs defined as the top quintile of counties on the basis of neighborhood stress score. Areas with high unemployment defined as the top quintile of counties on the basis of percent unemployment. Neighborhood stress score is calculated based on a composite of Census values including income, employment, use of public assistance, transportation, single parent households, and education. See the "McKinsey Vulnerable Populations Dashboard" on McKinsey.com for additional detail and related data.
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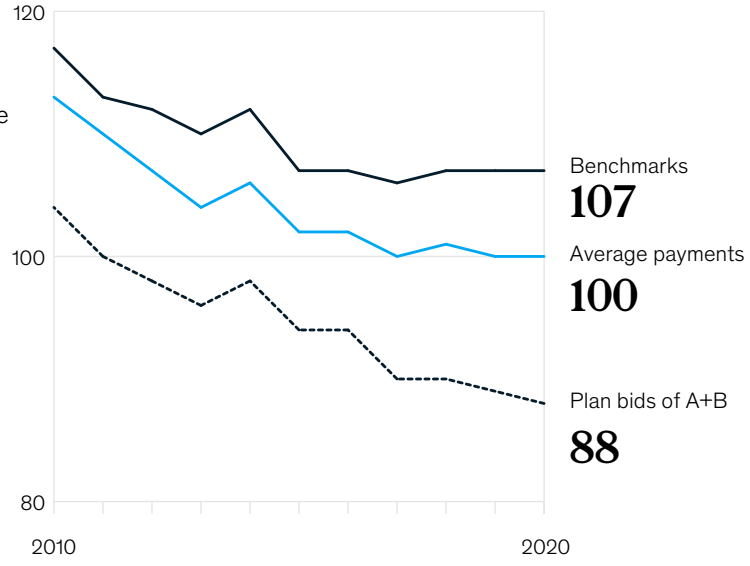
Sidebar

What employers could take away from Medicare Advantage

Medicare Advantage (MA) seems to have managed cost, quality, and experience positively over the last few years. In addition to consistently delivering greater cost efficiency over traditional Medicare, the cost trend has been better than for employer-sponsored insurance. Some of the efficiency has been reinvested in providing new benefits (for example, transportation, meals) and lower premiums paid by beneficiaries. How might employers adapt the approaches used in MA to improve the plans they sponsor as cost shifting to employees runs out of steam?

1 Over the past decade, MA plans have improved the efficiency with which they deliver A+B benefits.

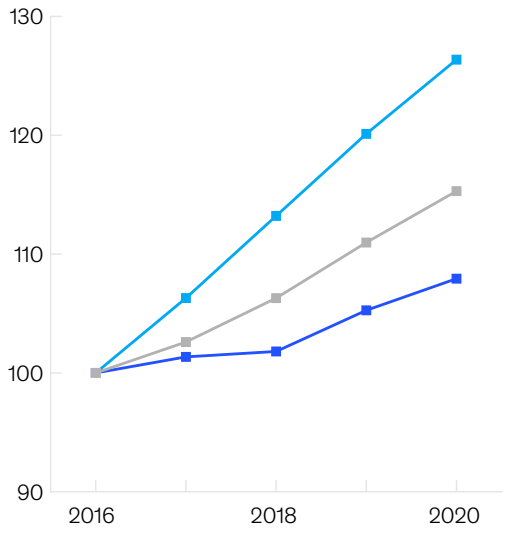
Average MA bids, benchmarks, and payments, % of fee-for-service spending[1,2,3]



What employers could take away from Medicare Advantage

2 Cost trend for employer-sponsored insurance has been higher than MA.

Change in per-person cost trend in employer-sponsored insurance[4] compared to MA, 2016–20, indexed to 100[5]



+26%
trend in employer-sponsored plans before plan changes*

+15%
trend in employer-sponsored plans after plan changes

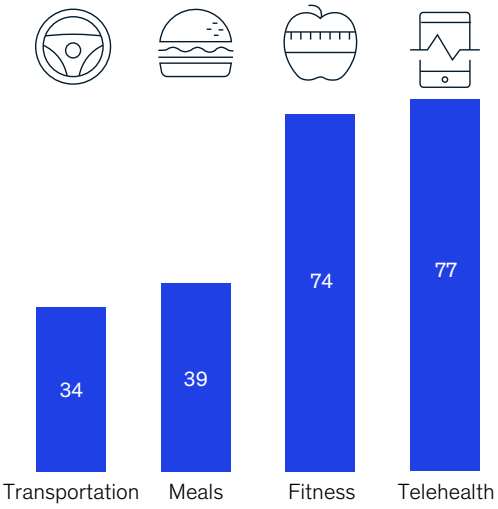
+8%
change in MA benchmark (no plan changes)[6]

*Higher trend in employer-sponsored insurance over the past three years is primarily driven by better care efficiency achieved in MA, accounting for approximately two-thirds of the difference; higher unit cost trend in employer-sponsored insurance accounts for approximately one-fourth of the difference. Remainder is attributed to differences in demographic mix changes.

3 MA plans have added benefits and lowered beneficiary premiums.

Share of MA enrollees in plans with supplemental benefits, by type in 2020, %

Employer-sponsored insurance plans have shifted 11% of cost onto members in the last five years through benefit design changes and payroll contribution increases to control costs, while MA plans have increased supplemental benefits and reduced premiums.



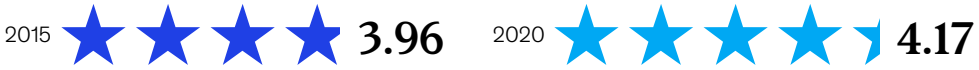
32%
Reduction in average monthly MA premiums from 2016 to 2020

93%
Of beneficiaries have access to a zero-premium MA plan in 2020

What employers could take away from Medicare Advantage

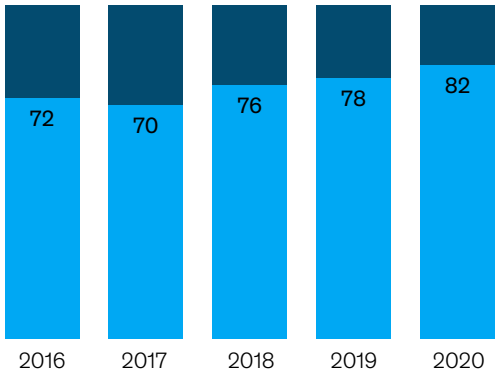
4 MA has achieved overall health quality improvements over time.

Enrollment-weighted average Star rating for MA-PD[8] plans, score out of 5



This improvement has been achieved despite tightening performance standards to achieve 4 Stars over time[7]

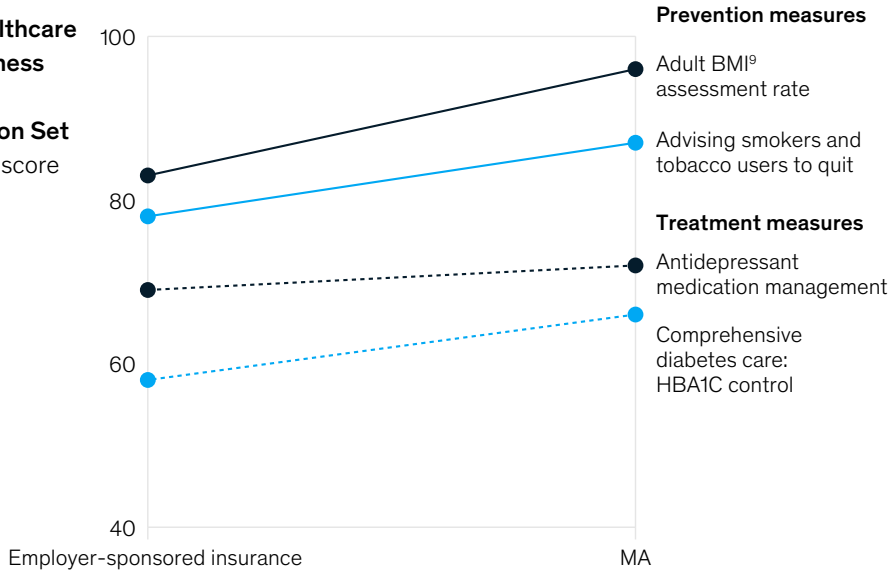
Enrollees in 4+ Star plans, %



+10
percentage-point increase 2016–20

5 MA outperforms employer-sponsored insurance on comparable quality measures.

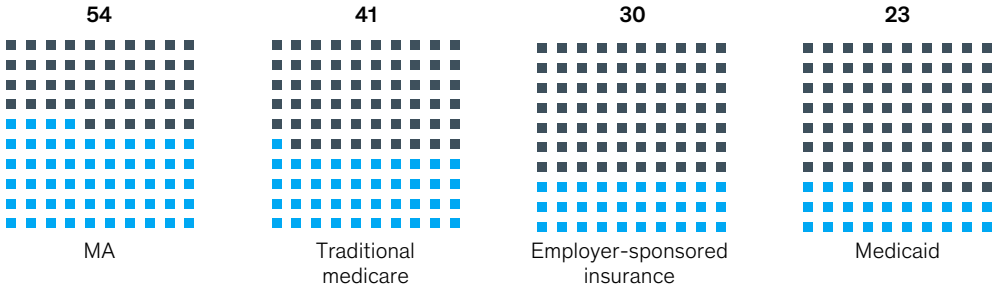
2018 Healthcare Effectiveness Data and Information Set (HEDIS),[8] score



What employers could take away from Medicare Advantage

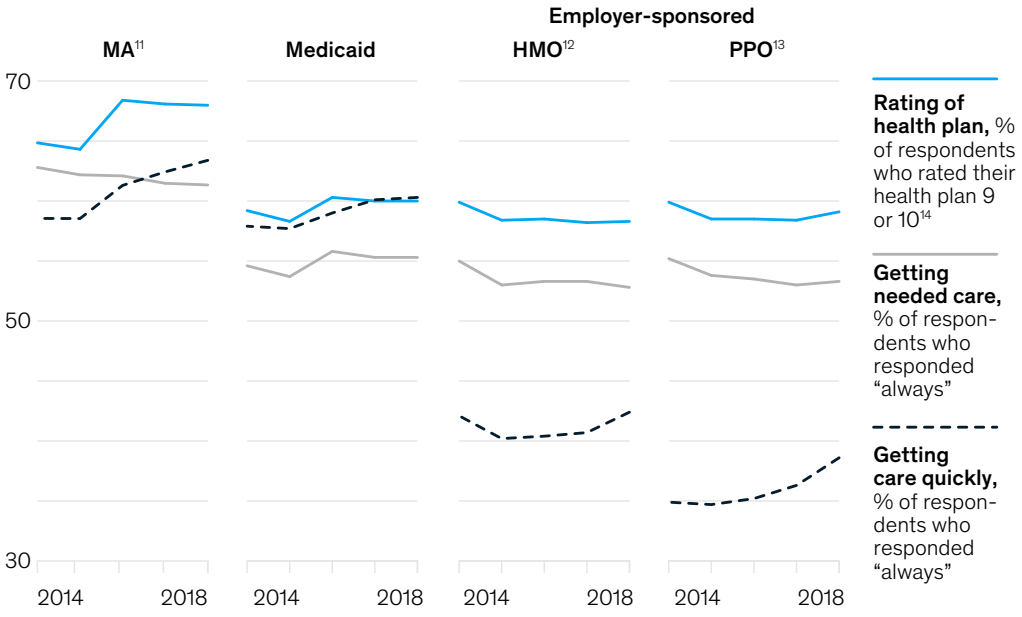
6 MA plans lead in the transition away from fee-for-service reimbursment.

2018 alternative payment models by line of business,[10] %



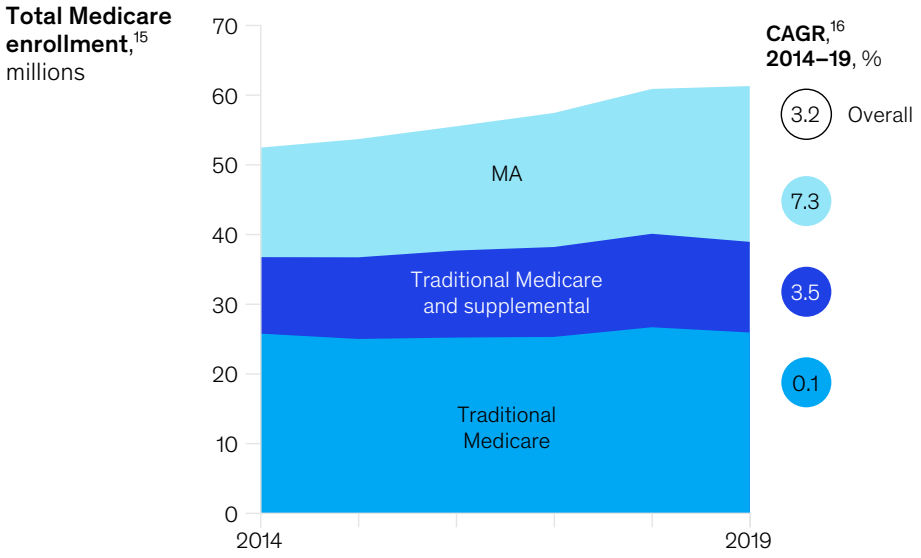
7 Consumers' satisfaction with their overall experience and access to care is higher in MA plans.

Customer satisfaction by key metric



What employers could take away from Medicare Advantage

8 Medicare beneficiaries seem to find value in MA plans driving its superior growth.



[1] MedPAC analysis of Centers for Medicare & Medicaid Services (CMS) data (plan bids, enrollment, benchmarks, and fee-for-service expenditures).
[2] Values are risk-adjusted and reflect quality bonuses; do not include adjustments for coding intensity difference between MA and fee for service exceeding statutory minimum adjustment (per MedPac, fully reflecting coding intensity would increase values by ~1–2%).
[3] Note that data may be affected by changes the Patient Protection and Affordable Care Act (PPACA) made to benchmark, payment, and rebate methodology, first taking effect in plan year 2012.
[4] Before and after plan changes.
[5] Figures may not sum to 100%, because of rounding.
[6] Based on expected average change in revenue, not including an adjustment for underlying coding trend.
[7] MA-PD, Medicare Advantage prescription drug plan.
[8] Quality performance needed to achieve 4 Stars increased for eight of 14 measures consistently used by CMS from 2009 to 2018.
[9] BMI, body mass index.
[10] Specific measures chosen based on applicability to employer-sponsored insurance and MA populations. Employer-sponsored insurance and MA scores shown reflect HMO plans.
[11] Health Care Payment Learning & Action Network (HCP-LAN) annual measurement of value-based purchasing adoption 2019, includes categories 3 (risk-based payments) and 4 (capitated payments).
[12] HMO, health maintenance organization.
[13] PPO, preferred provider organization.
[14] Reflects enrollment average weighting between HMO and PPO plans.
[15] Respondents were asked to give their health plan an overall rating, with 0 equaling "worst health plan possible" and 10 equaling "best health plan possible."
[16] CAGR, compound annual growth rate.

Source: CMS Star ratings data (2011–20) and June enrollment data (2011–19)—note that enrollment weighted Stars ratings may differ slightly from CMS reports due to enrollment used in analysis; HCP-LAN 2019 annual report; Kaiser Family Foundation; MedPAC Reports to Congress and CMS rates announcements; Mercer 2019 Health and Benefits Survey; Mercer's National Survey of Employer-Sponsored Health Plans; NCQA 2019 State of Health Care Quality Report

When will the COVID-19 pandemic end? An update

Sarun Charumilind, Matt Craven, Jessica Lamb, Adam Sabow, and Matt Wilson

Our November 23 update takes on the questions raised by recent news: When will vaccines be available? And is the end of COVID-19 nearer?

Since we published our first outlook,[1] on September 21st, the COVID-19 pandemic has raged on, with more than 25 million additional cases and more than 400,000 additional deaths. While the situation looks somewhat better in parts of the Southern Hemisphere, much of Europe and North America is in the midst of a "fall wave," with the prospect of a difficult winter ahead. Yet the past two weeks have brought renewed hope, headlined by final data from the Pfizer/BioNTech[2] vaccine trial and interim data from the Moderna trial, both showing efficacy of approximately 95 percent[3]; and progress on therapeutics. Is an earlier end to the pandemic now more likely?

The short answer is that the latest developments serve mainly to reduce the uncertainty of the timeline (Exhibit 1). The positive readouts from the vaccine trials mean that the United States will most likely reach an epidemiological end to the pandemic (herd immunity) in Q3 or Q4 2021. An earlier timeline to reach herd immunity—for example, Q1/Q2 of 2021—is now less likely, as is a later timeline (2022). If we are able to pair these vaccines with more effective implementation of public-health measures and effective scale-up of new treatments and diagnostics, alongside the benefits of seasonality, we may also be able to reduce mortality enough in Q2 to enable the United States to transition toward normalcy. (See sidebar, "Two endpoints for the pandemic" for our definitions.)

A secondary effect of the recent vaccine trials is to make Q3 2021 more likely for herd immunity than Q4. That said, major questions are still outstanding, even about vaccines, such as long-term safety, timely and effective distribution, and vaccine acceptance by the population, to say nothing of lingering epidemiological questions such as the duration of immunity.

These are estimates for the United States, which is likely to have fast and ready access to vaccines. We will consider timelines for other countries in forthcoming updates; they will vary based on the timing of access and distribution of vaccines and other factors. In this update, we review the most recent findings, look deeper at five implications of the ongoing scientific research, and discuss why our timeline estimates have not shifted meaningfully.

Revelations from vaccine and antibody trials

The world has cheered announcements over the past two weeks by Pfizer and its partner BioNTech, and from Moderna. Their COVID-19 vaccine candidates are showing efficacy rates that are higher than many dared hope for. One is a final result, and the other is an initial result whose sample size is large enough to give reasonable confidence in the data. At about 95 percent, efficacy is higher than expected by most experts.[4] It exceeds the optimistic case that we included in our September

article. Higher efficacy provides greater benefit to any vaccinated individual and may help to encourage uptake among some segments of the population. It also reduces the fraction of the population required to reach herd immunity. Moderna also announced that its vaccine is more shelf-stable than expected and would need only refrigeration to keep it stable for 30 days—another piece of good news. Finally, there are a number of other vaccines in late-stage trials from which data is expected in the coming months.

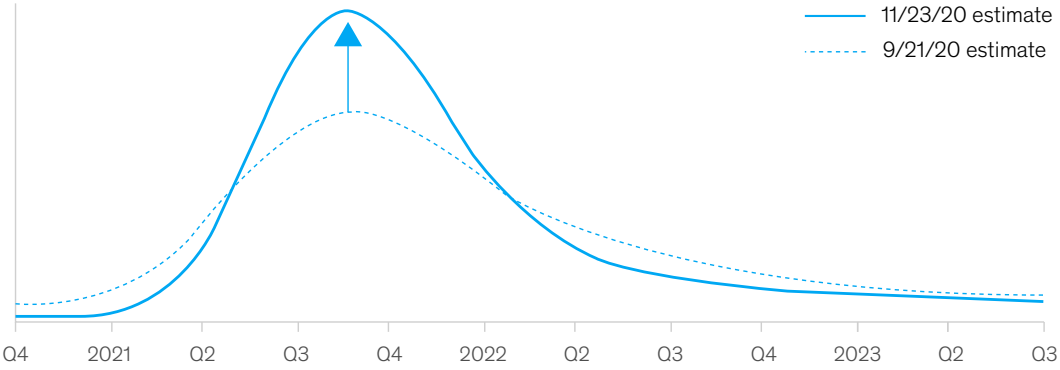
Caution is still warranted. The safety records of the Pfizer and Moderna vaccines appear promising so far (no serious side effects reported), but the coming months will provide a fuller picture as the sample size grows. We don't yet know how long the protection the vaccines offer will last. The Pfizer trial has enrolled some children (ages 12 and older), but efficacy in those under 18 remains unclear.

Beyond vaccines, science is also progressing in therapeutics for COVID-19. For example, Eli Lilly's antibody bamlanivimab was granted emergency use authorization (EUA) by the US Food and Drug Administration on November 9,[5] and Regeneron's EUA for its antibody cocktail REGN-COV2 for EUA was approved on November 22. Emerging data on these antibodies suggest that they can reduce the need for hospitalization of high-risk patients, and hold potential for post-exposure prophylaxis.[6] While they are not recommended for use in

Exhibit 1

Main effect of recent news is to increase confidence in Q3–Q4 2021 as most likely timeline to achieve herd immunity.

Probability of functional end[1] to COVID-19 pandemic in US[2] by quarter (illustrative)



Early herd immunity if:

- Vaccine rollout and adoption is faster than expected
- Natural immunity is significantly higher than realized

Peak probability of herd immunity (Q3/Q4 2021) driven by:

- Emergency use authorization (EUA) of 1+ candidates in Dec 2020/Jan 2021
- Biologic license application (BLA) (with full approval by March/April 2021)
- Approximately 6 months for manufacturing, distribution and sufficient adoption to reach herd immunity

Later herd immunity if one or more of the following occur:

- Safety issues delay EUA and/or BLA
- Manufacturing/supply chain issues slow rollout
- Adoption is slower than anticipated
- Duration of immunity is short
- Vaccine prevents disease progression but does not meaningfully reduce transmission

[1] A functional end to the epidemic is defined as reaching a point where significant, ongoing public-health measures are not needed to prohibit future spikes in disease and mortality (this might be achieved while there are still a number of people in particular communities who still have the disease, as is the case with measles).
[2] Timeline to functional end is likely to vary somewhat based on geography.
Source: Information compiled from a variety of public statements and sources (ie, *Atlantic*; CDC; Cell [June 2020]; FDA; MedRxiv; *Nature; Nature Reviews* [August 2020, July 2020]; *NY Magazine; Oxford Academic; PNAS; Science; Science Advances; Science Immunology* [June 2020]; WHO); interviews with relevant experts; and surveys conducted by McKinsey and others

Sidebar

Two endpoints for the pandemic

An *epidemiological end point* will be reached when herd immunity is achieved. One end point will occur when the proportion of society immune to COVID-19 is sufficient to prevent widespread, ongoing transmission. Many countries are hoping that a vaccine will do the bulk of the work needed to achieve herd immunity. When this end point is reached, the public-health-emergency interventions deployed in 2020 will no longer be needed. While regular revaccinations may be needed, perhaps similar to annual flu shots, the threat of widespread transmission will be gone.

A second (and likely, earlier) end point, *a transition to normalcy*, will occur when almost all aspects of social and economic life can resume without fear of ongoing mortality (when a mortality rate is no longer higher than a country's historical average) or long-term health consequences related to COVID-19. The process will be enabled by tools such as vaccination of the highest-risk populations; rapid, accurate testing; improved therapeutics; and continued strengthening of public-health responses. The next normal won't look exactly like the old—it might be different in surprising ways, with unexpected contours, and getting there will be gradual—but the transition will enable many familiar scenes, such as air travel, bustling shops, humming factories, full restaurants, and gyms operating at capacity, to resume.

hospitalized patients, these antibodies add to the growing armamentarium of treatments and protocols for COVID-19, where every incremental advance could help to reduce mortality. Collectively, these treatments and changes in clinical practice have lowered mortality for those hospitalized by 18 percent or more.[7]

Looking deep into the data

Research and findings of the past two months have shed light on a number of uncertainties and in some cases have raised new questions. Here we review five implications; each has helped refine our probability estimates for the COVID-19 pandemic timeline.

Vaccine age restrictions elevate coverage requirements to reach herd immunity

It appears that the two vaccines mentioned will be indicated first for use in adults.[8] It's not clear when use in children will be indicated. One consequence is that the vaccines' contribution to population-wide herd immunity will depend on adults, at least until vaccines are approved for use in younger populations. If vaccines are efficacious, safe, and distributed to all ages, vaccine coverage rates of about 45 to 65 percent—in combination with projected levels of natural immunity—could achieve herd immunity (Exhibit 2).

On the other hand, if vaccines are efficacious but distributed only to adults, who comprise only 76 percent of the US population,[9] then higher vaccine coverage rates—approximately 60 to 85 percent—could be required to achieve herd immunity.

Another consequence is that older children, who have twice the COVID-19 incidence of younger children and who have higher viral loads (and therefore greater potential contagiousness) than adults[10] may not have immediate access to vaccines.

We recognize that calculating herd immunity thresholds is complex. Basic formulas fail to account for variations in the way populations interact in different places.[11] For this reason we include relatively wide ranges.

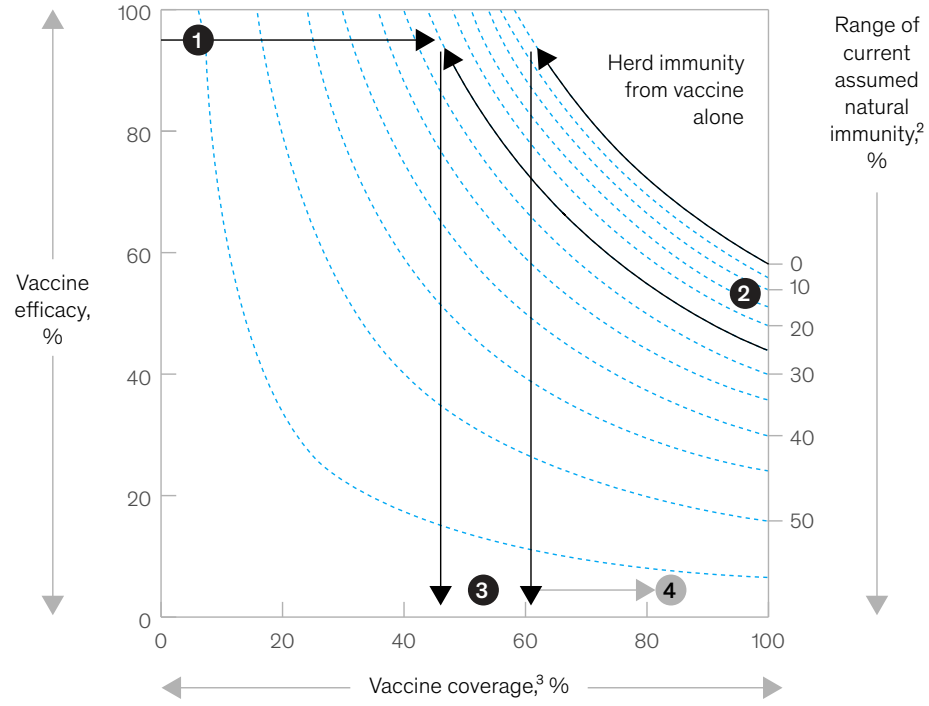
Unclear impact of vaccines on transmission could raise the bar on coverage

Vaccine trials and regulatory approval will be based on safety and efficacy in reducing virologically confirmed, symptomatic disease among individuals.[12] That's not the same as reducing transmission. This distinction will have much to say about whether the United States reaches normalcy in Q2 or Q3 of 2021. In practice, we have data on whether people who are vaccinated are less likely to get sick with COVID-19 (and less likely to get severe disease), but we won't have data on how likely they are to transmit to others. It's an important distinction because what will drive herd immunity is reduction in transmission. If vaccines are only 75 percent effective at reducing transmission,

Exhibit 2

Vaccine efficacy and coverage are both important; recent data on efficacy brings clarity to likely coverage targets.

COVID-19-immunity scenarios[1]



1 Two new vaccines have shown efficacy of **~95%**

2 US seroprevalence (natural immunity) is widely believed to be between **0–25%**[2]

3 The intersection of these values for efficacy and seroprevalence suggests that required coverage for the US is **~45–65%**

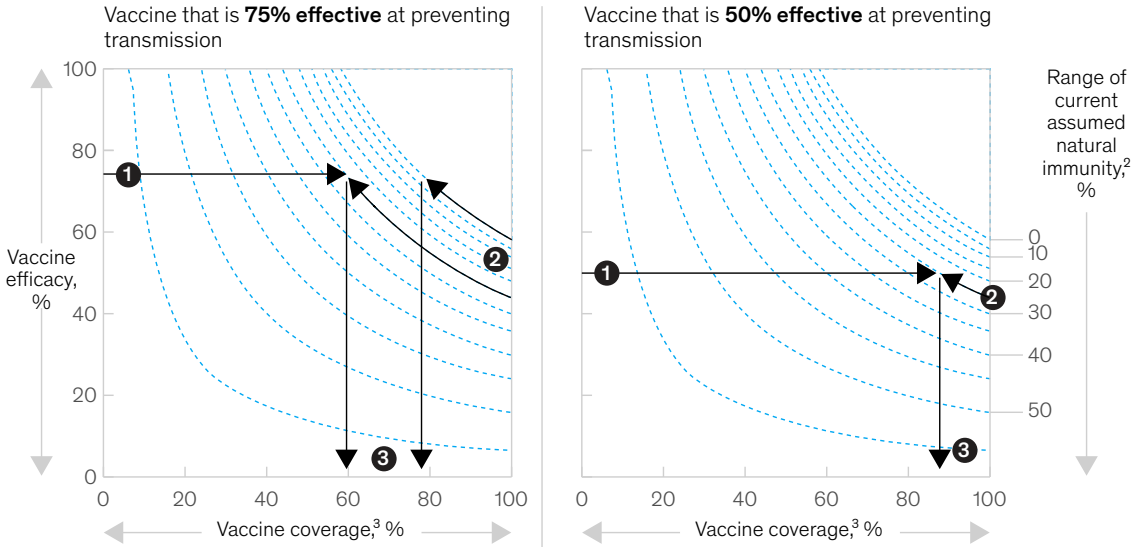
4 The model assumes that vaccines are distributed to adults and children. The new vaccines may not be indicated for children. If only adults are vaccinated, coverage may need to be 30% higher (ie, **58–85%** vaccine coverage)

[1] COVID-19 herd immunity achieved once total immune population reaches 58%, using basic reproductive number (R0) of 2.4; herd-immunity threshold calculated as 1 – (1/R0). The model assumes that each member of a population mixes randomly with all other population members. In reality, people mix mostly with others whose patterns of interaction are similar to their own. Subpopulations with fewer interactions have lower thresholds for herd immunity than do those with more interactions.
[2] Summary statistics, SeroTracker, November 19, 2020, serotracker.com. Our model assumes that test seropositivity correlates with natural immunity. Research is ongoing to validate this. If US seroprevalence continues to rise, then minimum vaccine coverage levels required will decrease.
[3] Assumes that vaccine will be given to entire population, regardless of whether they have had COVID-19.
Source: Moderna; Pfizer; SeroTracker; US Census Bureau

Exhibit 3

Leaders should be alert to possible scenarios of lower vaccine efficacy.

Alternative US COVID-19-immunity scenarios[1]



1 Vaccine that is **75% effective** at preventing transmission

2 Natural immunity is between 0–25%[2]

3 These values for efficacy and seroprevalence suggest that required coverage for the US is **60–80%** (or ~78–94% if limited to adults)

1 Vaccine that is **50% effective** at preventing transmission

2 Natural immunity is between 0–25%[2]

3 These values for efficacy and seroprevalence suggest that required coverage for the US is **90% or higher** (or ~100% if limited to adults)

[1] COVID-19 herd immunity achieved once total immune population reaches 58%, using basic reproductive number (R0) of 2.4; herd-immunity threshold calculateas 1 – (1/R0). The model assumes that each member of a population mixes randomly with all other population members. In reality, people mix mostly with others whose patterns of interaction are similar to their own. Subpopulations with fewer interactions have lower thresholds for herd immunity than do those with more interactions.

[2] Summary statistics, SeroTracker, November 19, 2020, serotracker.com. Our model assumes that test seropositivity correlates with natural immunity. Research is ongoing to validate this. If US seroprevalence continues to rise, then minimum vaccine coverage levels required will decrease.

[3] Assumes that vaccine will be given to entire population, regardless of whether they have had COVID-19.

Source: Moderna; Pfizer; SeroTracker; US Census Bureau

then coverage of about 60 to 80 percent of the population will be needed for herd immunity. And if a vaccine is only 50 percent effective at reducing transmission, coverage of over 90 percent would be required (Exhibit 3).

Wide variations in local seroprevalence suggest heterogeneous paths to herd immunity

Improved estimates of seroprevalence are increasingly available for many regions. They vary widely, from as low as 1 to 2 percent in some states like Colorado and Kansas to 14 to 20 percent in New Jersey and New York.[13] Because achieving herd immunity relies in part on a population's natural immunity, it appears that some locations are closer to herd immunity than others (and have likely also experienced worse impact on public health to date). Based on a range of likely vaccine scenarios and the fact that those with prior exposure to SARS-CoV-2 will still be eligible for vaccination, every ten- percentage-point increase in seroprevalence could roughly translate into a one-month acceleration of the timeline to the epidemiological endpoint.

However, it is possible that areas with higher seroprevalence may also have higher thresholds for herd immunity, because their populations may mix more,[14] which could have contributed to higher seroprevalence to begin with. If that's true, then while they are further along, they may also have further to go. Well-executed distribution of effective vaccines will still be paramount.

Potentially shorter duration of immunity could prolong the path to the 'end'

Earlier in the pandemic, it was unclear how long immunity after COVID-19 infection would last. Duration of immunity matters, obviously; for instance, our modeling suggests that if natural immunity to COVID-19 lasts six to nine months, as opposed to multiple years (like tetanus) or lifelong (like measles), herd immunity is unlikely to be achieved unless adult vaccination rates approach 85 percent. While COVID-19 reinfection is documented but rare, there are now population-level studies that question the durability of immunity. Antibody levels may wane after just two months, according to some studies, while a United Kingdom population-monitoring effort reported that antibody prevalence fell by 26 percent over three months.[15] The relationship between waning antibodies and reinfection risk remains unclear. Other research suggests that even with waning levels of COVID-19 antibodies, the immune system may still be able to mount a response through other specific B-cell and T-cell immune pathways, where emerging evidence shows much greater durability after six months.[16]

Manufacturing and supply issues are clearer, but have not vanished

If the initial efficacy data from the Pfizer and Moderna vaccine trials hold up, and if no significant safety issues emerge, then initial demand is likely to be high. Two promising candidates are better than one, but supplies will undoubtedly be constrained in the months following EUA and approval. The situation may be dynamic as vaccines are approved at different times, each with its own considerations in manufacturing and distribution. For example, current data suggest that Moderna's vaccine is stable at refrigerated temperatures (2 to 8 degrees Celsius) for 30 days and six months at –20 degrees Celsius. Pfizer's vaccine can be stored in conventional freezers for up to five days, or in its custom shipping coolers for up to 15 days with appropriate handling. Longer-term storage requires freezing at –70 degrees Celsius, requiring special equipment.[17] Both Pfizer's and Moderna's would be two-dose vaccines, necessitating rigorous follow-up for series completion. These and other complexities create risk of delay. Timelines to reach the desired coverage threshold will be affected by health systems' abilities to adapt to changing needs and updated information.

The pandemic's end is more certain, and may be a little nearer

Given all of these variables, where do we net out?

While the winter of 2020/2021 in the Northern Hemisphere will be challenging, we are likely to see mortality rates fall in Q2 (or possibly late Q1) of 2021. Seasonality and associated changes in behavior will begin to work again in our favor in the spring, and the combination of early doses of vaccines targeted to those at highest risk (and the benefits of the Pfizer and Moderna vaccines in reducing severe disease), advances in treatment, expanded use of diagnostics, and better implementation of public-health measures should serve to significantly reduce deaths from COVID-19 in the second quarter. At this stage, when monthly mortality from COVID-19 may start to resemble that of flu in an average year, we may see a transition toward normalcy, albeit with public-health measures still in place.

We are as excited as others about the stunning developments in vaccines. We think Q3 or Q4 of 2021 are even more likely to see herd immunity in the United States. This is based on EUA of one or more high-efficacy vaccines in December 2020 or January 2021, as manufacturers are targeting[18]; distribution to people at highest risk (healthcare workers, the elderly, and those with comorbidities) in the early months of 2021[19]; full approval of a vaccine in March or April; and then widespread rollout. Our estimates of three to eight months for manufacturing, distribution, and adoption of sufficient vaccine doses

to achieve herd immunity remain unchanged, and suggest that the milestone may be reached between July and December 2021.

Recent developments suggest that herd immunity is less likely to come in early 2021, given that vaccines are arriving roughly on the expected timeline; and the downside scenario stretching into 2022 is also less likely, since efficacy is clearer. The new vaccines may slightly accelerate the timeline—the ongoing surge in cases will likely continue into winter, which would increase natural immunity levels going into Q2. Further, higher-than-expected efficacy may help offset coverage challenges that surveys have suggested. Those two factors could advance the timeline and make Q3 a little more likely than Q4.

Our estimate is based on the widest possible reading of the current scientific literature and our discussions with public-health experts in the United States and around the world. It's possible that unforeseen developments such as significantly more infections than expected this winter could lead to earlier herd immunity. And real downside risk remains, especially with respect to duration of immunity and long-term vaccine safety (given the limited data available so far). Herd immunity might not be reached until 2022 or beyond.

Even when herd immunity is achieved, ongoing monitoring, potential revaccination, and treatment of isolated cases will still be needed to control the risk of COVID-19. But these would fall into the category of "normal" infectious disease management—not the society-altering interventions we have all lived through this year. The short term will be hard, but we can reasonably hope for an end to the pandemic in 2021.

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SELECTED QUOTES FROM 2020

Partnerships, value-based care, and integration

We have not been as intentional about strategic partnerships as I think we could (and should) be here. To create a better experience for the patient, this could be a technology partnership. It could be a payer partnership. It could be a vendor partnership. It could be an educational partnership, even a government partnership.

Sam Hazen
CEO, HCA Healthcare

Jessica Tan
Co-CEO, Ping An Group

Some companies may look at the short term and focus on making their money from selling drugs or medication. We want to be a long-term healthcare player, and to do that we have to look at the whole healthcare ecosystem. Our competitiveness will improve as the structure of the industry changes.

What I see health systems doing is not employing physicians, but recruiting physicians into their clinically integrated networks, where they're managing the relationships with the payers [and] the contract providing the services, that a small physician office can't do on their own.

Allen Karp
Executive Vice President of Healthcare Management and Transformation, Horizon BCBSNJ

The math of ACOs

Michael Chernew, Rachel Groh, David Nuzum, and Nikhil Sahni

Several factors will shape the financial performance of physician- and hospital-led organizations under total cost of care payment models.

Introduction

Broad consensus has long existed among public- and private-sector leaders in US healthcare that improvements in healthcare affordability will require, among other changes, a shift away from fee-for-service (FFS) payments to alternative payment models that reward quality and efficiency. The alternative payment model that has gained broadest adoption over the past ten years is the accountable care organization (ACO), in which physicians and/or hospitals assume responsibility for the total cost of care for a population of patients.

Launched by the Centers for Medicare & Medicaid Services (CMS) Innovation Center in 2012, Pioneer ACO was the first such model design to generate savings for Medicare. In this incarnation, Medicare set a benchmark for total cost of care per attributed ACO beneficiary: If total cost of care was kept below the benchmark, ACOs were eligible to share in the implied savings, as long as they also met established targets for quality of care. If total cost of care exceeded the benchmark, ACOs were required to repay the government for a portion of total cost of care above the benchmark.

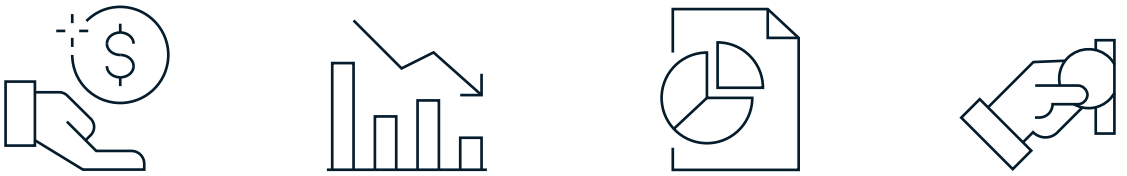
Payment models similar to the one adopted by Pioneer ACOs also have been extended to other Medicare ACO programs, with important technical differences in estimates for savings and rules for the distribution of savings or losses as well as some models offering gain sharing without potential for penalties for costs exceeding the benchmark. State Medicaid programs as well as private payers (across Commercial, Medicare Advantage, and Medicaid Managed Care) also have adopted ACO-like models with similar goals and payment model structures. Of the roughly 33 million lives covered by an ACO in 2018, more than 50 percent were commercially insured and approximately 10 percent were Medicaid lives.[1]

On the whole, ACOs in the Medicare Shared Savings Program (MSSP) have delivered high-quality care, with an average composite score of 93.4 percent for quality metrics. However, cost savings achieved by the program have been limited: ACOs that entered MSSP during the period from January 1, 2012 to December 31, 2014, were estimated to have reduced cumulative Medicare FFS spending by $704 million by 2015; after bonuses were accounted for, net savings to the Medicare program were estimated to be $144 million.[2] Put another way, in aggregate, savings from Medicare ACOs in 2015 represented only 0.02 percent of total Medicare spending. The savings achieved were largely concentrated among physician-led ACOs (rather than hospital-led ACOs). In fact, after accounting for bonuses, hospital-led ACOs actually had *higher* total Medicare spending by $112 million on average over three years.[3]

While savings from MSSP have been relatively limited, in aggregate, numerous examples exist of ACOs that have achieved meaningful savings—in some cases in excess of 5 percent of total cost of care—with significant rewards to both themselves as well as sponsoring payers (for example, Millennium, Palm Beach, BCBSMA AQC).[4-6] The wide disparity of performance among ACOs (and across Medicare, Medicaid, and Commercial ACO programs) raises the question of whether certain provider organizations are better suited than others to succeed under total cost of care arrange-

Exhibit 1

The equation for the math of ACOs.



ACO, accountable care organization.

ments, and whether success is dictated more by ACO model design or by structural characteristics of participating providers.

In the pages that follow, we examine these questions in two ways. First, we analyze "the math of ACOs" by isolating four factors that contribute to overall ACO profitability: bonus payments, "demand destruction," market share gains, and operating expenses. Following these factors, we illustrate the math of ACOs through modeling of the performance of five different archetypes: physician-led ACOs; hospital-led ACOs with low ACO penetration and low leakage reduction; hospital-led ACOs with high ACO penetration; hospital-led ACOs with high leakage reduction; and hospital-led ACOs with high penetration and leakage reduction.

The math of ACOs

In the pages that follow, we break down "the math of ACOs" into several key parameters, each of which hospital and physician group leaders could consider evaluating when deciding whether to participate in an ACO arrangement with one or more payers. Specifically, we measure the total economic value to ACO-participating providers as the sum of four factors: bonus payments, less "demand destruction," plus market share gains, less operating costs for the ACO (Exhibit 1).

In the discussion that follows, we examine each of these factors and understand their importance to the overall profitability of ACOs, using both academic research as well as McKinsey's experience advising and supporting payers and providers participating in ACO models.

1. BONUS PAYMENTS

The premise of ACOs rests on the opportunity for payers and participating providers to share in cost savings arising from curbing unnecessary utilization and more efficient population health management, thus aligning incentives to control total cost of care. Because ACOs are designed to reduce utilization, the bonus—or share of estimated savings received by an ACO—is one factor that significantly influences ACO profitability and has garnered the greatest attention both in academic research and in private sector negotiations and deliberations over ACO participation. Bonus payments made to ACOs are themselves based on several key design elements:

(a) The **baseline and benchmark** for total costs, against which savings are estimated[7];

(b) The **shared savings rate and minimum savings/loss rates**;

(c) **Risk corridors**, based on caps on gains/losses and/or "haircuts" to benchmarks; and,

(d) **Frequency of rebasing**, with implications for benchmark and shared savings.

1a. Baseline and benchmark

Most ACO models are grounded in a historical **baseline** for total cost of care, typically on the population attributed to providers participating in the ACO. Most ACO models apply an annual **trend rate** to the historical baseline, in order to develop a **benchmark** for total cost of care for the performance period. This benchmark is then used as the point of reference to which actual costs are compared for purposes of determining the bonus to be paid.

Historical baselines may be based either on one year or averaged over multiple years in order to mitigate the potential for a single-year fluctuation in total cost of care that could create an artificially high or low point of comparison in the future. Trend factors may be based on historically observed growth rates in per capita costs, or forward-looking projections, which may depart from historical trends due to changes in policy, fee schedules, or anticipated differences between past and future population health. Trend factors may be based on national projections, more market-specific projections, or even ACO-specific projections. For these and other reasons, a pre-determined benchmark may not be a good estimate of what total cost of care would have been in the absence of the ACO. As a result, estimated savings, and hence bonuses, may not reflect the true savings generated by ACOs if compared to a rigorous assessment of what otherwise would have occurred.

Recent research suggests that an ACO's benchmark should be set using trend data from providers in similar geographic areas and/or with similar populations instead of using a national market average trend factor.[8] It has been observed in Medicare (and other) populations that regions (and therefore possibly ACOs) that start at a lower-than-average cost base tend to have a higher-than-average growth trend. For example, Medicare FFS spending in low-cost regions grew at a rate 1.2 percentage points faster than the national average (2.8 percent and 1.6 percent from 2013 to 2017 compound annual growth rate, respectively). This finding is particularly relevant in low-cost rural communities, where healthcare spending grows faster than the national average.[9] Based on this research, some ACO models, such as MSSP and the Next Generation Medicare ACO model, have developed benchmarks based on blending ACO-specific baselines with market-wide baselines. This approach is intended to account for the differences in "status quo" trend, which sponsoring payers may project in the absence of ACO arrangements or associated improvements in care patterns. Some model architects have advocated for this provider-market blended approach to benchmark development because they believe such an approach balances the need to reward providers who improve their own performance with a principle tenet of this model: That ACOs within a market should be held accountable to the same targets (at least in the long term).

1b. Shared savings rate (and minimum savings/loss rates)

The shared savings rate is the percentage of any estimated savings (compared with benchmark) that is paid to the ACO, subject to meeting any requirements for quality performance. For example, an ACO with a savings rate of 50 percent that outperforms its benchmark by 3 percent would keep 1.5 percent of benchmark spend. Under the array of Medicare ACO models, the shared savings rate percentage ranges anywhere from 40 percent to 100 percent.[10]

In some ACO models, particularly one-sided gain sharing models that do not introduce downside risk, payers impose a minimum savings rate (MSR), which is the savings threshold for an ACO to receive a payout, typically 2 percent, but can be higher or lower.[11] For example, assume ACO Alpha has a savings rate of 60 percent and MSR of 1.5 percent. If Alpha overperforms the benchmark by 1 percent, there would be no bonus payout, because the total savings do not meet or exceed the MSR. If, however, Alpha overperforms the benchmark by 3 percent, Alpha would receive a bonus of 1.8 percent of benchmark (60 percent of 3 percent). An MSR is common in one-sided risk agree-

ments to protect the payer from paying out the ACO if modest savings are a result of random variations. ACOs in two-sided risk arrangements may often choose whether to have an MSR.

Both factors impact the payout an ACO receives. Between 2012 and 2018, average earned shared savings for MSSP ACOs were between $1.0 million and $1.6 million per ACO (between $10 and $100 per beneficiary).[12] However, while nearly two out of three MSSP ACOs in 2018 were under benchmark, only about half of them (37 percent of all MSSP ACOs) received a payout due to the MSR.[13]

1c. Risk corridors

In certain arrangements, payers include clauses that limit an ACO's gains or losses to protect against extreme situations. Caps depend on the risk-sharing agreement (for example, one-sided or two-sided) as well as the shared savings/loss rate. For example, MSSP Track 1 ACOs (one-sided risk sharing) cap shared savings at the ACO's share of 10 percent variance to the benchmark, while Track 3 ACOs (two-sided risk sharing) cap shared savings at the ACO's share of 20 percent variance to the benchmark and cap shared losses at 15 percent variance to the benchmark.[14] In contrast with these Medicare models, many Commercial and Medicaid ACO models have applied narrower risk corridors, with common ranges of 3 to 5 percent. In our experience, payers have elected to offer narrower risk corridors. Their choice is based on their desire to mitigate risk as well as the interest of some payers (and state Medicaid programs) to share in extraordinary savings that may be attributable in part to policy changes or other interventions undertaken by the payers themselves, whether in coordination with ACOs or independent of their efforts.

Payers also may vary the level of shared savings (and/or risk), between that which applies to the first dollar of savings (versus benchmark) compared with more significant savings. For example, by applying a 1 percent adjustment or "haircut" to the benchmark, a payer might keep 100 percent of the first 1 percent of savings and share any incremental savings with the ACO at a negotiated shared savings rate. Depending on what higher shared savings rate may be offered in trade for the "haircut," such a structure has the potential to increase the incentive for ACOs to significantly outperform the benchmark. For example, an ACO that beats the benchmark by 4 percentage points and earns 100 percent of savings after 1 percentage point would net 75 percent of total estimated savings. However, under the same risk model, if the ACO were to beat the benchmark by 2 percentage points, they would only earn 50 percent of total savings. Such a structure could therefore be either more favorable or less favorable than 60 percent shared savings without a "haircut," depending on the ACO's anticipated performance.

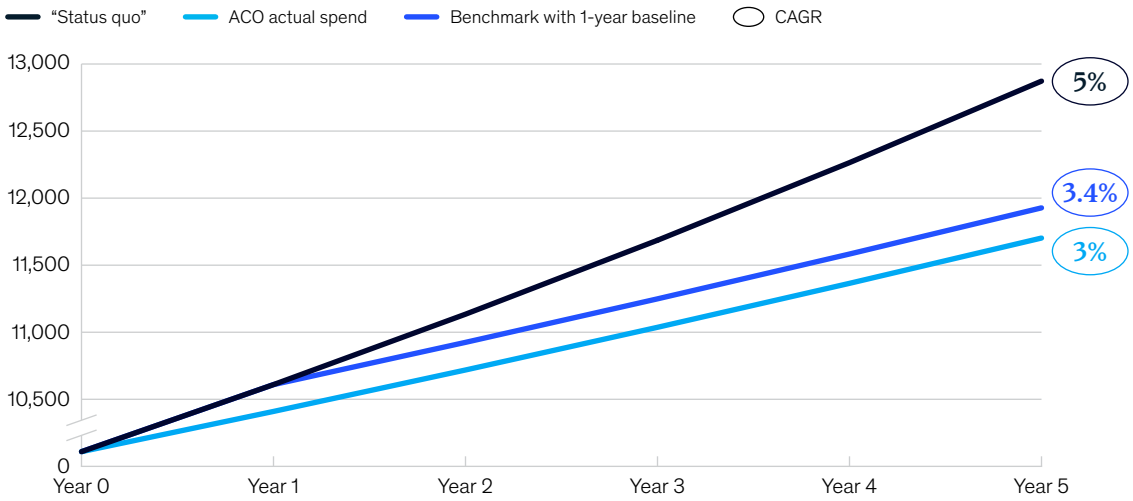
1d. Frequency of rebasing

In most ACO models (including those adopted by CMS for the Medicare FFS program), the ACO's benchmark is reset for each performance period based (at least in part) on the ACO's performance in the immediate prior year. This approach is commonly referred to as "rebasing." The main criticism of this approach toward ACO model design—which is also evident in capitation rate setting for Managed Care Organizations—is that ACOs become "victims of their own success": Improvements made by the ACO in one year lead to a benchmark that is even harder to beat in the following year. The corollary is also true: An ACO with "excessive" costs in Year 1 may be setting themselves up for significant shared savings in Year 2 simply by bringing their performance back to "normal" levels.

Even in situations where ACOs show steady improvements in management of total cost of care over several years, the "ratchet" effect of rebasing can have significant implications for the share of estimated savings that flow to the ACO. Exhibit 2 illustrates the shared savings that would be captured by an ACO, if it were to mitigate trend by 2 percentage points consistently for five years (assumes linear growth), under a model that provides 50 percent shared savings against a benchmark that is set with annual rebasing. In this scenario, al-

Exhibit 2

The per-member per-year cost over five years after becoming an ACO.



ACO, accountable care organization; CAGR, compound annual growth rate.

though the ACO would earn 50 percent of the savings estimated in any one year (against benchmark), the ACO would derive only 16 percent of total savings achieved relative to a "status quo" trend.

Some ACO model designs (including MSSP) have mitigated this "ratchet" effect, to some extent, by using **multi-year baselines**, whereby the benchmark for a given performance year is based not on the ACO's baseline performance in the immediate prior year but over multiple prior years. This approach smooths out the effect of one-year fluctuations in performance on the benchmark for subsequent years; by implication, improvements made by an ACO in Year 1 and sustained in Year 2 create shared savings in both years. Under a three-year baseline, weighted toward the most recent year 60/30/10 percent (as applies to new contracts under the MSSP), the ACO in Exhibit 2 would capture 22 percent of total estimated savings over five years. If the model were instead to adopt an evenly weighted three-year baseline, that same ACO would capture 28 percent over five years.

In select cases, particularly in the Commercial market, payers and ACOs have agreed to **multi-year prospective benchmarks**. Under this approach, the benchmark for performance Years 1 to 5 (for example) are set prospectively in Year 0; the benchmarks for Years 2 and 3, for example, are not impacted by the ACO's performance in Year 1. If this approach were to be applied to the ACO depicted in Exhibit 2, they would earn fully 50 percent of the total savings, assuming that the prospectively established five-year benchmark was set at the "status quo" trend line. While prospective multi-year benchmarks may be more favorable to ACOs, they also increase the sensitivity of ACO performance to both the original baseline as well as the reasonableness of the prospectively applied trend rate.

Key takeaways

While in many cases healthcare organizations are highly focused on the percent of shared savings they will receive (shared savings rate), in our experience, the financial sustainability of ACO arrangements may be equally or more greatly affected by several other design parameters outlined here, among them: the inclusion of an MSR or a "haircut" to benchmark, either of which may dampen the incentive to perform; benchmark definitions including the use of provider-specific, market-specific, and/or national baseline and trend factors;

and the frequency of rebasing, as implied by the use of a single-year or multi-year baseline, or the adoption of prospectively determined multi-year benchmarks.

2. DEMAND DESTRUCTION

Although shared savings arrangements are meant to align providers' incentives with curbing unnecessary utilization, the calculation of bonus payments based on avoided claims costs (as described in Section 1 starting on p. 100) does not account for the foregone provider revenue (and margins) attached to reductions in patient volume. The economic impact of this reduction in patient volume, sometimes referred to as "demand destruction," is described in this section, which we address in two parts:

(a) **Foregone economic contribution** based on reduced utilization in the ACO population; and,

(b) **Spillover effects** from reduced utilization in the non-ACO population, based on clinical and operational changes that "spillover" from the ACO population to the non-ACO population.

2a. Foregone economic contribution

Claims paid to hospital systems for inpatient, outpatient, and post-acute facility utilization typically comprise 40 to 70 percent of total cost of care, with hospital systems that own a greater share of outpatient diagnostic lab and/or imaging and/or skilled nursing beds falling at the upper end of this range. These same categories of facility utilization may comprise 60 to 80 percent of reductions in utilization arising from improvements in population health management by an ACO. Given the high fixed costs (and correspondingly high gross margins) associated with inpatient, outpatient, and post-acute facilities, foregone facility volume could come at an opportunity cost of 30 to 70 percent of foregone revenue—that opportunity cost being the gross contribution margin associated with incremental patient volume, calculated as revenue less variable costs: Commercially insured ACO populations are more likely to fall into the upper end of this range and Medicaid populations into the lower end. This is the reason savings rates tend to be higher in the Commercial market, to offset the larger (negative) financial impact of "demand destruction."

For example, a hospital-led ACO that mitigates total cost of care by 3 percent (or $300 based on a benchmark of $10,000 per capita) might forego $180 to $240 of revenue per patient (assuming 60 to 80 percent of savings derived from hospital services), which may represent $90 to $120 in foregone economic contribution, assuming 50 percent gross margins. As this example shows, this foregone economic contribution may represent a significant offset to any bonus paid under shared savings arrangements, unless the shared savings percentage is significantly greater than the gross margin percentage for foregone patient revenue.

For some hospitals that are capacity constrained, the lost patient volume may be replaced (that is, backfilled) with additional patient volume that may be more or less profitable depending on the payer (for example, an ACO that backfills with more profitable Commercial patients). However, the vast majority of hospitals are not traditionally capacity constrained and therefore must look to other methods (for example, growing market share) to be financially sustainable.

In contrast, physician-led ACOs have comparatively little need to consider the financial impact of "demand destruction," given that they never benefitted from hospitalizations and thus do not lose profits from forgone care. Furthermore, primary care practices may actually experience an increase, rather than decrease, in patient revenue, based on more effective population health management. Even for multi-specialty physician practices that sponsor ACO formation, any reductions in patient volume arising from the ACO may have only modest impact on practice profitability due to narrow contribution margins attached to incremental patient volume. Physician-led ACOs may need to be concerned with "demand destruction" only to the extent that a disproportionate share of savings

Exhibit 3

The spillover effects in non-ACO populations.

Population studied	Impact of spillover effects	Source
Explored effect of Medicare HMO penetration on healthcare spending of Medicare FFS enrollees between 1994–2001	0.7–0.8% reduction in FFS spend associated with every 1% increase in Medicare HMO enrollment	Chernew M et al., "Managed care and medical expenditures of Medicare beneficiaries," *J Health Econ*, 2008
Explored effect of BCBS of Massachusetts' Alternative Quality Contract (AQC)—an early commercial ACO initiative on beneficiaries not covered by AQC (3 years before and 2 years after ACQ entry)	3.4% reduction in spend (~$400 annually) per FFS beneficiary in Year 2; no significant decrease in spending in Year 1	McWilliams JM et al., "Changes in health care spending and quality for Medicare beneficiaries associated with a commercial ACO contract," *JAMA*, 2013
Explored effect of Medicare Advantage program on the traditional Medicare program nationwide, from 1997–2009	While greater managed care penetration is not associated with fewer hospitalizations, it is associated with lower costs and shorter stays per hospitalization. These spillovers are substantial.	Baicker K et al., "The spillover effects of Medicare managed care: Medicare Advantage and hospital utilization," *J Health Econ*, 2013

ACO, accountable care organization; FFS, fee for service; HMO, health maintenance organization.

is derived from reductions in practice-owned diagnostics or other high-margin services; however, the savings derived from such sources are typically smaller than reductions in utilization for emergency department, inpatient, and post-acute facility utilization.

2b. Spillover effects

Though ACOs are not explicitly incentivized to reduce total cost of care of their non-ACO populations (including FFS), organizations often see increased efficiency across their full patient population after becoming an ACO. For example, research over the last decade has found reductions in spend for non-ACO lives between 1 and 3 percent (Exhibit 3).

The impact of spillover effects on an ACO's profitability depends on the proportion of ACO and non-ACO lives that comprise a provider's patient panel. Further, impact also depends on the ACO's ability to implement differentiated processes for ACO and non-ACO lives to limit the spillover of the efficiencies. Although conventional wisdom implies that physicians will not discriminate their clinical practice patterns based on the type of payer (or payment), nonetheless many examples exist of hospitals and other providers with the ability to differentiate processes based on payer or payment type. For example, many hospitals deploy greater resources to discharge planning or initiate the process earlier for patients reimbursed under a Diagnosis Related Group (case rate) than for those reimbursed on a per diem or percent of charges model. Moreover, ACOs and other risk-bearing entities routinely direct care management activities disproportionately or exclusively toward patients for whom they have greater financial accountability for quality and/or efficiency. For physician-led ACOs, differentiating resource deployment between ACO- and non-ACO populations may be necessary to achieve a return on investment for new care management or other population health management activities. For hospital sponsors of ACOs that continue to derive the majority of their revenue from FFS populations outside the ACO, differentiating population health management efforts across ACO and FFS populations are of paramount importance to overall financial sustainability. To the extent that hospital-led ACOs are unable to do so, they may find total cost of care financial arrangements to be financially sustainable only if extended to the substantial majority of their patient populations in order to reduce the severity of any spillover effects.

Key takeaways

The adverse impact of "demand destruction" is what most distinguishes the math of hospital-led ACOs from that of physician-led ACOs. The structure of ACO-sponsoring hospitals—whether they own post-acute assets, for example—further shapes the severity of demand destruction, which then provides a point of reference for determining what shared savings percentage may be necessary to overcome the impact of demand destruction. Though in the long term, hospitals may be able to right size capacity, in the near term when deciding to become an ACO, there is often limited ability to alter the fixed-cost base. Finally, the extent of "spillover effects" from the ACO to the non-ACO population further impacts the financial sustainability of hospital-led ACOs. Hospital-led ACOs can seek to minimize the impact through 1) differentiating processes between the two populations, and/or 2) transitioning the substantial majority of their patient population into ACO arrangements.

3. MARKET SHARE GAINS

Providers can further improve profitability through market share gains, specifically:

(a) **Reduced system leakage** through improved alignment of referring physicians across both ACO and non-ACO patients; and,

(b) **Improved network status** as an ACO.

3a. Reduced system leakage

ACOs can grow market share by coordinating patients within the system (that is, reduce leakage) to better manage total cost of care and quality. This coordination is often accomplished by improving the provider's alignment with the referring physician; for example, ACOs can establish a comprehensive governance structure and process around network integrity, standardize the referral process between physicians and practices, and improve physician relationships within, and with awareness of, the network. Furthermore, ACOs can develop a process to ensure that a patient schedules follow-up appointments before leaving the physician's office, optimizing the scheduling system and call center.

Stark Laws (anti-kickback regulations) have historically prevented systems from giving physicians financial incentives to reduce leakage. While maintaining high-quality standards, ACOs are given a waiver to this law and therefore are allowed to pursue initiatives that improve network integrity to better coordinate care for patients. In our experience, hospitals generally experience 30 to 50 percent leakage (Exhibit 4), but ACOs can improve leakage by 10 to 30 percent.

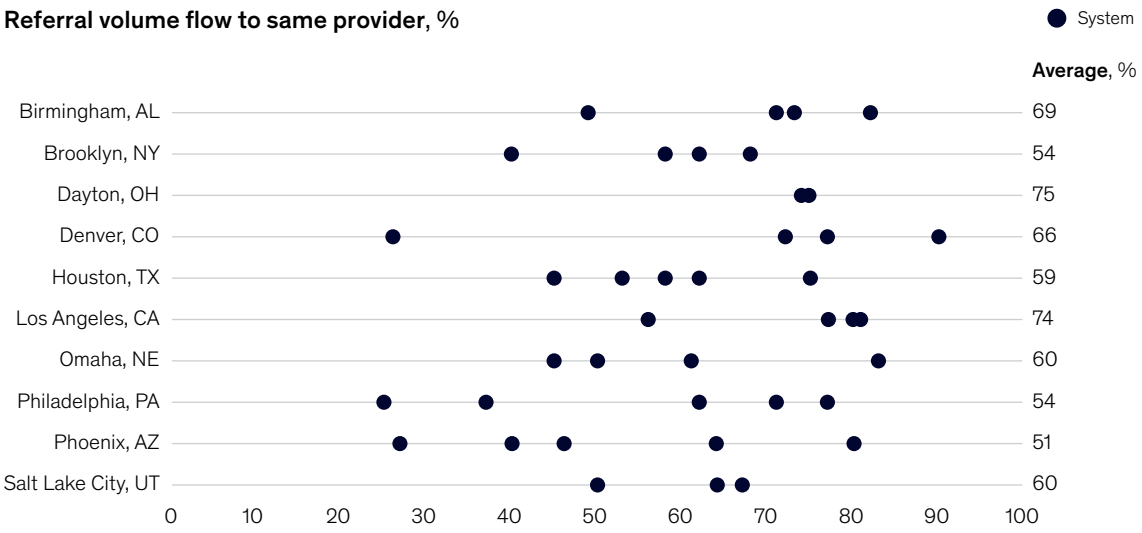
3b. Improved network status

In some instances for Commercial payers, an ACO may receive preferential status within a network by entering into a total cost of care arrangement with a payer. As a result, the ACO would see greater utilization, which will improve profitability. For example, in 2012, the Cooley Dickinson Hospital (CDH) and Cooley Dickinson Physician Hospital Organization, a health system in western Massachusetts with 66 primary care providers and 160 specialists, joined Blue Cross Blue Shield of Massachusetts' (BCBSMA) Alternative Quality Contract (AQC), which established a per-patient global budget to cover all services and expenses for its Commercial population. As a result of joining the AQC, reducing the prices charged for services, and providing high quality of care, CDH was "designated as a high-value option in the Western Mass. Region," which meant BCBSMA members with certain plans "[paid] less

The adverse impact of "demand destruction" is what most distinguishes the math of hospital-led ACOs from that of physician-led ACOs.

Exhibit 4

The network integrity across ten US metro areas.



Note: In this analysis, network integrity captures what portion of a specialist's referrals are to his/her affiliated facility, either for inpatient or outpatient procedures (eg, cardiac surgery in hospital, endoscopy in ambulatory surgical center). The referral patterns between specialists and hospitals in the ten US metro areas were identified through analyzing over 3.6 billion submitted Medicare and Commercial claims from 2017 through Q1 2019, representing 35% of US professional and facility claims.

out-of-pocket when they [sought] care" at CDH.[15] Other payers have also established similar mutually beneficial offerings to providers who assume more accountability for care.[16,17] An ACO can benefit from these arrangements up until most or all other provider systems in the same market join.

Key takeaways

These factors to improve market share (at lower cost and better quality) can help an ACO compensate for any lost profits from "demand destruction" (foregone profits and spillover effects) and increased operating costs. The opportunity from this factor, which requires initiatives that focus on reducing leakage, can be the difference between a net-neutral hospital-led ACO and a significantly profitable ACO. An example initiative would be performance management systems that analyze physician referral patterns.

4. OPERATING COSTS

Finally, profitability is impacted by operating costs or any additional expenses associated with running an ACO. These costs generally are lower for physician-led ACOs than for hospital-led ACOs (and also depend on buy-versus-build decisions). In our experience, operating costs to run an ACO vary widely depending on the provider's operating model, cost structure (for example, existing personnel, IT capabilities), and ACO patient population (for example, number and percent of ACO lives). However, we will focus on three specific types of costs:

(a) **Care management costs**, often variable, or a marginal expense for every life;

(b) **Data and analytics operating costs**, which can vary widely depending on whether the ACO builds or buys this capability; and

(c) **Additional administrative costs**, which are fixed or independent of the number of lives.

4a. Care management costs

In our experience, care management costs to operate an ACO range from 0.5 to 2.0 percent of total cost of care for a given ACO population. These care management costs include ensuring patients with chronic conditions are continuously managing those conditions and coordinating with physician teams to improve efficacy and efficiency of

care. A core lever of success involves reducing use of unnecessary care. ACOs that spend closer to 2 percent and/or those whose efforts focus on expanding care coordination for high-risk patients struggle to achieve enough economic contribution to break even. This is because care coordination (devoting more resources to testing and treating patients with chronic disease) often does not have a positive return on investment.[18] ACOs that do this effectively and ultimately spend less on care management (around 0.5 percent of the total cost of care) tend to create value primarily through curbing unnecessary utilization and steering patients toward more efficient facilities rather than managing chronic conditions. This value creation is particularly true for Commercial ACO contracts, where there is greater price variation across providers compared with Medicare and Medicaid contracts, where pricing is standardized.

4b. Data and analytics operating costs
Data and analytics operating costs are critical to supporting ACO effectiveness. For example, high-performing ACOs prioritize data interoperability across physicians and hospitals and constantly analyze electronic health records and claims data to identify opportunities to better manage patient care and reduce system leakage. ACOs can either build or license data and analytics tools, a decision that often depends on the number of ACO lives. In our experience, an ACO that decides to build its own data and analytics solutions in-house will on average invest around $24 million for upfront development, amortized over eight years for $3 million per year, plus $6 million in annual costs (for example, using data scientists and analysts to generate insights from the data), for a total of $9 million per year. Alternatively, ACOs can license analytics software on a per-patient basis, typically costing 0.5 to 1.5 percent of the total cost of care. Thus, we find the breakeven point at around 100,000 covered ACO lives; therefore, it often makes financial sense for ACOs with more than 100,000 lives to build in-house.

4c. Additional administrative costs
Organizations must also invest in personnel to operate an ACO, typically including an executive director, head of real estate, head of care management, and lawyers and actuaries. The ACO leadership team's responsibilities often include setting the ACO's strategy (for example, target markets, lines of business, services offered, through which physicians and hospitals) and developing, managing, and communicating with the physician network to support continuity of care.

Key takeaways
Operating costs to run an ACO are significant. Ability to find ways to invest in fixed costs that are more transformational in nature may result in lower near-term profitability but can provide a greater return on investment in the long term both for the ACO and the rest of the system. The decision to make these investments is dependent on the number of lives covered by an individual ACO.

ACO archetypes

Drawing on the analysis outlined above, we conducted scenario modeling of "the math of ACOs" using five different ACO archetypes, which vary in structure and performance under a common set of rules. These five archetypes include:

1. Typical physician-led ACO
2. Hospital-led ACO with low ACO penetration and low leakage reduction
3. Hospital-led ACO with high ACO penetration
4. Hospital-led ACO with high leakage reduction
5. Hospital-led ACO with high leakage reduction and high ACO penetration

Subsequently, taking an ACO's structure as a given, we describe for each ACO archetype the key model design parameters and other strategic and operational choices that ACOs might make to maximize their performance.

Comparision of archetypes based on scenario modeling

Summarizing the four factors, the profitability of each archetype reveals certain insights (Exhibit 5).

In a situation with only 25 percent of lives in the ACO, Scenario 2 (one-sided hospital-led ACO) compared with Scenario 4 (two-sided hospital-led ACO with high leakage reduction) highlights the importance of the shared savings rate (over $15 million) and managing leakage (over $30 million). Individually, each of these factors will bring the hospital-led ACO to (nearly) break even, but for a hospital-led ACO to function without concern of yearly fluctuations, both factors must be addressed.

As scale increases though, so does the profitability of participating in an ACO, as seen between Scenarios 2 and 3, which are the same except for the increase in a hospital's covered lives from 25 percent to 80 percent. While the operating expenses are also greater, the bonus payments offset those necessary investments. Scenario 5 further shows the impact of also managing leakage, the value of which increases proportionally with the number of covered lives. All the hospital paths show how focusing only on the bonus payment, and not accounting for "demand destruction" and operating expenses, can lead to an incomplete view of the economic impact of becoming an ACO.

Conclusion

Based on ACO results published to date, physician-led ACOs generally do better and are more profitable than their hospital counterparts. Thus, the real question we aimed to unpack is how can hospital-led ACOs adapt to be more profitable? We created a series of scenarios in an attempt to represent most hospitals in the United States and found four common themes:

— **Know the implications of your structure:** As our results show, hospitals that commit to ACOs—high savings rate from taking on two-sided risk and a large number of lives—will find it easier for the math to work. But making the commitment itself is not enough: A hard look needs to be taken at the internal and external structure, both of the hospital and affiliated network, as well as the local market, to understand the probability of success. A hospital can take certain broad actions, such as having the right organizational structure or owning the right assets, to increase the probability of success. However, certain factors are unchangeable but important to account for, such as geographic isolation.

— **Take a multi-year view:** When a hospital fully commits to becoming an ACO, it is essential to take a multi-year view. This view applies to major contract terms, such as aligning on the re-baselining method-

Exhibit 5

Five scenarios for organizations entering ACOs.

Description						ACO profitability equation, $M				
Path	Leader	ACO lives (% of total)	Risk-sharing arrangement	Savings rate, %	Percent leakage reduction,[1] %	Bonus payments ⊕	Demand destruction ⊕	Market share gains ⊕	Operating costs ⊜	Net contribution margin
1	Physician	100K (25%)	One-sided	50	0	15	4	0	–10	9
2	Hospital	100K (25%)	One-sided	50	0	15	–21	0	–10	–16
3	Hospital	320K (80%)	Two-sided	100	0	96	–36	0	–32	28
4	Hospital	100K (25%)	Two-sided	100	30	30	–21	30	–10	29
5	Hospital	320K (80%)	Two-sided	100	30	96	–36	96	–32	124

ACO, accountable care organization.
[1] From pre-ACO 50% network integrity.

Sidebar

Checklist for hospital-led ACOs

From these scenarios, we have uncovered a checklist that hospitals should review before transitioning to an ACO:

- How large an ACO are you planning to create? Are you really willing and able to go "all-in?"
- If you do not become an ACO, what is your alternative option (for example, status quo)?
- Can you manage "demand destruction" given your market structure? Will physicians change their behavior?
- Do you have the right assets to manage total cost of care? What additional capital investments will be needed?
- Is there wasteful spending across your current organization that could be "harvested" to increase profitability?
- How well developed are your core systems to manage an ACO population? What additional investments will you need to make?
- Can you negotiate financial terms that allow you to succeed over multiple years?

ology, as well as investments in programs to manage the concepts of "demand destruction" and to improve physician satisfaction.

- **Operationalize locally:** As hospitals develop new programs, they must avoid using "blunt" instruments and instead take a nuanced and personalized approach. While vendors of population health programs may offer off-the-shelf solutions, those capabilities need to be tailored to manage the profile of the covered lives under the ACO. Furthermore, pulling the same levers (for example, post-acute care) may be common place for all ACOs, but how it is done (for example, network optimization, owning assets) may differ based on the local market. Accounting for the local market will be important to effectively manage spillover effects, which our results show can be a critical difference between profitability and unprofitability.
- **Be smart about economies of scale when building infrastructure:** No one doubts the additional operating expenses involved in becoming an ACO. Yet it is important to be strategic about what to build versus what to buy. Many of the needed capabilities, such as analytics, have been developed and can be leveraged off-the-shelf through partnerships, vendor arrangements, and the like. Accessing these services can lessen the burden of high fixed costs to aid hospitals when they first decide to participate in an ACO.

The above themes help determine why it is important to "know who you are." Without access to all of these value levers and the ability to adjust each variable in the math equation, the success rate for a hospital-led ACO narrows significantly. Thus, not all hospitals are set up for success as an ACO, given the way ACOs currently operate. Completing a checklist of readiness (see Sidebar, above) that also contemplates timing of implementation is important to assess impact and the likelihood of success.

Likewise, for private and public payers, these findings should help identify potential modifications in ACO designs that will likely both increase the number of hospitals that could be successful and decrease the margin of error for a participating hospital to make programs more attractive. ACOs are important vehicles that can help the United States realize its healthcare spending goals, but they require further refinement to increase adoption and success.

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The next wave of healthcare innovation: The evolution of ecosystems

Zachary Greenberg, Basel Kayyali, Rob Levin, and Shubham Singhal

How healthcare stakeholders can win within evolving healthcare ecosystems.

Ecosystems create powerful forces that can reshape and disrupt industries.[1] In healthcare, they have the potential to deliver a personalized and integrated experience to consumers, enhance provider productivity, engage formal and informal caregivers, and improve outcomes and affordability.[2] We define an ecosystem as a set of capabilities and services that integrate value chain participants (customers, suppliers, and platform and service providers) through a common commercial model and virtual data backbone (enabled by seamless data capture, management, and exchange) to create improved and efficient consumer and stakeholder experiences, and to solve significant pain points or inefficiencies.

Healthcare has shifted away from its post-World War II focus on contagious disease and workplace accidents, which necessitated episodic interventions.[3] Today, the primary goal is preventing and effectively managing chronic conditions. However, as we have shown, productivity in healthcare is lagging other services industries as these goals shift.[4] New technologies promise care that is available nearby or at home, supports continuous self and autonomous care, and reduces friction costs between supporting stakeholders. These shifts create an imperative for stakeholders to move toward an ecosystem-based model of care enabled by five key industry forces driving technological innovation:

1. Longstanding industry inefficiencies are leading to affordability, outcome, and quality challenges, and poor consumer experience. These inefficiencies are not new and provide the fertile ground for innovation to deliver high returns.
2. High rates of healthcare technology investment are being realized. From 2014 to 2018, there have been more than 580 healthcare technology deals in the United States, each more than $10 million, for a total of more than $83 billion in value. They have been disproportionately focused on three main categories: patient engagement, data and analytics, and new care models.[5]
3. Technology giants are locked in a trillion-dollar battle to win share in the public cloud and to retain consumer “mindshare” and engagement. As a result, they are investing billions of R&D dollars into their platforms to create services easily usable by a range of customers and for a range of applications (for example, predictive analytics) that accelerate innovation. Additionally, certain partnerships or acquisitions, whether between pharmacy providers or health systems and technology companies, reflect increased integration, as well as rising concerns around patient privacy. Healthcare incumbents and new entrants have a huge opportunity to tap into this innovation to gain market share while improving the cost and quality of healthcare.

4. Proposed regulatory changes offer the potential for more integrated data sharing, and greater transparency for consumers. The Centers for Medicare & Medicaid Services (CMS) and the Office of the National Coordinator for Health Information Technology (ONC) are making changes to promote data sharing between healthcare organizations. These regulatory changes include interoperability of electronic health record (EHR) data and increased rate transparency for consumers and may help eliminate the data silos that have historically prevented end-to-end care analytics.
5. Healthcare industry incumbents increasingly are making large bets in acquiring capabilities that could advance their ecosystems. Payers, providers, healthcare services, and technology firms are acquiring assets to extend their data and analytics capabilities and engage with patients longitudinally, driving almost $40 billion in healthcare technology deals from 2014 to 2018.[6]

This white paper explores three main questions in further detail.

— What could the healthcare ecosystems of the future look like?

— What are the component layers that will form future healthcare ecosystems?

— How can healthcare stakeholders prepare for and act within healthcare ecosystems?

What could the healthcare ecosystems of the future look like?

Ecosystems have emerged across industries because they do the following:

— address industry inefficiencies, often by optimizing underutilized assets/resources or eliminating friction in consumer experience

— benefit from network effects, because as they grow, they create more value for suppliers (for example, gig drivers, app developers) and consumers alike

— own something in scarce supply that provides strategic leverage to the ecosystem operator

— use the data generated in the ecosystem (for example, purchase patterns, viewing behaviors) to tailor solutions for suppliers and consumers

— reduce likelihood to switching due to ease of use or structural advantages gained or generated in the ecosystem

Mature ecosystems exist across industries, with both technological disruptors and incumbents deriving value from these ecosystems. One example is Disney. Its robust ecosystem allows each component to positively reinforce the other. Disney launched its first movie in 1937, its first television series in 1954, and, by 2019, the streaming service Disney+. Its theme parks, such as Disney World, reinforce the brands of characters, allowing children and families to have engaging in-person experiences. Those children also ask for Disney toys, Disney apparel, and Disney games, creating a self-reinforcing experience within the ecosystem enabled by the control of a scarce resource—content—and the underlying data and analytics to best deliver it.[7]

The healthcare ecosystems of the future, like other ecosystems, will be centered on the consumer, in this case the patient. The capabilities and services that form the healthcare ecosystems of the future (illustrated in Exhibit 1) will include, but are not limited to:

— modalities of traditional care: direct care and pharmaceuticals administered by providers, across traditional sites of care

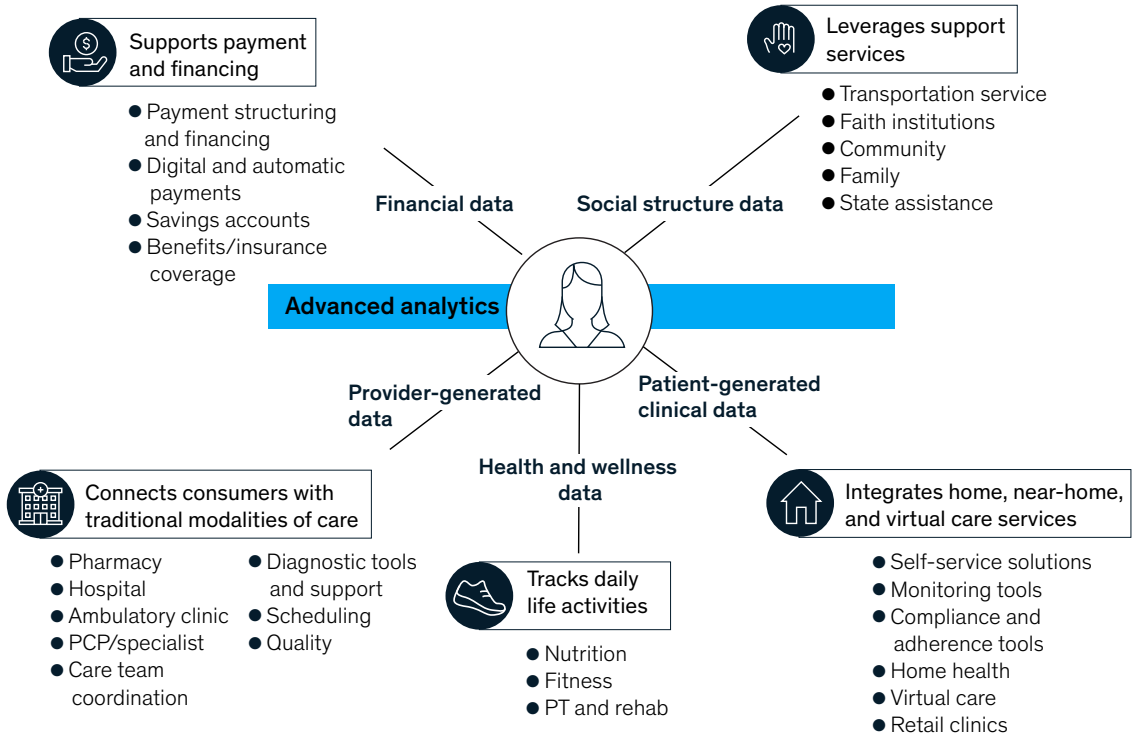
— home and self-care: patient engagement, self- and virtual care, remote monitoring, and traditional care that can increasingly be delivered near or in the home

— social care: social and community networks related to a patient's holistic health focused on community elements of unmet social needs

— daily life activities: patient actions and habits enabling wellness and health, including fitness and nutrition

Exhibit 1

Healthcare ecosystems of the future will be centered on the patient.



PCP, primary care physician; PT, physical therapy.

— financing support: operations and financial infrastructure supporting industry care events, including payment and financing solutions

Each of these capabilities and services contribute to the underlying data backbone and advanced analytics technologies. These capabilities maintain data integrity and enable insights from the ecosystem. These layers are further outlined in section 2 (starting on p. 115).

The healthcare ecosystems of the future will likely be defined by the needs of different patient populations and their associated effective care journeys (including beyond care itself). The consumer-oriented nature of these ecosystems also will increase the number of healthcare touchpoints, with the goal of modifying patient behavior and improving outcomes.

On one end of the spectrum, healthcare ecosystems will emerge to address the needs of healthy patients, who have less consistent medical challenges, but often set personal wellness goals. These patients will likely experience a more digital ecosystem, where patient data and insights are consumed in a highly personalized and meaningful way, such as with wearable devices. Only a small percentage of the touchpoints would be in modalities of traditional care.

At the other end of the spectrum, healthcare ecosystems will emerge to address the needs of patients who have multiple complex chronic conditions. For these patients, especially the Medicare and Medicaid dually eligible population, coordination between providers and services delivered virtually and in-person at or near the home becomes critical to the end-to-end experience. Technology components of these ecosystems will often be leveraged to enhance the in-person experience and support the care team. This team includes

informal caregivers, such as the adult children of elderly patients who may play an increasingly important (and technology-enabled) role. Healthcare startups are already experimenting with this model in a targeted way.[8]

Although patient segments help organize how we think about care journeys and the ecosystems required to support them, the services provided along these journeys will be tailored to the specific needs of each patient. In Exhibit 2, we imagine a tailored patient journey for John, a financially constrained patient with multiple chronic conditions, and the healthcare ecosystem that supports him.

What are the component layers that will form future healthcare ecosystems?

Ecosystems are built on three layers: infrastructure, intelligence, and engagement. The infrastructure layer is foundational, composed of effective data capture, curation, management, storage, and interoperability to create a common data set upon which the ecosystem can operate. Built on top of the infrastructure layer is the intelligence layer, which converts data elements to consumable and actionable insights. Finally, bringing an ecosystem to life also requires a robust engagement layer, enabled by the infrastructure and intelligence layers, to effectively curate an end-to-end experience for suppliers who provide services and offerings to patients. Components of these layers can be built, bought, partnered, or vended by ecosystem curators and participants.

The infrastructure layer requires data liquidity

Data liquidity—the ability to access, ingest, and manipulate standardized data sets—is required for the infrastructure layer to serve as the foundation for all insights and decisions made in the ecosystem. This data liquidity enables the ecosystem to create value and removes silos by allowing stakeholders to operate off the same data sets with increased coordination.

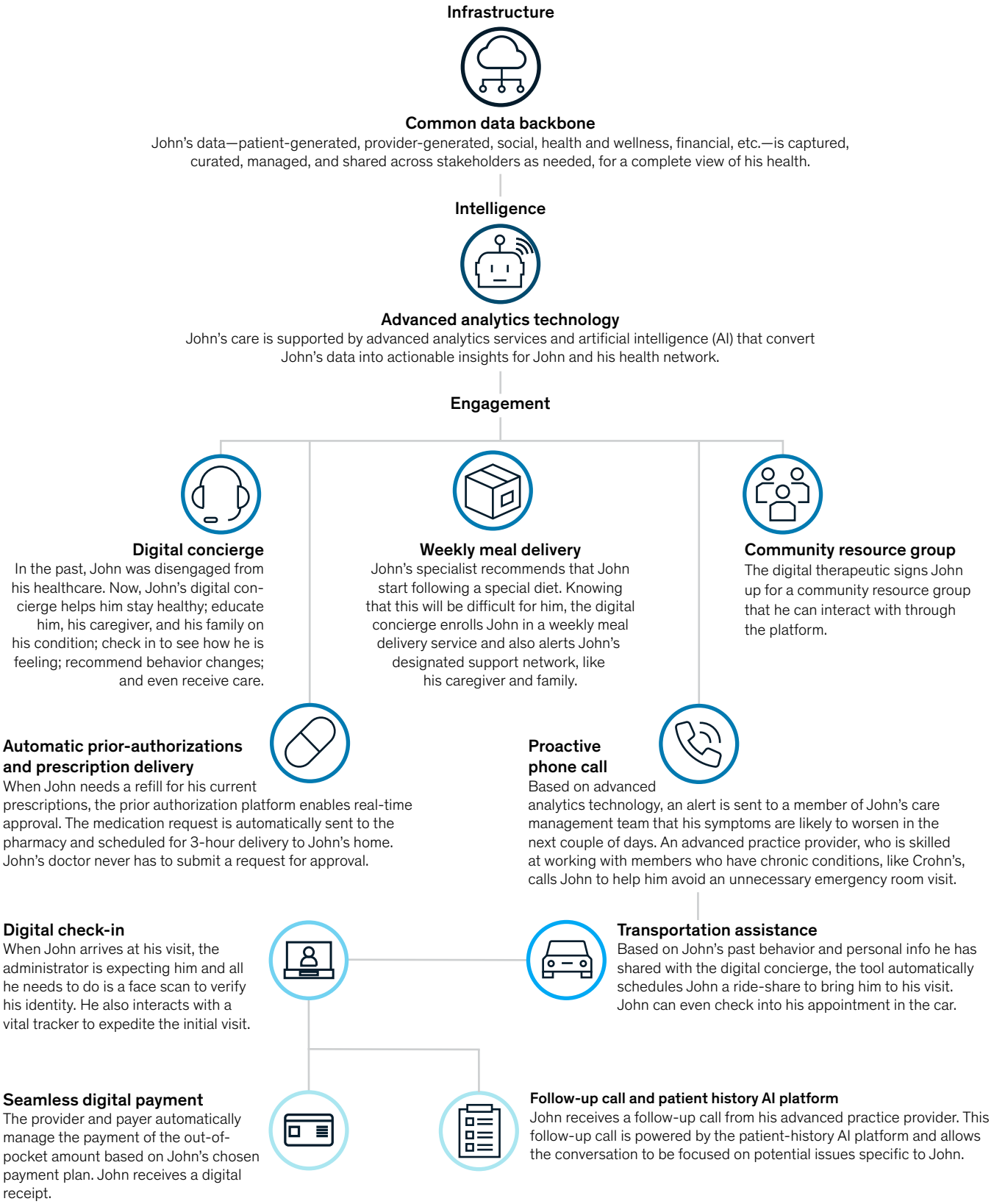
Similar increases in data liquidity in other industries, specifically consumer banking, have altered competitive landscapes. The Society for Worldwide Interbank Financial Telecommunications (SWIFT) messaging system, created in 1973 to transmit financial data, was a game-changer in introducing industry-wide standards.[9] The result is an improved customer experience and added consumer choice.

Increased data liquidity enables stakeholders to access a complete longitudinal patient record, consisting of patient-generated data, provider-generated data, health and wellness data, financial data, and social data. As standards are established and cloud services continue to proliferate, this data will be easier to access, consume, and integrate. Patients will still be owners of this data and will be required to grant stakeholders permission. While balancing privacy, stakeholders will have to ensure that they are building in the appropriate safeguards and that the ecosystem will provide clear value-added benefits before patients are willing to make the trade-off.

In healthcare, data liquidity will likely enable more coordinated care and accelerate innovation. Open application programming interfaces (APIs) built for liquid data can provide access to patient records, support electronic data exchange for care transitions, and enable the integration of new data sets, including and beyond claims, clinical, pharmacy, financial, and social data. For example, Medicare-participating hospitals could automatically send HIPAA-compliant electronic notifications to in-network post-acute care providers and other stakeholders when a patient's status is updated. As ecosystems evolve, tangible concerns and risks about the manipulation and ownership of patient, consumer, and provider data will arise for participants. Preserving individual privacy and trust is critical to the functioning of ecosystems. Reforms and regulations are beginning to address this challenge, with likely more to come.

Exhibit 2

Where meaningful ambulatory/outpatient volume exists, providers can be persuaded to shift sites of care.



Although the Department of Health and Human Services appears to be advancing data interoperability, evidenced by the CMS and ONC proposed rules around data interoperability, standard data formats, and APIs,[10] the regulatory framework and mechanism of implementation of increased data liquidity will continue to evolve, because stakeholders, including patients, will demand it.

The intelligence layer requires advanced analytics

Successfully converting data from the infrastructure layer into insights in the intelligence layer requires advanced analytics. Advanced analytics—including machine learning, natural language processing, artificial intelligence, and big data analytics—is critical to gain actionable insights to guide stakeholders across ecosystems. Data liquidity will enable advanced analytics in the intelligence layer and lead to more robust patient risk identification, clinical pathway development, and personalized and precision medicine.

In healthcare, advanced analytics allows stakeholders to use personalized and predictive insights to more effectively manage population health. Our 2011 research identified a $300 billion opportunity from data and analytics in US healthcare, yet only 10 to 20 percent of that was captured as of 2016.[11] Despite this lag, advanced analytics is being applied to healthcare problems (for example, PathAI is leveraging machine learning to improve cancer diagnoses, Babylon Health is using artifical intelligence [AI] to improve remote monitoring, and various pharmaceutical companies are developing breakthrough therapies enabled by AI).

Much of the innovation in this space could be driven by technology giants. Seventy percent of AI experts in the United States work for Google, Facebook, Microsoft, and Amazon,[12] with 30 percent of all US AI patents related to healthcare.[13] Google, for example, is developing its own AI/machine learning capabilities for disease detection.[14] These capabilities will help healthcare incumbents and new entrants leverage robust healthcare-specific services that can be built, partnered for, or acquired.

The engagement layer requires shared digital platforms, compelling consumer experiences, and new payment models

The engagement layer of the ecosystem is where end users interact with services that are in turn supported by underlying data sets from the infrastructure layer and insights from the intelligence layer. The engagement layer requires a shared digital platform where end users can access, through one principal channel, the curated set of services and offerings. Amazon is an example of a non-healthcare ecosystem that has enabled consumers to leverage a single digital platform for an entire spectrum of needs. In healthcare, these engagement offerings might include appointment scheduling, transportation assistance, daily health monitoring, and financial assistance.

In this layer, data liquidity and infrastructure will support advanced digital therapeutics and coordinated care across traditional and innovative care models that rely on up-to-date and comprehensive patient information.

To fully take advantage of this model in healthcare, industry behaviors will need to change. For example, provider practice changes include using the layer of intelligence to inform care decisions, leveraging innovative care delivery models and working across a care team at distributed sites, and capturing data from all relevant healthcare-related encounters. These changes will require payment model innovation to align provider and healthcare stakeholder incentives to change provider, payer, and patient behaviors.

The role of technology giants across healthcare ecosystems

Technology giants—and the billions of R&D dollars they are investing to create cross-industry capabilities—will influence the evolution of the healthcare ecosystem. The only question that remains is in what role.

At a minimum, they will supply the underlying capabilities across layers. In this world, healthcare incumbents would curate ecosys-

tems and build on top of the big tech players' capabilities through industry-specific services augmenting their horizontal/cross-industry infrastructure, intelligence, and engagement capabilities. For example, technology giants are locked in a battle to win share in the public cloud, creating infrastructure that could give healthcare players massive computing power. Furthermore, as data becomes more liquid, these technology giants will be able to continue to scale this infrastructure, supplying the foundation healthcare stakeholders can build on to realize value through healthcare ecosystems, and win market share against traditional competitors. At the same time, healthcare stakeholders who partner with these technology giants will need to address key risks associated with these arrangements, including those related to privacy, security, and internet protocol (IP) management.

The largest technology players might build and curate their own ecosystems. They could go to market either directly to consumers or through a select set of industry-incumbent partnerships. In this world, healthcare profit pools would likely be disrupted, as these large technology giants disintermediate existing healthcare incumbents' relationships with their patients or empower incumbents who are partnering with them to gain share. For this scenario to emerge, the large technology players would likely need a series of regulatory changes (for example, increasing data interoperability) and be reasonably confident that the economics of disrupting the industry make more sense than enabling innovation within it, which typically involves lower risk.

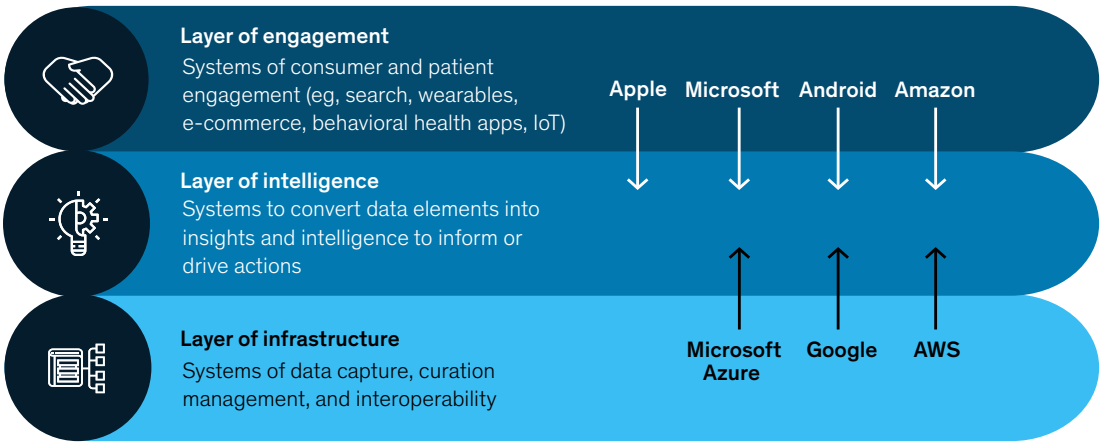
Finally, although the battle for share between technology giants in the infrastructure and engagement layers is fairly mature, the intelligence layer is much less developed, leading to heightened competition for talent and investment in these cross-industry oriented capabilities. An illustration of the competitive dynamics between technology giants is provided in Exhibit 3.

How can healthcare stakeholders prepare for and act within healthcare ecosystems?

Despite the movement from some of healthcare's major players, many have not yet clearly articulated their ecosystem strategy. Nor are they set up with talent, operations, and technology that can fully realize value from either curating or participating in integrated, omni-site, patient-centered ecosystems.

Exhibit 3

Technology giants are investing in capabilities across the layers of healthcare ecosystems.



IoT, the Internet of Things.

Strategically, stakeholders need to decide whether they will act as curators or participants across the ecosystems that they touch. Stakeholders who wish to curate an ecosystem will need to ensure meaningful improvement in outcomes for a specific set of patients. This approach will require being clear on which industry-agnostic services they leverage and how they augment those services with healthcare-specific capabilities to create a differentiated ecosystem. Other stakeholders who want to provide point-solutions will need to ensure their value proposition is both competitively distinctive and compatible with a variety of ecosystems.

In addition, most stakeholders will need to make foundational upgrades across ecosystem layers, including:

— Technology upgrades to leverage increasing data liquidity. Stakeholders must ensure that all created data is stored in a standard format and easily accessible. For many organizations, this upgrade will be accomplished by a transition to the cloud and the development and curation of data lakes. This approach also will enable the reconciliation of broader sets of data, including, for example, patient-generated and social/demographic data.

— Operating model upgrades to drive insights through data and analytics. By building and integrating APIs and services that increase data availability, stakeholders will enable advanced analytics and automation techniques, such as predictive models and decision engines. Increasing the types and quantities of data that can be used to drive decisions is critical for a robust healthcare intelligence layer.

— Data-first talent model upgrades to capture value. To effectively capture the value from the improved infrastructure and intelligence layers, organizations and participants can adopt new technologies that generate insights and change stakeholder behaviors based on these insights. These talent upgrades include, for example, teaching stakeholders how to use these insights to make decisions, and require change management and targeted re- or up-skilling.

— External and partner services upgrades to expand engagement. Enabling provider, patient, and other stakeholder engagement across the ecosystem will likely require an external-facing orientation focused on collaborations and partnerships in line with stakeholder needs, particularly in the engagement layer, but also to optimize infrastructure and intelligence.

Additionally, healthcare stakeholders will need to shift behaviors of healthcare participants across patients, providers, and other healthcare stakeholders to realize value from ecosystems. This shift requires curators and stakeholders to ensure adoption of new technologies, services, and capabilities in an already crowded space. Ecosystem curators and stakeholders offering point solutions therefore need to consider not only which technology and services they will provide, but also how those capabilities will sit within workflows and journeys, build on existing behaviors, and are linked to incentives.

Payers

Payers, who have access to members and claims data and a core competency in understanding, adjusting to, and shaping regulation in a highly regulated industry, are well-positioned to act as curators of specific healthcare ecosystems. That said, payers likely have to actively position themselves for this role by curating an end-to-end experience for members and providers that can be improved upon over time, especially as the payer core value proposition begins to be "unbundled." This would include individual point solutions that begin displacing core payer functions. Some payers are already integrating with pre- and post-acute care delivery systems and finding higher returns.

Curating an ecosystem requires a few steps:

— Determine which ecosystem or sub-ecosystem to curate. Given the range of member needs and the ways in which

patients engage with healthcare stakeholders, ecosystems must be customized to different types of care needs and journeys (for example, healthy individuals versus dual-eligible patients with multiple chronic conditions). Payers should decide which ecosystems they want to curate rather than simply participate in.

— Build partnerships that will allow stakeholders to create a seamless experience for patients. Effectively curating an ecosystem requires the ability to create a seamless experience for patients. This requires an underlying data infrastructure that follows patients throughout their healthcare journey and enables interoperable transfer of data across healthcare stakeholders. It involves intelligence that turns that data into insights, and engagement capabilities that lead to stakeholder action. In many cases, the underlying technology required for each layer of future healthcare ecosystems already exists and is relatively mature. Therefore, payers may be able to curate ecosystems most efficiently if they partner with existing technology players and apply healthcare-specific talent and operating models to orient that technology. In this context, payers will need to effectively manage the risks of partnership, including security and privacy concerns.

— Integrate patient and provider services into the ecosystem through contract, partnership, or acquisition on a use-case basis and with incentives in mind. Curating a successful ecosystem requires operating in an agile, patient-oriented way. Building the ecosystem on a use-case basis allows payers to gradually transition to these new ways of operating, while also ensuring a robust set of services that focus on the patient/patient-profile selected. For example, if a payer decides to focus on simple chronic patients, they may first decide to integrate services that enable remote monitoring for providers treating patients with diabetes. Additionally, payers can weigh investing in the capabilities required to build new payment models in order to best enable ecosystems. Given the increasing complexity of ecosystems and the requirement for stakeholders to work together to optimize the quality of care for patients, payers are likely to focus on payment models that effectively align incentives across ecosystem stakeholders.

Providers

While provider systems have made significant capital investments, to date these investments have not delivered their expected productivity improvements.[15] The evolution toward ecosystems presents an opportunity for these providers to increase their return on this invested capital. Leveraging historical—and potential future—investments to create a more longitudinal and personalized care experience could be a potential "unlock" for productivity. Additionally, the emergence of ecosystems may drive care delivery innovation as it enables providers to leverage a broader array of services for patients beyond responding to acute needs.

In an ecosystem-driven world, providers can either participate in an ecosystem curated by another stakeholder, as a professionalized deliverer of episodic or acute care, or they can curate a care-oriented ecosystem for certain populations across the care continuum. Providers are most likely to act as ecosystem curators for subsets of the population with intense, chronic needs; lower-need, healthier populations have less interaction with providers and are not likely to participate in an ecosystem curated by a provider.

The goal for providers who choose to curate ecosystems would be to deliver a fully integrated experience, centered around the patient, and incorporating informal caregiver engagement. These care-oriented ecosystems will need to extend throughout the entire care continuum. Providers who wish to pursue this strategic path will need to do the following:

1. Develop a strategy for bringing together care experiences across the entire

continuum (that is, seamlessly linking pre-acute, acute, and post-acute care). This kind of integrated network integrity likely requires deployment of a few critical enablers:

- Mechanisms that make scheduling and referrals processes more seamless and proactive. These mechanisms could include open scheduling, centralized referral recommendation tools, or care navigators who schedule follow-up appointments with emergency department patients upon discharge.
- Integrated network strategy across all provider types and locations. This strategy ensures that affiliated physicians are able to practice at the facility that makes the most sense to the patient.
- Creation of a network for high-needs patients. This network will fulfill all of the clinical needs of the selected patient segment, for example, focusing physician outreach/recruitment on specialties where patients are most likely to see an out-of-network provider.
- Aligned provider incentives. Providers within the ecosystem of care must realize ecosystem-oriented payment arrangements or joint incentives, such as through joint venture arrangements.

2. Re-work the traditional concept of organization via "service lines." A truly integrated experience will revolve around a patient's holistic needs. In the current system, patients transfer from one service line to another (for example, from radiology to oncology, to surgery, back to oncology, to social services). A team-based approach centered around the patient (for example, someone with a complex cancer diagnosis) will be more in line with an ecosystem view, but requires organizational, financial, and operational changes.
3. Integrate tools and care approaches that address non-clinical behaviors that influence health status, potentially through partnerships with other organizations (clinical care explains only about 15 percent of overall health outcomes).[16]
4. Deploy tools that help personalize the ecosystem experience for each individual patient. Data liquidity in the infrastructure layer and innovation in the engagement layer (for example, deployment of digital tools) will be particularly important to enable this personalized experience.

For providers that make a strategic choice to be a participant in an ecosystem, it will be important to have a distinctive value proposition. This means, at minimum, providing high-value care for specific patient needs. To maintain this value proposition, providers may choose to act as specialty aggregators that bring together distinctive services for a specific specialty (for example, orthopedics) to support an ecosystem. Providers who pursue this strategic path will need to do the following:

1. carefully consider which specialties or practice areas they will offer (for example, based on competition trends in those areas, long-term economic sustainability)
2. ensure that there is a clear quality and affordability value proposition so that they have a "right to play" in various ecosystems curated by others
3. ensure that the infrastructure, intelligence, and engagement capabilities they have in place can easily integrate into others' ecosystems

Healthcare services and technology players

Healthcare systems and technology players vary widely in terms of services and offerings. These players vary both across function (providing services, data and analytics, consulting, and software and platforms) and topical domain (for example, payment integrity, revenue cycle management, care management). As we've noted in previous work, amid wide diversity of players in this segment, large-scale platform players could evolve to create frictionless markets for healthcare products and services.[17]

This wide variation means that healthcare services and technology players are naturally positioned to participate in emerging healthcare ecosystems across different ecosystem layers:

— At the infrastructure layer: healthcare services and technology players (for example, health information exchanges, clinical information systems) currently provide data collection, transfer, and management capabilities. As the layer of infrastructure underpinning healthcare ecosystems matures—including through the entry of large technology giants—these healthcare services and technology players can realize value by building capabilities that require healthcare-specific expertise and domain knowledge to serve critical functions in enabling data sets.

— At the intelligence layer: healthcare services and technology players (for example, payment integrity, revenue cycle management, population health, clinical decision support) currently play a critical role in converting underlying data to actionable insights for a variety of customers. With the evolution of healthcare ecosystems, the opportunities for intelligence functions will likely expand materially. As advanced analytics capabilities mature—including through healthcare agnostic technologies—healthcare services and technology players can build off these capabilities and data to develop healthcare-specific insights. These insights can be provided to the patient in an efficient and actionable way, while also improving the quality of care.

— At the engagement layer: healthcare services and technology players, including patient engagement, care and disease management, utilization management, and provider enablement, currently play a critical role in providing information to and changing behavior of healthcare stakeholders. As healthcare ecosystems evolve, the number and complexity of points of engagement will continue to expand. This expansion presents an opportunity for engagement organizations to leverage an increasing amount of data and actionable insights and create value through patient behavior and payer/provider behavior. These players will need to learn how they can best plug into broader healthcare ecosystems to drive adoption and engagement.

Most healthcare services and technology players will likely act as (one or many) point solutions plugging into and providing key functions within evolving healthcare ecosystems. Therefore, these players should maximize the number of situations/ecosystems where their capabilities can be deployed. Often, companies string solutions together within or across topical domains that may stretch beyond a single layer of the ecosystem. This action requires technical flexibility and APIs that interface with other ecosystem participants, especially in the core infrastructure and intelligence layers. Additionally, healthcare services and technology players could create modular solutions that facilitate adding capabilities to an ecosystem.

Finally, although less common than acting as point solutions, some healthcare services and technology players may be able to curate effective sub-ecosystems (centered on either a specific population, such as those with diabetes, or use case, such as payments). For example, a patient-engagement technology focused on a specific condition may believe that with given engagement levels with patients, it can curate an ecosystem for these patients directly. This approach would require players to bring in underlying data infrastructure and intelligence capabilities, and curate a complete or near-complete continuum of digital and physical services focused on diabetic patients.

Conclusion

Ecosystems have proven to be a powerful force in reshaping and disrupting industries. Healthcare ecosystems have tremendous potential to do the same and could lead to improved health outcomes and affordability

by delivering a personalized, intuitive, and integrated experience to patients. In addition, providers would be able to enhance productivity and engage with a broad set of caregivers.

As industry forces combine to drive the technological innovation that enables these ecosystems, we pose three questions:

1. What is a clear strategic path (including strategy for leveraging cross-industry technology services and augmenting those services with healthcare-specific capabilities) that allows a company to benefit from the evolution of healthcare ecosystems?
2. Do healthcare industry stakeholders have the requisite technology capabilities, operating models, and talent required across the infrastructure, intelligence, and engagement layers of future healthcare ecosystems?
3. Do stakeholders have a structured framework to determine whether to build, partner, or acquire in closing any capability gaps? How does this framework consider what capabilities are truly differentiating and therefore should be owned?

Answering these three questions could help healthcare incumbents and new entrants successfully realize the potential value at stake from the emergence of healthcare ecosystems by improving the healthcare experience, outcomes, and costs, ultimately benefiting patients and the public.

Author's Note: *This paper was originally completed for publishing in early 2020 prior to the major outbreak of the COVID-19 pandemic in the United States. We believe that the COVID-19 pandemic, and economic downturn, has only accelerated the evolution of healthcare ecosystems. As we move forward, organizations can consider ways to use healthcare ecosystems to improve patient experience and health, while reducing total costs.*

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Walking out of the hospital: The continued rise of ambulatory care and how to take advantage of it

Pooja Kumar and Ramya Parthasarathy

Ambulatory care is one of the fastest-growing and highest-margin segments of the healthcare industry. Analyzing variations in Commercial claims data and doctor surveys shows that significant growth potential remains. While many health systems have benefited from investing ahead of this trend, significant opportunity remains to be captured.

With the continued rise of COVID-19, hospital capacity across many US states has been taxed considerably, with inpatient beds at or near full occupancy in a number of hard-hit areas.[1] This pressure on acute settings has heightened the important role that ambulatory care can and does play in the healthcare landscape by providing an alternative site for necessary procedures.

While COVID-19 has accelerated the interest in ambulatory care, this shift began long before the pandemic for a number of reasons. Take ambulatory surgical centers (ASCs) as an example: Often more conveniently located than hospitals, ASCs allow patients to be discharged within 23 hours of care, reducing their risk of infection and allowing recovery to take place in the comfort of their own homes. The ASC is often more intimate than the hospital, giving patients a greater sense of personalized care and contact with their care team. Perhaps most persuasively, costs to both patients and payers can be significantly less at ASCs, as their entire operating chassis is often configured at a lower cost base across staffing, space, and some types of supplies, while margins for healthcare providers can often be the same or higher. Indeed market research suggests that the ASC market alone is projected to grow at a compound annual growth rate of 6 percent between 2018 and 2023—reaching around $36 billion by 2023.[2]

Though ambulatory surgery is not appropriate for all patients (including those with complex comorbidities), its increasing presence is reflective of a broader healthcare trend. Namely, the rise of ambulatory sites reflects how medical care has been shifting out of hospitals and into outpatient sites.

Within the broader healthcare arena, while hospital care is still the largest segment of the healthcare market overall, a **disproportionate share of growth in the coming years will be in ambulatory settings**. This includes both free-standing sites as well as hospital outpatient departments. Non-hospital-provider segments—everything from diagnostics to pre-, non-, and post-acute services and physician offices—could account for almost 65 percent of projected profit pools by 2022, with an average growth rate of around 2 percent that started in 2019.[3] These projected growth rates are consistent with employment forecasts. The healthcare and social assistance sector will generate around 3.4 million new jobs through 2028; more than half of these new jobs will be in ambulatory care services, while only 350,000 will be in hospitals, according to the US Bureau of Labor Statis-

tics.[4] **Employment in outpatient care centers alone is projected to grow around 35 percent over the next decade, making it the second-fastest-growing industry overall**[5] (including those outside healthcare) behind only home healthcare services. While the effects of COVID-19 on these healthcare workforce trends are still unknown, ambulatory care sites are likely to remain a core part of the healthcare employment landscape.

Health systems have recognized the importance of ambulatory care. Many institutions have focused on the proliferation of solutions and technologies supporting ambulatory care, along with health systems' increasing focus on extending care along the continuum. Importantly, these trends will not dissipate soon, as they are driven by more **fundamental, interrelated market changes**:

1. **Innovation and technology:** Advances in clinical approaches and technology, including **new developments in anesthesia and pain control, as well as minimally invasive surgical procedures**, have enabled numerous procedures (for example, knee replacements, tonsillectomies) to migrate into the ambulatory setting.
2. **Consumer demand: Consumers, who increasingly care about lower costs, improved access, and better experience, are choosing out-of-hospital medical care.** With the rise in narrowed networks and high-deductible health plans, consumers are increasingly cost-conscious in their medical choices. Though the out-of-pocket savings opportunity varies by plan and procedure, studies have shown consistently lower costs at ambulatory sites—providing strong incentives for patients to shift their site of care.[6] For example, BCBS's Health Report of America estimates that when members elect to have a knee or hip replacement performed in an outpatient facility, costs can be 30 to 40 percent lower. On average, the price of an inpatient knee or hip replacement was $30,000, compared with $19,000 and $22,000 respectively in the outpatient setting.[7] These underlying consumer preferences have only been reinforced by COVID-19, as consumers have reported that they are significantly less comfortable returning to hospitals or emergency rooms in light of the pandemic.[8]
3. **Payer pressure: The growth of at-risk contracts and value-based care** are creating new incentives for providers and payers to find the lowest-cost sites of care. As we discussed in "Implications for value-based payment programs: Weathering COVID-19,"[9] these shifting incentives are further augmented by regulatory changes, including Medicare reimbursement for knee replacements and certain hip procedures in the ambulatory setting, as well as telemedicine. This incentive structure may change in the wake of COVID-19, as its impact on value-based payment programs remains to be seen.
4. **Provider opportunity: Shared ownership models financially align physicians to accelerate this shift to outpatient care.** As potential equity owners in these ambulatory sites, doctors have both the incentive and the opportunity to channel their patients to procedures outside the hospital. In addition, as COVID-19 continues to put pressure on acute sites of care, nearly 40 percent of physicians are reporting that they are more likely to refer their patients to non-hospital locations for procedures and surgeries.[10]

Despite growth in this space, our research indicated that wide variation in the use of ambulatory or outpatient care exists. This variation represents value to patients in cost and time. It also represents value to our healthcare systems in cost and capital invested in bed stock and acute facilities that could be redeployed; value to payers who typically pay significantly less at an ambulatory site than they would for the same procedure at an inpatient facility; and value to patients, who benefit when they have a better experience and lower out-of-pocket costs.

We sought to quantify this opportunity and prioritize where it could be captured—an exercise which revealed key insights for health

system leaders to consider: First, opportunities to accelerate site of care shifts exist only in targeted pockets (not across encounter types)—requiring strategic focus on where to prioritize new investments. Second, to make the shift to outpatient sites effective, heath systems need to engage physicians deeply, via shared equity models or other ways of ensuring they have "skin in the game." Finally, given the influence of consumer preference, health system leaders should keep a close pulse on how COVID-19 is shaping consumer sentiment around service types across markets.

Understanding variation

Despite the growth in ambulatory care sites since 2000, as well as health systems' recent heightened focus on extending into the community, the opportunity to expand services in such settings remains vast. Our research into three questions shows the scope of the opportunity for health systems and the overall healthcare ecosystem through accelerated migration of appropriate cases to ambulatory sites. Specifically, our analysis asks:

— What does the current variation across sites of care tell us about the value at stake?

— What are the potential sources of this variation?

— What could be the opportunity from reducing this variation?

We created a tool that analyzed a database of Commercial claims from across the United States in 2016. This database represented 1.4 billion national medical claims and more than $620 billion in cost.[11] After excluding post-acute and other care, the claims were grouped together into 615 million encounters for ambulatory and inpatient care that represented $490 billion in cost. Each encounter was then given a priority procedure to enable comparisons to be made. Of the 615 million encounters, roughly 10 percent were coded as primarily surgical, 13 percent as primarily medical, and the remaining roughly 77 percent spanned office appointments, preventative care, and emergency department visits.

The tool supports comparisons of variations across many dimensions, including by specialty, geography, patient age, and patient risk.

Despite this valuable view into a significant proportion of the spend in the United States, we should note that the Commercial segment represents a subset of the population with lower comorbidities and complications; therefore, it implies a higher potential to move to an ambulatory setting.

Quantifying variation today

We first analyzed the current scale of variation between sites of care. By our estimates, $60 billion of encounters take place almost exclusively in an inpatient setting, while $300 billion of encounters take place almost exclusively in an ambulatory care setting (Exhibit 1), where "exclusively" is defined as encounter codes where more than 95 percent of care takes place in one setting.[12] This means 27 percent of spend represents encounters that have meaningful variations in site of care choices. These "mixed" encounter codes represent bundles where a notable volume of activity takes place in an ambulatory setting and suggests that the approach, technology, and clinical protocols exist to support care in these settings. Across the analysis, an average cost saving of $21,000 for the same encounter code bundle took place in an ambulatory setting instead of an inpatient setting.[13] Given this variation, disseminating practices that support more patients in ambulatory care could be of value to cost-conscious patients, providers, and payers.

We had a strong ongoing hypothesis that lots of variation would exist across the spectrum, but the data show that the vast majority of encounter codes are concentrated at either end of the spectrum (Exhibit 2), suggesting that providers must therefore be tightly targeted as they proactively seek to shift sites of care. Specifically, providers should look to focus on (1) "low-hanging fruit," where 65 to 95 percent of encounters are already in outpatient settings, and (2) "leading procedures," where 5 to 35 percent of encounters are already in outpatient settings, suggesting a slow, sub-scale migration out of acute sites.

Drivers of variation

There are expected reasons why similar encounters may be provided in different sites of care, ranging from the preferences of the referring physician to the clinical risk for a given patient. For example, a higher-risk patient with multiple chronic conditions or with complex anesthesia needs will need the increased clinical backup available in an acute setting. However, other reasons are linked with variations in practice. Below, we present descriptive statistics on three potential drivers of variation in sites of care: (1) specialty, (2) patient risk, and (3) geography.

Specialty: It is not surprising that some specialties show different mixes of exclusively inpatient and exclusively ambulatory care, based in part on the technological

Exhibit 1

While most care is exclusively ambulatory or inpatient, nearly 30% of spend ($132 billion) has meaningful variation in site of care choice.

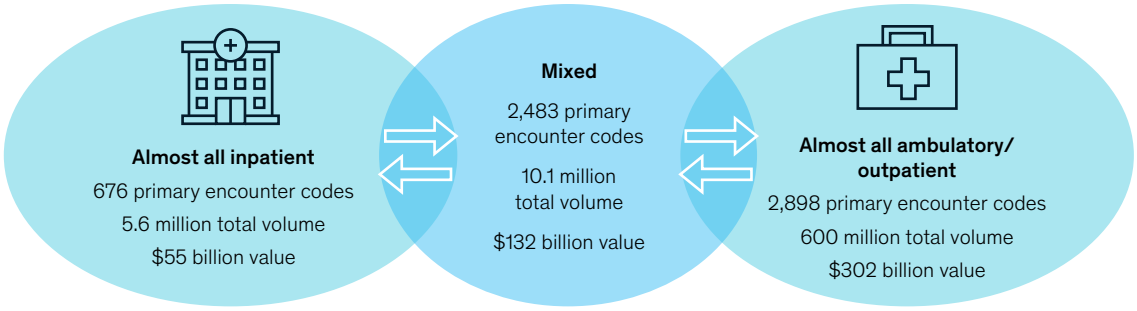


Exhibit 2

Where meaningful ambulatory/outpatient volume exists, providers can be persuaded to shift sites of care.

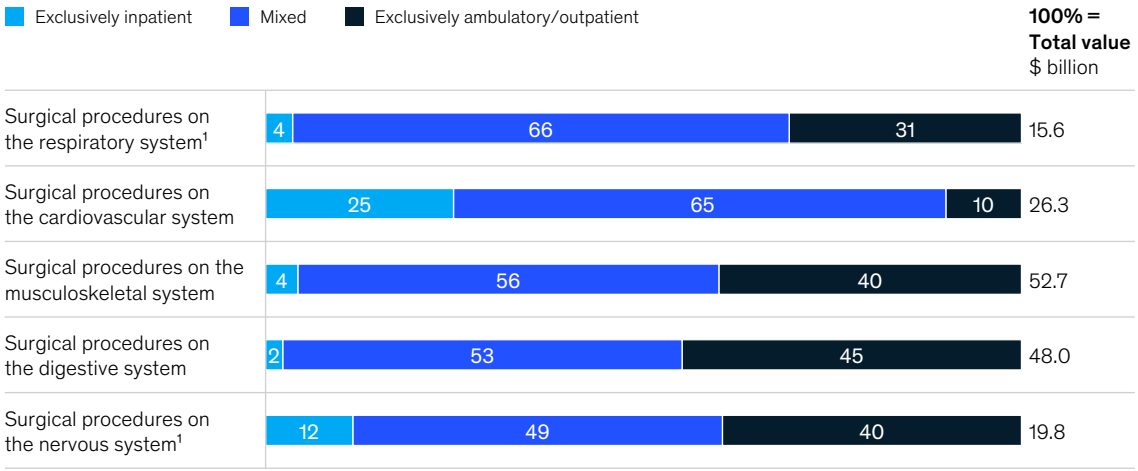
Encounters by share of ambulatory/outpatient care

IP only		Mixed		OP only
		Number of unique encounter codes		
676	807	451	1,225	2,898
		Total value of encounters, $ billion		
55.4 (12%)	2.5 (1%)	22.0 (5%)	61.1 (14%)	302.3 (68%)
		Total volume of encounters, million		
5.6	2.6	0.9	6.9	600.5
	Leading procedures		**Low-hanging fruit**	
	1.6, 0.2, 0.1, 0.4, 0.1, 0.2	0.1, 0.1, 0.1, 0.4, 0, 0.2	0.5, 0.6, 0.4, 2.6, 1.0, 1.8	
	5–34%	35–64%	65–94%	

IP, inpatient; OP, outpatient.

Exhibit 3

Across the major surgical specialties, 50–65% of encounters (~$91 billion in value) show variation in site of care choice.



[1] Figures may not sum to 100%, because of rounding.

advances that have allowed for minimally invasive procedures, as well as new techniques in anesthesia and pain control. For example, while cardiovascular surgeries still have nearly a quarter of encounter codes in the exclusively inpatient setting, less than 5 percent of musculoskeletal and gastrointestinal (GI) procedures take place in hospitals (Exhibit 3). Additionally, all five specialties below show a significant share (50 to 65 percent) of encounters in the mixed category—meaning they occur in both ambulatory and inpatient settings. Mixed encounter codes within these specialties alone account for around $91 billion in value—nearly 70 percent of the total value at stake.[14]

Patient risk: Unsurprisingly, patients with higher risk profiles are more likely to have care in an inpatient setting, due to the (potential) need for complex anesthesia or increased clinical backup. In the data below, we distinguish between patients based on three levels of clinical risk: healthy (low risk), moderate chronic (moderate risk), or severe chronic (high risk).[15] Across all encounters, high-acuity patients were in exclusively ambulatory settings for only 43 percent of cases, whereas low-acuity patients were in this care setting for 75 percent of cases. More interestingly, the data showed that for select procedures, such as gallbladder removals or spinal fusions, some high-risk patients received care in an ambulatory setting. Lower-risk patients almost always received care in an ambulatory setting (Exhibit 4).

Geography: In addition to variation across and within specialties, we examined geographic variation in the volume of ambulatory care provision by dividing the United States into four regions—Northeast, North Central, South, and West—and focusing on surgical procedures that currently take place in both ambulatory and inpatient settings.[16] Overall, the Northeast offers less ambulatory care than the rest of the country, with around 58 percent of such volume in ambulatory settings compared with 64 to 67 percent across the rest of the country (Exhibit 5). This difference is not only consistent, but often even pronounced within specific subspecialties, such as musculoskeletal and digestive systems (Exhibit 6). While geography itself is not a causal driver of variation, it does highlight the potential role that market conditions play in hastening the shift in sites of care, including at ASCs.

Exhibit 4

Patient risk profile is strongly correlated with site of care choice, with stark variation even within select procedures.

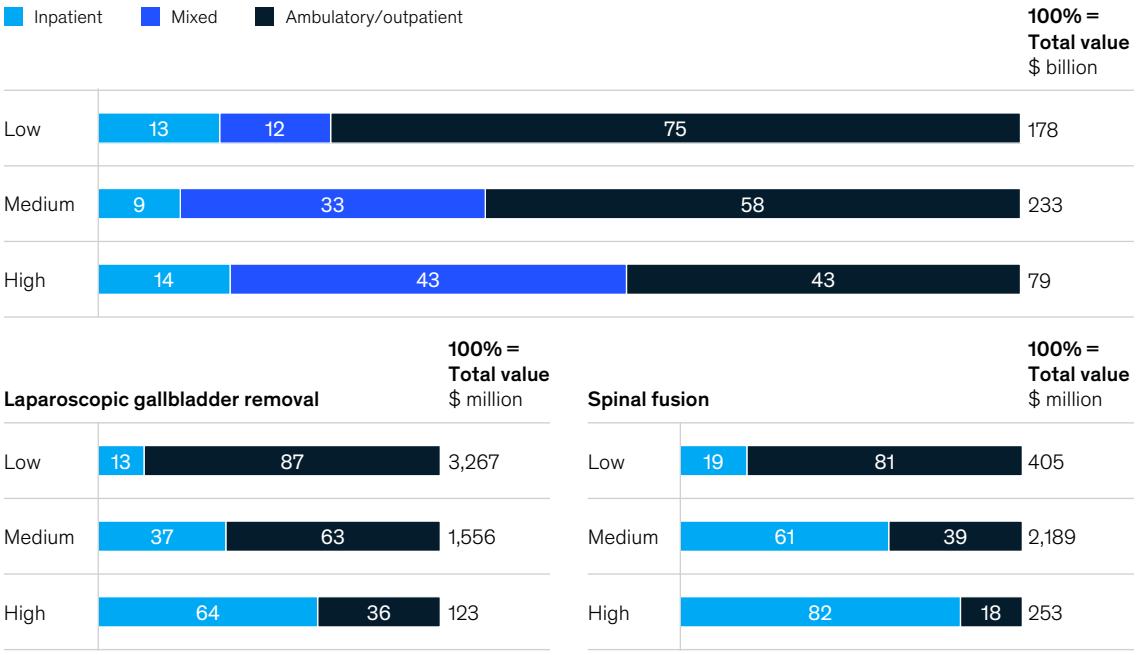
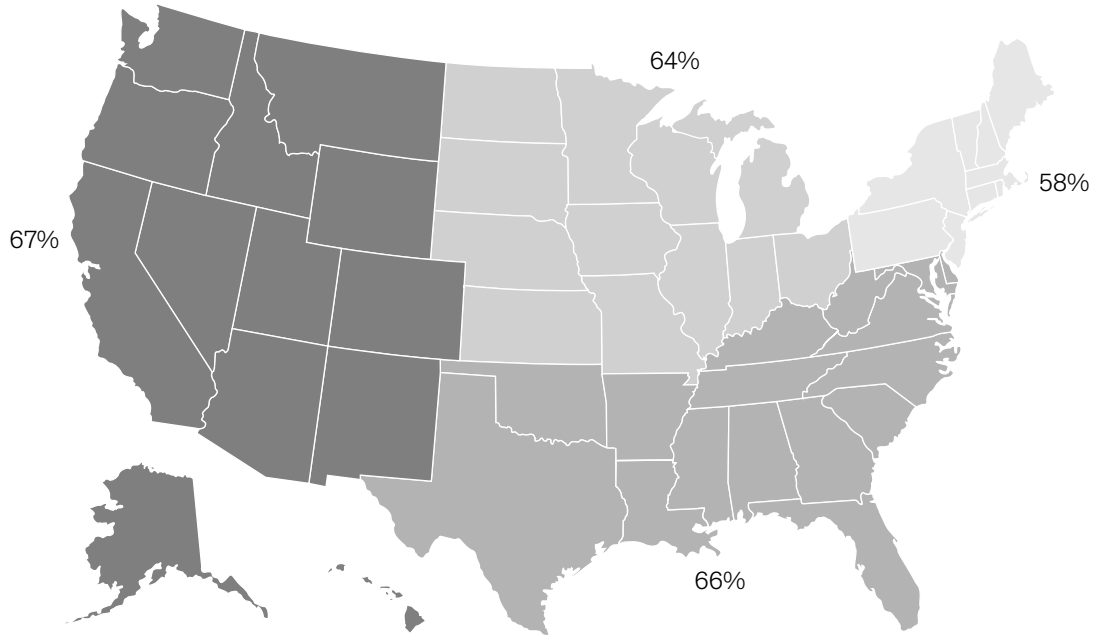


Exhibit 5

Scale of ambulatory care varies across the country, with the slowest uptake in the Northeast.

Ambulatory care, % of surgical procedures[1]



[1] Includes only procedures that currently take place in both inpatient and ambulatory/outpatient settings; excludes any procedure that is exclusively (or >95%) ambulatory or inpatient.

Understanding future opportunities

Analysis of existing clinical practice patterns shows clear, targeted opportunities for ambulatory growth. Further innovations in clinical practice will create new opportunities to provide additional care in ambulatory settings. Prior to the onset of COVID-19, we surveyed 150 cardiology and 150 orthopedic physicians on their expectations of where they think opportunities exist to make targeted moves over the next decade.

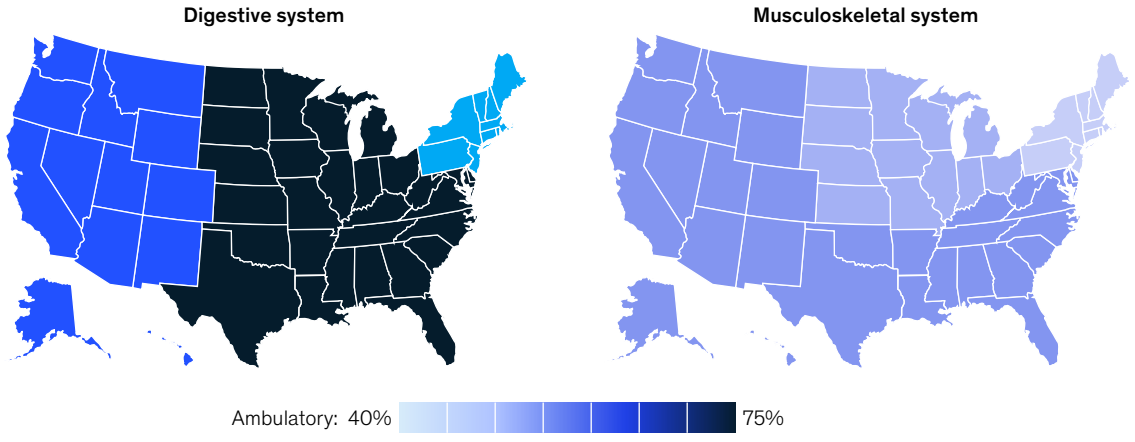
We prioritized procedures where at least 60 percent of care was conducted in inpatient settings today, because we wanted to identify where ambulatory innovation could have the greatest disruption on hospitals. Each physician was told what share of a common procedural technology (CPT) code's activity was in an inpatient setting today. They were then asked to estimate the percentage of activity they believed would exist in ten years' time. Each code was surveyed at least 75 times to give strong statistical confidence.

The CPT codes surveyed represented 15 million encounters across inpatient and ambulatory settings. Today, 10 percent of this activity takes place in an ambulatory setting (compared with a 64 percent average for all encounters in these specialties). Within ten years, care delivered in an ambulatory setting is expected to grow to 32 percent of the total activity. This increase represents an average growth of 12 percent per annum, with meaningful differences across specialties. More specifically, orthopedics is expected to see higher growth from a lower base, from 5 percent ambulatory activity today to 26 percent in a decade, while cardiology is expected to grow from 16 percent today to 40 percent in a decade (Exhibit 7).

These growth rate projections are driven by significant expected change in certain high-volume procedures. For example, in orthopedics, total knee replacements consisted of 1.6 million encounters but saw an estimated change in ambulatory volume to 30 percent, from 2 percent, over the next ten years. In cardiology, catheter placement, which had 1.2 million encounters, saw an estimated change in ambulatory volume to 59 percent, from 38 percent, over the same period. Though not captured in this survey, there are likely to be other procedures beyond cardiology and orthopedics where significant innovation and changes in the site of care could be captured, as well as greater interest from physicians in the wake of COVID-19 to shift procedure volume away from the hospital setting.

Exhibit 6

Regional variation in the prevalence of ambulatory care exists even within specific specialties.



Understanding the value of abulatory care expansion

Significant value can be realized from expanding access to ambulatory care, particularly for patients and payers who are focused on costs. Patients prefer faster access, shorter stays, and lower costs. Payers typically pay significantly less for the same procedure than they would at an inpatient facility. Payers can incentivize ambulatory care options through levers such as patient education, copayments, network design, deductibles and plan design, reimbursement rates, and an approvals process that illuminates the benefits of ambulatory options.

Based on our research, physicians often report preferring ambulatory care operations, because they can see patients in more service-oriented settings. Moreover, ambulatory sites can provide physicians with access to shared-equity ownership models. While shifts to ambulatory care are more complicated for hospitals and health systems, embracing these trends may help:

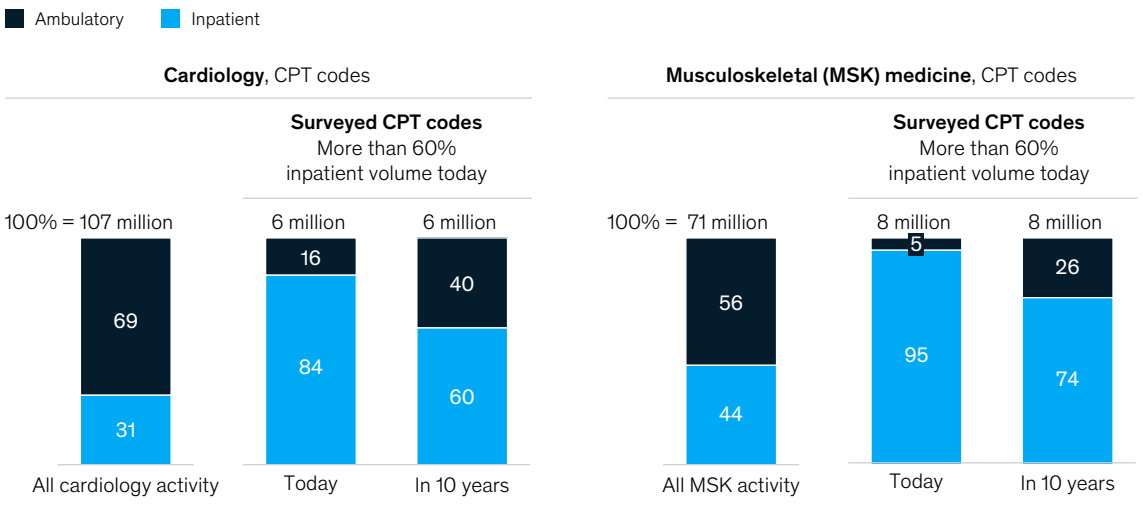
— **Realize savings from moving procedures to lower-cost sites:** Whether in value-based or fee-for-service contracts, health systems can benefit financially from building out their ambulatory presence in targeted service lines (for example, orthopedics, cardiology, GI). Under value-based contracts such as capitation or global budgeting, with reimbursement linked to outcome cost and quality rather than volume, health systems will benefit from shifting to lower-cost sites of care, promoting retention of savings.

— **Defend against competition:** If competitive ambulatory care centers are opening and taking market share, establishing an owned option provides some defense for health systems. This strategy may be particularly important in retaining physician loyalty, where the health system may be able to offer a shared-equity model, in order to retain higher-value, complex inpatient cases.

— **Build or strengthen presence in strategic markets:** Ambulatory care can offer improved access for patients and physicians without the need to invest significant capital in—and, depending on state licensing and regulations, approvals for—a new acute hospital. However, most payer contracts still pay hospitals and health systems based on the fee-for-service model.

Exhibit 7

Practicing physicians anticipate that ambulatory activity will grow 12% per annum over the next decade.



CPT, current procedural terminology.

Significant revenue for hospitals and health systems would be lost—for example, ASCs are typically reimbursed at about 60 percent of what a hospital would be paid for the same procedure.[17] Surgical cases are usually very profitable, and typically help to subsidize the hospital's other less-profitable departments. Despite the potential revenue loss from shifting procedures to outpatient sites, ASCs with operational discipline and strategic positioning typically enjoy nearly two times the margins of acute sites, which can bolster the bottom line for health systems.[18]

— **Enhance physician alignment:** If health systems are strategic about the locations where they partner or build new ambulatory sites, they can quickly become the preferred locations for physicians who have to split their days between ambulatory and acute settings for patients with different needs, especially if the health system is able to partner with independent physician investors to open new sites.

Competitive pressure, potentially heightened by the growth of value-based contracting, could increasingly tip the balance for health systems toward expanding their ambulatory care offers. Investments by large provider groups are clear evidence of this. An analysis of local circumstances, pressures, and opportunities also will determine a tipping point.

Opportunities for health systems

Health systems' actual preparations are not equal to the opportunity available. Our survey of 300 physicians found only 40 percent of providers making meaningful preparations (that is, three or more levers across the eight[19] available in the survey). The most common levers were building new facilities, updating clinical guidelines, offering patient education, and changing physician incentives (Exhibit 8).

Health systems can do much more to take advantage of the opportunity in this space. Five critical actions will increase the likelihood of success:

1. **Create strong alignment with surgeons for ASCs**
   To start, health systems can focus on creating strong alignment with surgeons. There are many examples of hospitals/health systems over-investing in the physical assets of the ASC (for example location, layout, finishes, equipment) and under-investing in relationships with surgeons. Partnerships between health systems and physicians that include shared equity can enable shared decision making on investments and cost management. Such arrangements can improve financial performance while maintaining, if not improving, clinical quality.

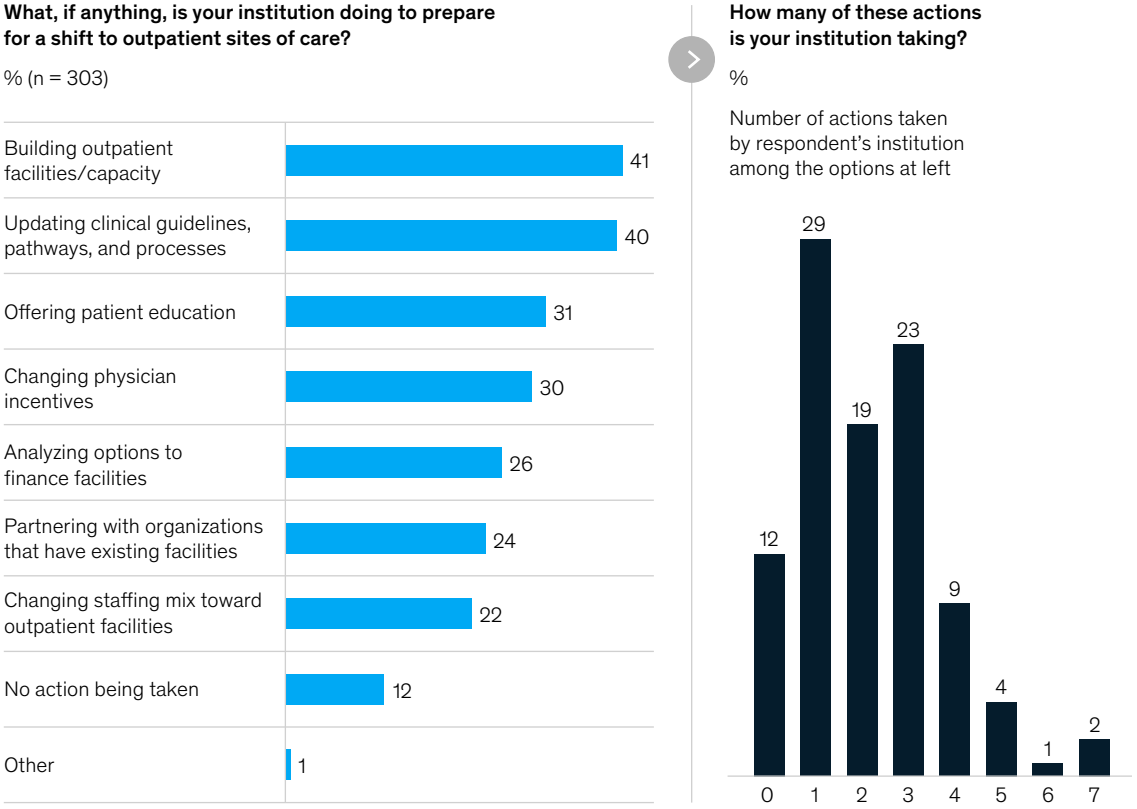
   At a minimum, health systems will likely need a core group of surgeons to be involved in the governance of the ASC. Health systems should want these surgeons to be true partners in operating and championing the ASC. Integrated and motivated surgeons are force multipliers. They are the most effective way to recruit other surgeons, and a strong ally in negotiating with suppliers. At their worst, misaligned surgeons can create a strong headwind for an ASC.

2. **Identify strong operational talent, especially in ambulatory leadership positions**
   After creating strong alignment with surgeons, health systems should identify strong operational talent to manage the ambulatory site. Major leadership roles include the administrator, the director of nursing, and the medical director. It may be worthwhile to consider partnering with a professional management company. This partnership can take the form of a management agreement, or shared equity in the site with the management company.

   In addition, health systems should take advantage of the staffing models possible at such sites. For example, unlike traditional hospital operating rooms, which often rely on floating nurses to support surgical procedures, ASCs can reap the operational gains[20] from having surgeons work with a single set of dedicated nurses and physicians' assistants for their blocks.

Exhibit 8

Only 40% of providers are pursuing three or more levers to prepare for the shift to ambulatory care.



3. **Understand what value the hospital/health system brings to an ambulatory partnership**
   A hospital/health system should aggregate the volume through existing relationships with physicians and surgeons. This volume, in addition to the existing funding and infrastructure around billing, collecting, and regulatory requirements, may be an asset when negotiating with payers and suppliers. In addition, physicians may prefer to avoid administrative, operational, or vendor complexities. A hospital/health system could consider highlighting its ability to take on these tasks, freeing doctors to focus on patient care. Finally, a hospital may be able to have capital at a scale needed to build and furnish the site with specialized equipment. This level of funding is usually too risky for a small group of surgeons to comfortably pursue.

4. **Transform operations to support expansion of ambulatory care services**
   Processes, systems, policies, and staff culture will transform to support expansion of ambulatory care services. This support can include raising awareness for patients; redesigning clinical pathways to support clinicians as they decide when to offer safe, evidence-based alternatives to inpatient stays; ensuring risk-mitigation protocols, such as inpatient transfers plans; providing training for staff on high-quality care outside the hospital setting; adjusting workforce plans and rosters for changing operations; reviewing metrics and reporting to address unwarranted variation; and building a culture that promotes collaboration across different sites of care.

5. **Ensure contracting strategy matches the planned shifts in site of care**
   As systems are proactive about planning shifts in sites of care that maximize patient experience and expectations, they should ensure that their contracting strategy is shifting at a granular level. In some markets, the opportunity for this shift may represent "win-wins" between payers and health systems in lowering the overall cost of care while maintaining or growing margins for healthcare providers, but operational discipline will be the foundation of this strategy coming to fruition.

The US healthcare system could create significant value by reducing variation in sites of care. This value will grow significantly over the next ten years as procedures that take place only in an inpatient setting today are moved safely and effectively to ambulatory care settings. Patients, physicians, and payers all support these trends, and an increasing number of hospitals/health systems have announced they plan to benefit as well.

Hospitals and health systems should position themselves on the same side as patients, payers, and physicians. Those who reach this goal will be able to shape the future, not be shaped by it.

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12 Encounters were categorized by service location using type of bill and place of service codes (in some cases CPT and revenue codes were also used).
13 Cost difference represents the difference between inpatient and outpatient costs for the same bundle, averaged across all bundles.
14 If we revise the approach to define "exclusively ambulatory" as greater than 90 percent and "exclusively inpatient" as less than 10 percent, these specialties still show a meaningful share (40 to 60 percent) of encounters in the mixed category, which account for around $65 billion in value.
15 We ran the 3M Clinical Risk Grouper (CRG) on Truven data and classified them into Low, Medium, and High risk based on the health status group. Low included groups 0–3 (Healthy/Non-User—Concurrent; Healthy/Non-User—Prospective; Significant Acute—Current and Prospective; Single Minor Chronic). Medium included groups 4–6 (Multiple Minor Chronic; Single Dominant or Moderate Chronic; Dominant or Moderate Chronic Pair). High included groups 7–9 (Dominant Moderate/Chronic Triplets; Malignancy Under Active Treatment; Catastrophic).
16 We excluded any procedure that is exclusively (or greater than 95 percent) ambulatory or inpatient.
17 Using Truven Commercial/Medicare limited data sets data and based on reimbursement difference between ASC and hospital outpatient department for top 20 common procedure codes.
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SELECTED QUOTES FROM 2020

Special topics in healthcare

I think about a future society that needs fewer and fewer clinics and hospitals because we're doing two things better: we're bringing care to where people are, in their homes and in their neighborhoods; and we're doing better at prevention and changing underlying drivers of health, whether they're someone's access to food, their ability to get out and exercise, or their ability to form strong social connections. If we can do that well, then I think people will live healthier, better lives.

Vivek Murthy, MD
Former Surgeon General
of the United States

Lloyd Minor, MD
Dean, Stanford University
School of Medicine

An essential message of our vision for precision health is looking beyond the traditional 30 percent of the healthcare pie that is focused on medical care and genetics, to look also at the social, behavioral, and environmental determinants of health, which we know account for roughly 70 percent of overall health outcomes and which, in the past, have received far less attention than the medical care we provide and our genetic makeup.

The countries that prioritized health not only had better health outcomes, they had better economic outcomes too.

Austan Goolsbee
Robert P. Gwinn Professor of Economics,
University of Chicago Booth
School of Business

Consumer decision making in healthcare: The role of information transparency

Jenny Cordina and Sarah Greenberg

When armed with transparent information, consumers are likely to make different decisions. These decisions include choosing a different provider, often considering reputation, quality, and costs.

As consumers experience more information transparency across various industries, many expect more accessible, user-friendly data around healthcare. The result has left some entities struggling to keep up with rising expectations, while others have adjusted by lowering prices, improving quality of services, and focusing on patient experiences.

Still, despite these consumer preferences and push, in our 2019 Consumer Health Insights Survey, only a fraction of respondents said they have been able to retrieve the information they sought when making healthcare decisions, contributing to low satisfaction.[1] Our analysis shows that when respondents can access relevant information when making a healthcare decision, they will choose an option that best meets their needs. They often look for lower costs, even if it means making other trade-offs (for example, a more convenient location).[2]

More than 60 percent of patients report they want more information when deciding where to get care.[3] In a world of limited information, some patients chose to look for more information, while nearly 49 percent of respondents stated that they instead chose to follow the recommendation for care from their doctor, clinician, or health insurer.

In our analysis, about 90 percent of respondents chose the lower-cost, in-network options that were of average quality over the higher-quality,[4] higher-cost options. Our research suggests that providing consumers with better and more accessible information could have a profound impact on how decisions are made (Exhibit 1).

What does care look like in a world where consumers have more transparency of information?

Consumers have driven certain healthcare businesses to adapt and meet their expectations. These adaptations include:

- **Lowered price:** The cost of elective surgeries, such as LASIK surgery, breast augmentation, and eyelid lifts, has decreased 10 to 15 percent cumulatively over the last decade, enabled by technology advances that now allow these entire procedures to take around 10 minutes.[5] By comparison, the price of nonelective surgeries, like childbirth delivery, has increased by up to four times over the same time period.[6]
- **Improved quality of services:** As the price of some elective consumer services declined, the quality of those same services has improved. For example, when

LASIK first debuted in the 1990s, 60 percent of patients had 20/20 range of vision after surgery. Today, those numbers have improved dramatically, with more than 90 percent achieving perfect vision.[7]

— **Improved experience:** From contact lenses on-demand to at-home kits for retainers to customized healthcare entities, healthcare leaders and start-ups are investing rapidly in improving experiences for consumers. Customers are able to receive more personalized, seamless, and digitally enabled healthcare experiences, such personalized live video doctor visits.

What increasing information transparency and new business models mean for traditional healthcare services

While rising customer expectations are driving new business models, increased choice pressure is also affecting existing healthcare systems. Increased price transparency is driving more pricing information, and therefore more "shoppable" healthcare services. Certain services with relatively straightforward pricing structures, such as imaging, can now be viewed in easy-to-use, Kayak-like search engines in certain areas. For example, Colorado's Center for Improving Value in Health Care's online tool allows patients to locate facilities with the lowest cost, nearest location, and best patient experience; this information empowers patients to potentially significantly lower the cost of their healthcare services.[8] Previous research has indicated the use of price transparency information was associated with lower total claims for routine medical services, with the largest difference for advanced imaging services.[9]

Start-ups are offering consumers more options, such as healthcare financial wellness platforms that provide the in-

Exhibit 1

The importance of information when deciding on where to receive care.

Respondents ranked 8–10 on a 10-point scale,[1] %

[1] Question DJ1: How important is the following information when you're deciding where to get care? (Population: All respondents; n = 4,957; top 12 of 24 shown).
Source: 2019 McKinsey Consumer Health Insights Survey

formation they need to make high-value healthcare decisions or tools that make shopping for government-funded healthcare more transparent (Appendix on p. 146). Other companies have focused on digital marketplaces for patients to purchase prescriptions with full-price transparency. While many providers have been either hesitant or challenged in offering price transparency estimates, some have worked to provide greater transparency.

For example, UCHealth in Colorado, Mayo Clinic in Minnesota, and University of Utah Health have been commended for their efforts in price transparency,[10] enabling consumers to receive an esti-

Sidebar

Information transparency could take many forms

We considered three key factors that drive consumer choice of healthcare options as the focus for healthcare information transparency across **insurance cost and coverage, clinical care and quality of the healthcare service, and nonclinical experience**. Respondents indicated that health coverage, cost, and experience were most important to them when deciding where to get care. Seventy-eight percent of respondents indicated that health insurance plan coverage was very important (ranked 8–10 on a 10-point scale), 74 percent said the cost they had to pay was very important, 74 percent said a positive past experience was important, and 70 percent cited a clinician's level of expertise (school, training) as important.

Insurance cost and coverage: Many consumers use insurance coverage as a proxy for cost of a service. They seek this information before they look at past experiences and medical reputation of healthcare providers.[1] Respondents most commonly prefer to receive information about the cost of their care from their health insurance company (50 percent) or their physician (49 percent) rather than conduct independent research.[2]

Clinical care and quality of the healthcare service: When respondents were asked what their first step would be when they were told to pursue treatment for an outpatient service from a specialist, 30 percent said they would check the quality of the facilities by asking friends or looking online.[3,4]

Nonclinical experience: Understanding information around healthcare experience also influences healthcare decision making. A consumer's healthcare experience is influenced by factors such as administrative experience, staff friendliness, ease of scheduling, appointment location, and average wait time for an appointment. For example, in a simulation, when given information about a poor administrative experience, 45 percent of respondents opted to switch to a different doctor's office.[5]

1 2019 CHI, QDJ1. How important is the following information when you're deciding where to get care?
2 2019 CHI, QA2. Which of the following would you prefer to support you in understanding the cost of a healthcare service before receiving care?
3 2019 CHI, FJ1B. For this situation, please imagine you've been visiting a specialist about some jaw and chest pain. The specialist wants to understand how well your heart is working and recommends an hour-long procedure called a cardiac catheterization to measure the pressure and blood flow in your heart. Your specialist provides you with a list of several recommended facilities with their phone numbers, so you can schedule an appointment. What would you do next?
4 2019 CHI, QDJ3. Please rank up to the three most important factors that you think of that would give you confidence you would receive good quality care.
5 2019 CHI, QFJ3. Before your first appointment, imagine you read a patient review of the doctor's office that says, "The doctor is good but the staff needs help! I've received incorrect bills multiple times and the staff is rude and unhelpful when I call to talk with them." What would you do?

mate for services. While the consumer is warned that it is impossible to know the exact cost, this high-level estimate gives patients the ability to make more informed decisions around their care. Additionally, many providers (such as retail clinics and urgent care centers) of basic health services (for example, lab tests, primary care, ancillary) offer standard pricing, which removes any need for consumer uncertainty.

How is the lack of information transparency today driving consumer behavior?

Respondents said they desire personalized, tailored information to make the right decisions about their healthcare—particularly in relationship to cost (Sidebar on p. 139). Some gaps currently exist between the healthcare information that they want, what is available, and where it can be found. Moreover, respondents said they find the tools meant to help often do not give them the information they need.[11]

Information for deciding where to get care

Most respondents don't have the information they want when deciding where to get care.[12] That lack of information also is reflected in low consumer satisfaction scores. Among 15 journeys respondents rated, commercially insured respondents reported the lowest **satisfaction scores** for "ability to find out if there are lower-cost options for treatment" and "ability to figure out what their cost for a service would be" (scoring 7.2 out of 10.0). In contrast, "how easy it was to fill a prescription" had the highest satisfaction score (8.5) (Exhibit 2).

When important information wasn't available to them, many respondents relied upon recommendations from their physicians or insurance companies when deciding where to get care. Among respondents who **didn't have the desired information when deciding where to get care**,[13] 35 percent "followed the recommendation for care from their physicians and didn't look for the information." Fifteen percent said they "followed the recommendation from their health insurer and didn't look for the information." Fifteen percent said they "didn't know where to get the information."

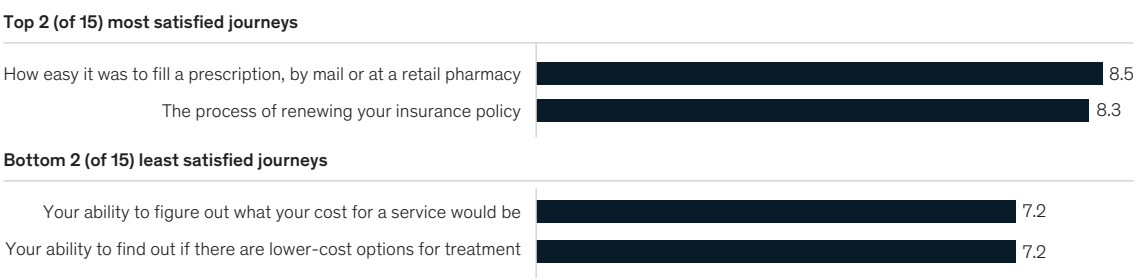
"I would like to clearly understand what is covered and what isn't. It's so hard to find that information. Even when you call, the people on the line, they can't give a clear answer."
—Female, 33, group

While most insured respondents say that they understand their deductibles, opportunity remains to further expand

Exhibit 2

Information transparency could take many forms.

Satisfaction of insurance journeys in the following areas, average satisfaction (out of 10.0) respondents who experience each area[1]

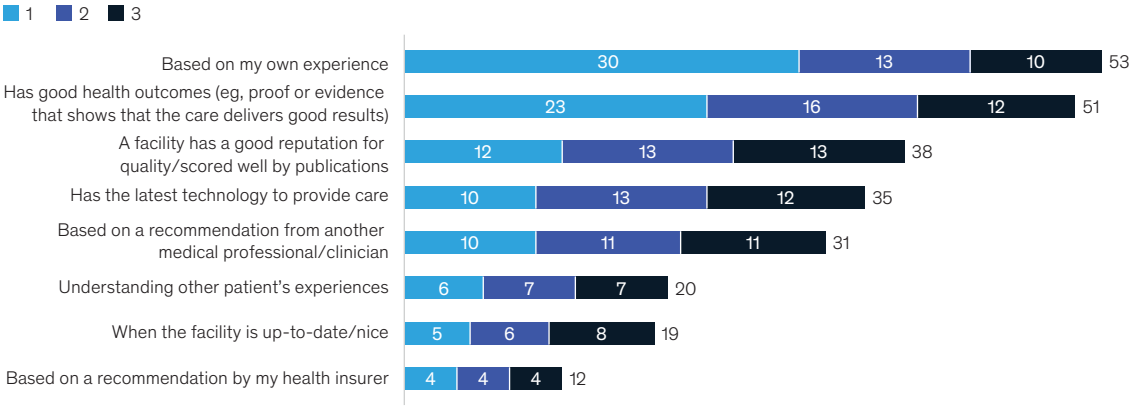


[1] Question IJ3: How would you rate your satisfaction in each of the following areas? Scale 1 (highly dissatisfied) to 10 (highly satisfied) (Population: All insured respondents with a commercial carrier; base sizes vary by journey).
Source: 2019 McKinsey Consumer Health Insights Survey

Exhibit 3

Respondents ranked which factors would give the most confidence.

Respondents ranked 1, 2, or 3, where 1 is most important,[1] %



[1] Question DJ3: Please rank up to the three most important factors that you think of that would give you confidence you would receive good quality care (Population: All respondents; respondents are allowed to select more than one response therefore total will not equal 100%; n = 4,958).
Source: 2019 McKinsey Consumer Health Insights Survey

information about this category. Many insured respondents **didn't know what their deductibles were**.[14] Thirty-four percent didn't know their deductible for out-of-network medical coverage, 24 percent didn't know their deductible for prescription drugs, and 16 percent didn't know their deductible for in-network medical coverage. Furthermore, as an example for choosing the most cost-efficient site of care, only 45 percent of respondents said they **understood** "cost differences for inpatient (hospital) vs outpatient (non-hospital) settings for a procedure" such as a colonoscopy.[15]

"I asked for the information, but providers refuse to disclose … the cost."
—Female, 42, uninsured

Information for quality of care

Respondents were asked to select **the important factors that would give them confidence that they would receive high-quality care** (Exhibit 3).[16] While more than half cited their own experiences or said proof or evidence of good health outcomes, 38 percent said their confidence was based on whether "a facility has a good reputation for quality/scored well by publications." Only 31 percent said they had confidence "based on a recommendation from another medical professional/clinician."

Respondents were asked to report **where they learned about the quality of a clinician or facility** they wanted to visit or have visited.[17] Thirty-seven percent said they searched online/used an app, while 31 percent visited the hospital or physician's website. Twenty percent said they used their health insurer's website or app. Thirty-four percent asked their primary doctor for advice, while 28 percent asked friends or family.

Respondents were asked about their **preferred sources of support for healthcare decisions** (Exhibit 4).[18] Respondents generally said they preferred their primary care providers (PCPs) to support them in making clinical treatment decisions, while preferring their health insurance companies to support them in understanding costs and benefits. They relied on their own web research for selecting a PCP and a pharmacy, and for obtaining information about provider quality performance.

How could decisions (and cost) be supported by greater information transparency?

When consumers have access to information that is personalized to their situation, they are likely to make different decisions, often prioritizing factors important to them, such as cost. The survey attempted to understand how consumers might use transparent information to make decisions through a simulated experience. We identified several trends through this simulation:

— Across different scenarios, respondents often chose lower-cost options that are of average quality rather than higher-cost, higher-quality options. As we increased out-of-pocket costs, even fewer chose higher-cost, higher-quality options.

— Most respondents were willing to change their preferred site of care when they learned that someone they knew experienced a poor administrative experience at that site.

— Proximity appears to be more of a "nice-to-have" option. Most respondents chose lower-cost or high-quality options over options that were higher-cost and more convenient.

— Past consumer experiences matter in decision making. We found respondents who have experienced an inpatient stay in the past or face chronic conditions are more willing to choose higher-quality options that are more expensive.

To ascertain consumer choices in a real-world situation, we created three different health scenarios.

We asked respondents to imagine that they recently moved and were looking to find a new PCP for their annual physicals. Respondents had to pick a PCP that best fit their needs. We provided them with eight options that had varying location information, wait times, and out-of-pocket costs.[19]

— Respondents preferred going farther away if they could get an appointment more quickly (43 percent chose

Exhibit 4

Consumers ranked their sources of support for healthcare decisions.

Respondents who ranked sources in top 3,[1] %

Consumers' sources of support for healthcare decisions	Your PCP	Health insurance company	Your own independent web research
Choosing a specialist	61	26	26
Choosing facility for procedure	54	28	23
Understanding cost of routine care	36	49	18
Hospital quality performance	30	18	30
Understanding out-of-pocket costs	23	59	17
Physician quality performance	21	19	35
Choosing a PCP	13	31	36

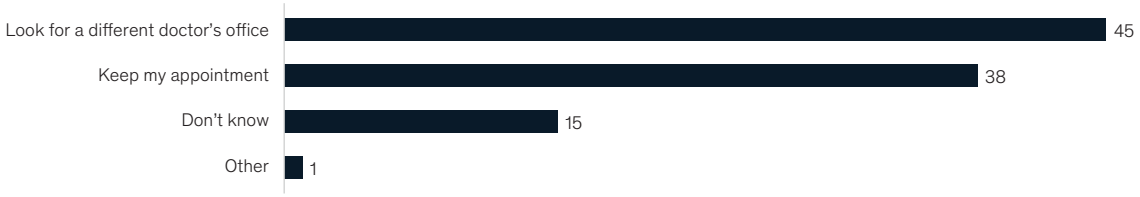
PCP, primary care provider.
[1] Question E1X: Who would you want to support you in… (Please rank up to 3 sources where 1 = most preferred, 2 = 2nd most preferred, and 3 = 3rd most preferred). Other sources of support included: an independent health advisor or advocate, your specialist, your family/friends, a health insurance agent/broker, a local hospital system, a pharmacy/pharmacist, your employer, the government, a financial advisor, Google, Amazon, and an option to select "I wouldn't need any support."
Source: 2019 McKinsey Consumer Health Insights Survey

Exhibit 5

A simulated decision based on new information about a poor administrative experience at a primary care provider.

Respondents, %

Before your first appointment, imagine you read a patient review of the doctor's office that says, "the doctor is good but the staff needs help! I've received incorrect bills MULTIPLE times and the staff is rude and unhelpful when I call to talk with them." What would you do?[1]



[1] Question FJ3: Before your first appointment, imagine you read a patient review of the doctor's office that says, "The doctor is good but the staff needs help! I've received incorrect bills multiple times and the staff is rude and unhelpful when I call to talk with them." What would you do? (Population: All respondents; n = 4,958).
Source: 2019 McKinsey Consumer Health Insights Survey

the farthest option where they could be seen within 24 hours; 14 percent chose the closet location but where their wait would have been between four and six days).

— Few respondents (17 percent) were willing to pay a higher cost for a more conveniently located facility.

— Respondents were equally split between preferring to book their appointment online or call. More than half of Gen Z and millennial respondents preferred booking online, while more than two-thirds of baby boomers and those older preferred booking over the phone. Gen X respondents were equally split.[20]

Respondents were given a hypothetical review of their doctor's office that described a poor administrative experience around incorrect billing. **Forty-five percent of respondents** looked for a different doctor's office after reading about a poor administrative experience (Exhibit 5).[21]

We next asked respondents to imagine that they had been visiting a specialist and were referred for an outpatient procedure. We informed them that their health insurance plan has a $5,000 deductible. We showed them five options with varying locations, quality, appointment wait times, and costs.[22]

— Thirty-two percent of respondents were willing to drive 30 minutes farther if it meant a cost savings of $750. This result skewed more heavily with younger generations.

— More than a third were more motivated by quality, with a fourth choosing a higher-quality option that had a week-longer wait than others. More than a third of respondents over age 65 chose this high-quality, less convenient option.

— Few respondents (13 percent) chose the most convenient, lowest-quality option. Gen X had the highest share, at 16 percent, of those choosing the convenient option.[23]

In the simulation, we told respondents that the original cost was wrong: it would now cost $100 to $750 more for the option they chose. Fewer respondents said they would look for an alternative option (22 percent) when their original choice was $100 more, but nearly half (48 percent) would do so if the cost was $750 more.[24] Respondents who said they would stick with their original choice tended to be younger, wealthier, and individually insured.[25]

Exhibit 6

Respondents were presented with a variety of factors around choosing a hospital.

Consumers were presented with the below set of information and asked to make an initial choice on which hospital to go to[1]

	Distance to location minutes	Rating 1 2 3 4 5	OOP cost, $	Coverage	Average wait time	Respondent's initial choice
Hospital 1	20	★★★★☆	2,000	In-network	3 weeks	45%
Hospital 2	10	★★★☆☆	1,000	In-network	1 week	41%
Hospital 3	20	★★★★★	4,000+	Out-of-network	3 weeks	8%
Hospital 4	60	★★★★★	3,000+	Out-of-network	3 weeks	7%

~90% **Consumers prioritize in-network coverage over higher quality healthcare.**

OOP, out-of-pocket.
[1] When given information that past consumers found it difficult to schedule follow-up appointments and that the facility didn't communicate very well with their primary care provider.
Source: 2019 McKinsey Consumer Health Insights Survey

In the third scenario, respondents were asked to imagine that their specialist and physical therapist recommended spinal surgery to improve their lower back pain. Respondents were asked to pick a facility they would want to attend to receive surgery.

We presented respondents with four options: two that were in-network, and two that were out-of-network. The in-network options were of average or slightly above-average quality, while the out-of-network options were high quality. **About 90 percent of respondents chose the lower-cost, in-network options that were average quality** over the higher-quality, higher-cost options (Exhibit 6).[26]

We informed the respondents of a poor administrative experience in which the specialist did not communicate well with the respondents' PCP. We found a similar number of respondents were driven to switch locations based on learning about a poor experience. Of the 45 percent of respondents who originally picked Hospital 1, 52 percent of respondents switched hospitals (Exhibit 7).[27]

Conclusion

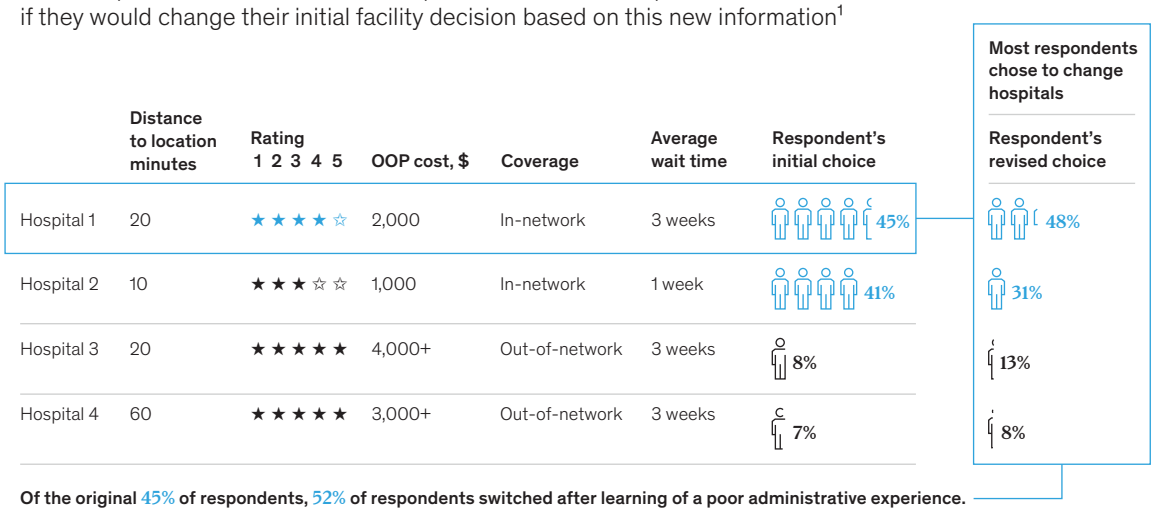
The healthcare industry is becoming more transparent as stakeholders in the healthcare ecosystem are not only expecting but also often demanding access to information. Providing consumers greater access to transparent information that they can understand has the potential to significantly improve their ability to engage in choosing where to receive care, including making trade-offs that are important to them, while improving their experience.

When armed with transparent information, consumers are likely to make different decisions. These decisions include choosing a different provider, often considering reputation, quality, and costs. Convenience is less of a priority when tackling health concerns: younger generations tend to be more willing to drive longer distances to seek a lower-cost solution, while those over age 65 prefer high-quality options, even if they are less convenient. With greater ability to choose, "shoppability," and more options for healthcare ser-

Exhibit 7

The respondents were asked to revise their hospital choice.

Then, respondents were informed of a poor administrative experience, and asked if they would change their initial facility decision based on this new information[1]



OOP, out-of-pocket.
[1] When given information that past consumers found it difficult to schedule follow-up appointments and that the facility didn't communicate very well with their primary care provider.
Source: 2019 McKinsey Consumer Health Insights Survey

vices, **nearly all patients may in fact move to the lower-cost, in-network options that are of average quality** rather than choose the higher-quality, higher-cost options.[28] As the conscientious consumer continues to gather more information via existing and new channels (such as online portals and social media), providers face a significant risk of losing patients who are equipped with, for example, information about poor administrative experiences.

On the flip side, healthcare companies that lead the way in transparency may have the opportunity to build relationships with consumers to help them make their health decisions more effectively and to shape what and how information is shared at the industry level. These companies that can provide greater value to consumers will benefit from increased customer satisfaction. For those healthcare companies seeking to lower the total cost of healthcare, engaging consumers has been an underutilized means of improving medical cost trend. As technology, data, and consumer engagement increase, so too will the importance of information transparency in improving the healthcare ecosystem.

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This article was edited by Elizabeth Newman, an executive editor in the Chicago office.

[1] Forty-five percent of respondents reported dissatisfaction with their ability to figure out the cost of a service, and 45 percent of respondents said they were not satisfied with their ability to find out if there are lower-cost options for treatments (ranked 1–7 on a 10-point scale). This lack of information transparency corresponded to negative effects on a consumer's overall experience. When respondents were asked to rank their satisfaction, they repeatedly ranked information transparency areas, such as understanding the cost of care, understanding their bill, and finding the right provider, as points of low satisfaction that negatively affected their healthcare experience. 2019 Consumer Health Insights research (CHI), QIJ3. How would you rate your satisfaction in each of the following areas? Scale 1 (highly dissatisfied) to 10 (highly satisfied).
[2] 2019 CHI, FJB2. Imagine that you went to your health insurer's website where they provide the following information. Based on this information, which facility best meets your needs?
[3] 2019 CHI, QDJ1. How important is the following information when you're deciding where to get care?

Appendix

Digital healthcare information-seeking activities

In seeking healthcare information, most respondents stated a **preference for using digital tools**, rather than talking to a live person.[1] However, the percentage of respondents preferring digital to a live person has generally declined or plateaued over the past three years:

Exhibit A

Respondents preference for using digital tools to search for healthcare information.

	Percent preferring digital			
Information sought	**2016**	**2017**	**2018**	**2019**
Search for doctor ratings/reviews	74	80	79	75
Search for hospital/health system ratings/reviews	75	78	74	70
Search for a doctor	67	73	72	67
Check my health information (eg, test results, appointment time)	57	69	71	69
Search for a hospital/health system	71	71	71	67
Shop for a health plan	N/A	68	66	65
Search for doctor costs	67	68	66	63

Yet, despite a majority of respondents reporting a preference for digital healthcare information sources over speaking to a live person, in practice, a minority of respondents reported actually **using digital information sources**[2]:

Exhibit B

Respondents actually using the digital healthcare information.

	Percent used digital			
Digital usage	**2016**	**2017**	**2018**	**2019**
Electronic health records	29	35	37	39
Online search for doctors based on location and patient satisfaction ratings	30	29	30	31
Receive reminders to take medication or refill a prescription	25	22	23	26
Access to nutrition/health information and FAQ on health needs	24	25	22	24
Online health information such as the pros and cons of alternative treatments	26	21	17	20
Compare costs of different healthcare providers and estimate out-of-pocket	18	17	16	19
Video or online doctor visits	6	6	9	11

Digital healthcare information-seeking activities

These findings suggest that current digital tools do not satisfy consumers' information requirements, and an opportunity exists for payers and providers to develop new and better digital healthcare information tools. Massachusetts offers one example that illustrates the challenges of web-based price-estimate tools: it passed a law in 2012 to provide healthcare price estimates to consumers, but a report last year found only between 2 to 6.6 percent of the state's consumers in 2017 and 2018 were using web-based tools.[3]

"Apple makes accessing my information easy and secure. Trying to get all of my healthcare records in one place right now is a nightmare. I would love to be able to make appointments, see test results, and access my medical history all in one place from all my providers."
—Male, 44, individually insured

"Website would not allow me to filter plans where my PCP was included in the plan. It had a function to do so, but it did not work. I had to look at each individual plan and key in my PCP's name."
—Male, 45, individually insured

"The insurer's website portal is very poor and provides confusing information."
—Male, 28, group

Additionally, 24 percent of respondents **engaged with online/digital media outlets about topics related to healthcare**, including medical conditions, treatments, physicians, or insurance.[4] Fifteen percent engaged with Facebook, and 12 percent engaged with YouTube.[5] Of those engaging with online/digital media, 46 percent were "seeking information about a medical condition" without posting, 29 percent "sought information about drugs, medications, or treatments without posting," 21 percent "posted a question about a medical condition," and 18 percent "sought information about physicians, clinics, or hospitals" without posting. Of those who have **read online ratings of healthcare providers or insurance companies**, 39 percent were "influenced to take action."[6]

"I looked to see what people had to say about a doctor I was considering to use."
—Male, 55, individually insured

"It caused me not to even make an appointment with a recommended physician after reading the poor reviews."
—Male, 35, group

1 2019 CHI, D3B. When given a choice, which do you prefer for each of the following tasks?
2 2019 CHI, D4. Please indicate your familiarity and use of each.
3 Office of the Attorney General, *Examination of health care cost trends and cost drivers pursuant to G.L. c. 12C, Section 17,* Massachusetts Attorney General, October 17, 2019, mass.gov.
4 2019 CHI, D16. In the past 12 months, which of the following online/digital media outlets have you engaged with for topics related to your healthcare, including medical conditions, treatments, physicians, or insurance?
5 2019 CHI, D16. In the past 12 months, which of the following online/digital media outlets have you engaged with for topics related to your healthcare, including medical conditions, treatments, physicians, or insurance?
6 2019 CHI, D21. Have online posts you have read or online ratings you have seen of healthcare providers or insurance companies influenced you to take action?

[4] Respondents defined "quality" as both quality of experience and quality of health outcomes: 53 percent of respondents define the quality of their healthcare by their personal experience, and 51 percent define quality by the type of health outcomes that they see after receiving care.
[5] All About Vision, allaboutvision.com; "National Health Expenditure Accounts," Centers for Medicare & Medicaid Services, 2018, cms.gov; "Plastic Surgery Statistics," American Society of Plastic Surgeons, 2005–18, plasticsurgery.org; The LASIK Vision Institute, lasik.com.
[6] Stranges E, Wier LM, and Elixhauser A, *Complicating Conditions of Vaginal Deliveries and Cesarean Sections, 2009*, HCUP Statistical Brief #131, Agency for Healthcare Research and Quality, last modified May 13, 2016, hcup-us.ahrq.gov.
[7] Sandoval HP et al., "Modern laser in situ keratomileusis outcomes," *J Cataract Refract Surg*, 2016, Volume 42, Issue 8, pp. 1224–34.
[8] "Consumers can now shop for healthcare imaging services in Colorado with CIVHC's new tool," Network for Regional Healthcare Improvement, July 16, 2018, nrhi.org.
[9] Whaley C et al., "Association between availability of health service prices and payments for these services," *JAMA*, 2014, Volume 312, Issue 16, pp. 1670–6, jamanetwork.com.
[10] Porter S, "Verma commends 3 health systems for their price transparency," Healthleaders, January 10, 2019, healthleadersmedia.com.
[11] 2019 CHI, DJ2. Why don't you have the information you'd like when you're deciding where to get care?
[12] 2019 CHI, IJ3. How would you rate your satisfaction in each of the following areas? Scale 1 (highly dissatisfied) to 10 (highly satisfied).
[13] 2019 CHI, DJ2. Why don't you have the information you'd like when you're deciding where to get care?
[14] 2019 CHI, C5. What is your deductible for your health coverage?
[15] 2019 CHI, DJ6. How well do you understand the following for you?
[16] 2019 CHI, DJ3. Please rank up to the three most important factors that you think of that would give you confidence you would receive good quality care.
[17] 2019 CHI, DJ4. In those situations, how did you learn about the quality of the clinician or facility that you wanted to visit or visited?
[18] 2018 CHI, E1A–E23A. Who would you want to support you in choosing the (right health insurance plan, primary care provider, etc.) for yourself and/or your family? Why would you most prefer the option you chose?
[19] 2019 CHI, FJ2. Imagine that you went to your health insurer's website where they provide the following information. Based on this information, which primary care provider best meets your needs?
[20] 2019 CHI, FJ2. Imagine that you went to your health insurer's website where they provide the following information. Based on this information, which primary care provider best meets your needs? S1. How old are you today?
[21] 2019 CHI, FJ3. Before your first appointment, imagine you read a patient review of the doctor's office that says, "The doctor is good but the staff needs help! I've received incorrect bills multiple times and the staff is rude and unhelpful when I call to talk with them." What would you do?
[22] 2019 CHI, FJ2B. Imagine that you went to your health insurer's website where they provide the following information. Additionally, your health insurance plan has a $5,000 deductible so you will have to pay for all costs up to $5,000. Based on this information, which facility best meets your needs?
[23] 2019 CHI, FJ2B. Based on this information, which facility best meets your needs? S1. How old are you today?
[24] 2019 CHI, FJ3B. When you call to schedule your appointment, the facility lets you know the price on your insurance company's website was wrong and the procedure will cost [X] more. What would you do?
[25] 2019 CHI, FJ3B. What would you do? S1. How old are you today? S11. For 2018, what was the total annual income for your household? S12. By age, income, and insurance status. Which of the following best describes your current healthcare insurance coverage?
[26] 2019 CHI FJ2C. Imagine that you went to your health insurer's website and you see you have $2,000 left on your deductible before your health insurance will pay everything for in-network locations. For hospitals that are out of network, they'll cover 80 percent of the cost. Based on this information, which hospital best meets your needs?
[27] 2019 CHI, FJ2. Based on this information, which hospital best meets your needs? FJ3C. Before your appointment, you find out that a close friend had a similar back surgery at the same location several years ago. Your friend mentions it was very difficult to schedule your follow-up appointments and the facility didn't communicate very well with her primary care provider. What would you do?
[28] 2019 CHI, FJ2C. Based on this information, which hospital best meets your needs?

Women in healthcare: Moving from the front lines to the top rung

Gretchen Berlin, Lucia Darino, Rachel Groh, and Pooja Kumar

Our analysis shows women in healthcare have made progress and continue to report high job satisfaction. However, women also encounter persistent obstacles to advancement, particularly for senior positions, where they remain underrepresented.

Our inaugural report on women in healthcare, released last year, found that on many measures healthcare was one of the best industries for women. This year, we found women make up around half of the healthcare workforce and experience a limited gender gap in promotions, a significantly better result than other industries such as financial services and automotive and industrial manufacturing. Moreover, women in healthcare positions reported higher career satisfaction and received more of what they requested in compensation negotiations.

Our analysis reveals signs of progress and reason for optimism: women in healthcare have demonstrated initial progress in moving up the organization and continue to report high job satisfaction. However, women also encounter persistent obstacles to advancement, particularly for senior positions, where they remain underrepresented. We highlight several new recommendations that healthcare organizations can take not only to level the playing field but also to ensure these actions achieve measurable improvements.

Of course, as we share the findings from our latest research, world events have completely reshaped the conversation. Healthcare workers are on the front lines in a global pandemic: its professionals are performing essential roles, including caring for victims of COVID-19, ensuring patients have access to the right care, and developing a vaccine and treatments. Healthcare professionals are receiving overdue recognition for their contributions, but it has come at a tremendous price: longer hours, increased stress

Sidebar 1

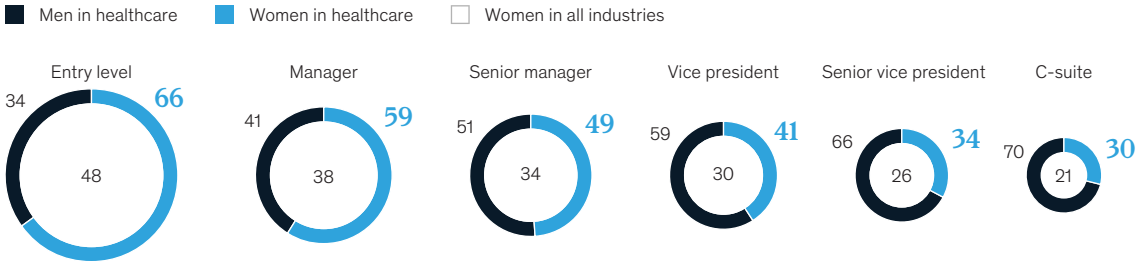
About the research

This article is based on analysis of McKinsey's Women in the Workplace data set, published by McKinsey in partnership with LeanIn.org. The study, which is the largest comprehensive benchmark of women in Corporate America, includes pipeline data on representation, promotions, attrition, and external hiring as well as the results of the Employee Experience Survey. We analyzed pipeline data for the healthcare industry overall and on the subindustry levels of payer, provider, and pharmaceutical and medical products (PMP) companies. In all, the data set included 43 healthcare companies with a total of around 51,300 employees. The Employee Experience Survey consists of qualitative questions answered by 8,856 employees at nine companies.

Exhibit 1

Women in healthcare decrease in representation across the pipeline, although do better compared to other industries.

Share of employees in healthcare, by level, %



and burnout, and, for those on the front lines, a greater risk of exposure and infection.

Further, the large-scale protests focused on racial injustice in the United States in the summer of 2020 have put issues of equity front and center. Pressure on corporate leaders to respond to this socio-political environment suggests that companies will increase efforts to prioritize diversity, equity, and inclusion.

This backdrop lends greater urgency for action on all fronts. Our hope is that this research will help inform a vigorous debate that continues to advance gender equality throughout healthcare organizations.

Reasons to celebrate

Healthcare continues to outperform other industries in female representation at all levels of the talent pipeline (Exhibit 1). Women account for 66 percent of all entry-level healthcare employees—an increase of three percentage points since last year—compared with 49 percent across all US industries. While the share of women declines in more senior roles, moving to 30 percent of C-suite positions, healthcare still outperforms all industries.

In healthcare, the sharpest decrease in the share of women occurs at the jump from manager to senior manager (a drop of 10 percentage points). This pattern diverges from other industries, where the steepest decline (also 10 percentage points) happens earlier in the talent pipeline, at the first step up to manager—also known as the "broken rung" of the ladder.

One possible explanation for this divergence between healthcare and other industries is the nature of promotions at different levels, as the drop is most significant in payer and provider organizations. Nursing, for example, requires a large manager workforce (on every floor and department of the hospital), and advancement from a nurse to floor or unit manager involves less formal promotion procedures. At the step up to senior manager, promotion panels are often introduced and additional qualifications are often required, which could contribute to the large drop in female representation.

Despite the obstacles to advancement, women in healthcare have a relatively positive outlook on their careers: nearly 75 percent of women report being happy with their careers compared with around 69 percent of men. This sentiment increases as women rise through the ranks: at entry levels, 71 percent of women report being happy, a figure that increases to 91 percent at the SVP level. The perception of equal opportunity may be a contributing factor. While 18 percent of women (the same level as last year's survey) report that gender may have played a role in missing out on promotions, raises, or chances to get ahead, 68 percent do not believe gender had an impact (14 percent report that

they are unsure). This finding is notable: our quantitative analysis found that men are generally promoted more than women.

Moreover, organizations are taking action at the top to increase female representation. The external hiring of women rose in the C-suite across healthcare organizations, from 33 percent in 2017 to 42 percent in 2018, a significant year-on-year increase (Exhibit 2). This progress may align to last year's call to action, since external hiring is one of the quickest levers to improve female representation, especially at the top.

Critical challenges to address

This progress is encouraging, but leaders should not assume that obstacles have been dismantled. Indeed, trends such as external hiring may be a bandage over more systemic barriers—such as promotion and the imbalance of line and staff roles—that are preventing women from parity, especially at senior levels. Consider that across the healthcare industry, women are promoted at similar but slightly lower rates than men until the SVP level. While these differences might seem negligible, they compound and can result in the much lower female representation at more senior levels (Exhibit 3). Promotion rates of women for senior roles seem to reverse this trend, but they belie the fact that there are far fewer women to consider for promotion.

The types of positions that women hold—and the distribution across line and staff roles[1]—may also play a part (Exhibit 4). In providers, for example, women represent approximately 80 percent of entry-level frontline workers, such as nursing positions, which are often

Exhibit 2

External hiring at C-suite has potential to boost women's representation but has limited impact on rest of pipeline.

Share of employees who are women, by level, %

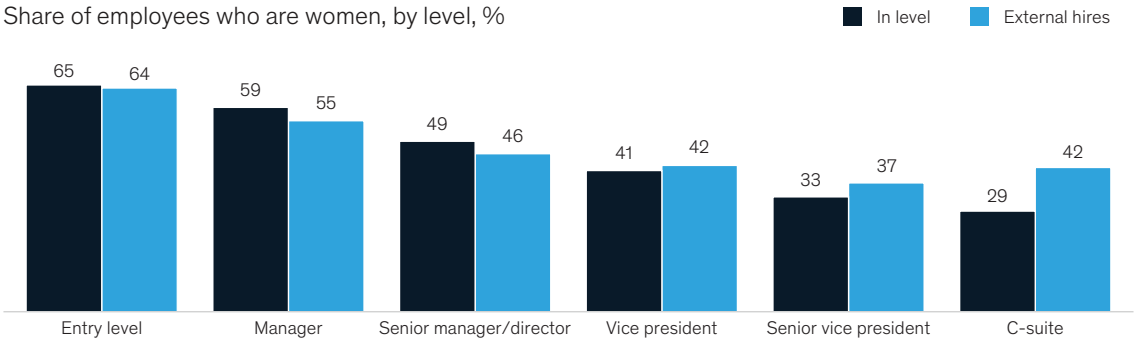


Exhibit 3

Promotion rates for men are generally higher than for women through the VP level.

Share of employees promoted, by level and gender, %

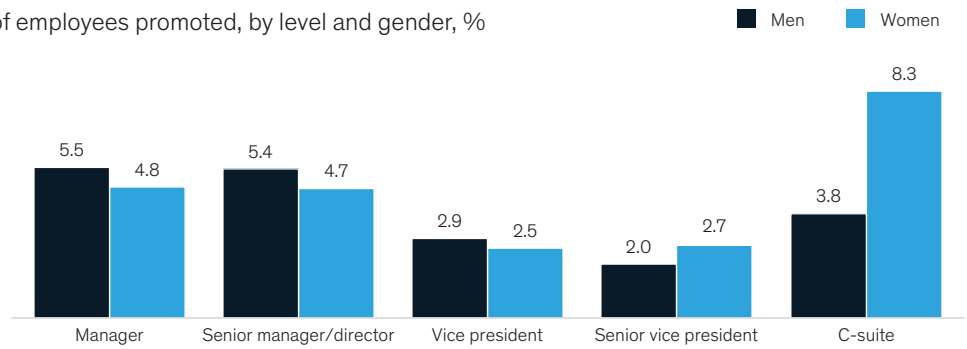


Exhibit 4

Women less likely to be in line roles with increasing seniority across subindustries.

Share of employees in line roles, by level, %

PMP, pharmaceuticals and medical products.

predominantly female. However, this representation decreases across the pipeline, until women make up only about 30 percent of line roles in the C-suite.

PMP organizations have the lowest share of women in line roles across the pipeline. Although they have more parity at the entry level—women represent 52 percent of entry-level line roles—they fill just 21 percent of the C-suite line roles. This distribution can be problematic, as employees in line roles are often afforded more opportunity for career progression and compensated more highly.

Where female advancement breaks down

In healthcare, the biggest obstacle to women's progression comes when making the leap from manager to senior manager, where female representation falls by 10 percentage points overall (Exhibits 1 and 5). The discrepancies in promotion rates create significant barriers for representation of women in more senior roles that cannot be adjusted with external hiring alone. To compound the challenge, attrition is fairly even by level across men and women, but a gap of around 1.5 percentage points exists for women at the SVP and C-suite levels (Exhibit 6).

Headwinds for women of color

The challenges that women as a whole face are magnified for women of color. Across healthcare industries, the share of white women in entry-level positions starts at 46 percent, gradually declining to 25 percent at the C-suite (Exhibit 7). Women of color account for 20 percent of entry-level representation, but by the C-suite their share has dropped to just 5 percent. As with women

Exhibit 5

Women most represented in provider organizations and least represented in PMP across levels.

Share of employees who are women, by level, %

PMP, pharmaceuticals and medical products.

Exhibit 6

Female attrition is either similar or lower than for men through VP and approximately 1.5 percentage points higher at the most senior levels.

Share of employees who left the organization, by level and gender, %

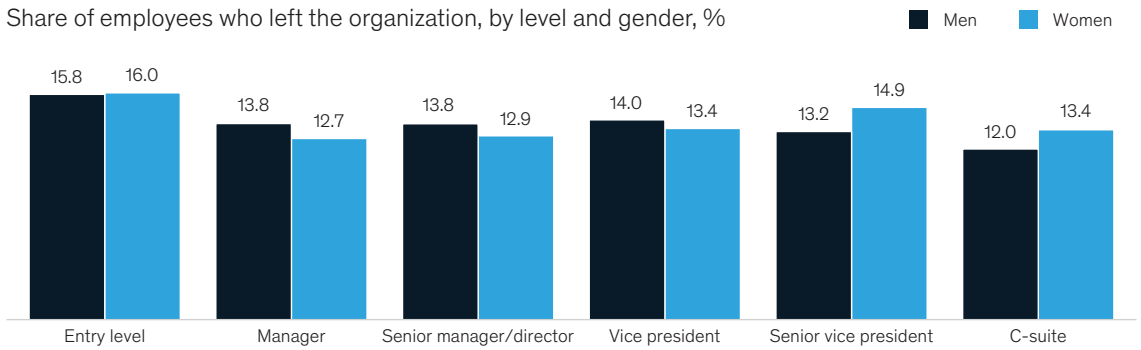
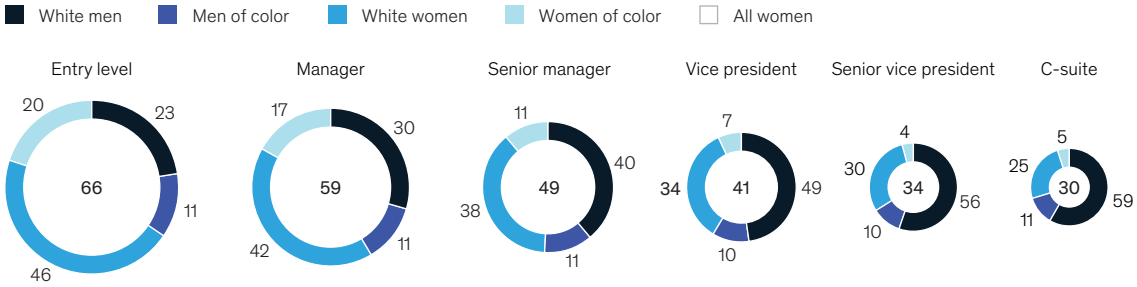


Exhibit 7

For women of color, the senior manager or director level presents the steepest drop-off in representation.

Share of employees by gender, race, and level, %



overall, the sharpest decline for women of color is seen at the transition from manager to senior manager. Compare that with the figure for white men, who are able to increase their share of roles nearly two and a half times as they move from entry-level to senior positions. By contrast, the percentage of men of color at roles throughout the industry stays flat, at about 11 percent. While men of color have the lowest representation initially and are likely an "only" more often, their career paths do not narrow across the talent pipeline in the same way as white women and women of color.

This lack of representation among women of color can have a far-reaching impact: fewer executives who are women of color translate into fewer role models for women just starting their careers. The C-suite sets the tone for an organization, especially as champions of diversity initiatives and the embodiment of values and priorities. Racial and gender diversity also has a direct connection to performance. Companies in the top-quartile for gender diversity on executive teams were 25 percent more likely to have above-average profitability than companies in the fourth quartile. Further, organizations with top quartile ethnic and cultural diversity on executive teams outperformed those in the fourth quartile by 36 percent in profitability.[2] Last, greater diversity throughout the organization can help healthcare companies more closely reflect the patients and customers they serve, thus strengthening the healthcare ecosystem.

Divergent perceptions on priorities and impact

The overwhelming majority of men (80 percent) and women (90 percent) report that diversity is widely recognized as a priority at their company. However, only 10 percent of women and 16 percent of men say that diversity is a top priority, highlighting the potential for it to be deprioritized in favor of other business demands. For example, the pandemic and economic crisis could lead companies to elevate resilience and recovery as priorities. At the same time, the current wave of protests and demands for progress might compel long-overdue changes in how organizations respond to their lack of diversity.

Men's perceptions of their ability to advance may sometimes diverge from the data. For example, despite a higher rate of promotion across the healthcare pipeline, 12 percent of men said they believed that their gender has played a role in being passed over for a promotion, raise, or a chance to get ahead, up from 7 percent the previous year. However, this perception does not reflect the promotions data across the pipeline.

Subindustry deep dives

An examination of payers, providers, and PMP companies highlights the differences in approaches and factors in promoting gender diversity (Exhibit 5). The mission of companies in each subindustry can have an impact on career paths. Entry-level positions

in provider organizations include direct care, while payers or PMP organizations often seek entry-level applicants for positions such as customer service and marketing.

Women represent a large majority of employees in lower levels at payers and providers; the latter subindustry has the highest representation of women at all levels of the organization except the C-suite. They are tracking well ahead of their industry counterparts until the transition from SVP to the C-suite, at which point the share of women falls 14 percentage points. On the other end of the scale, PMP companies have the lowest share of women across all positions, moving from 56 percent of women in entry-level positions to 25 percent in the C-suite.

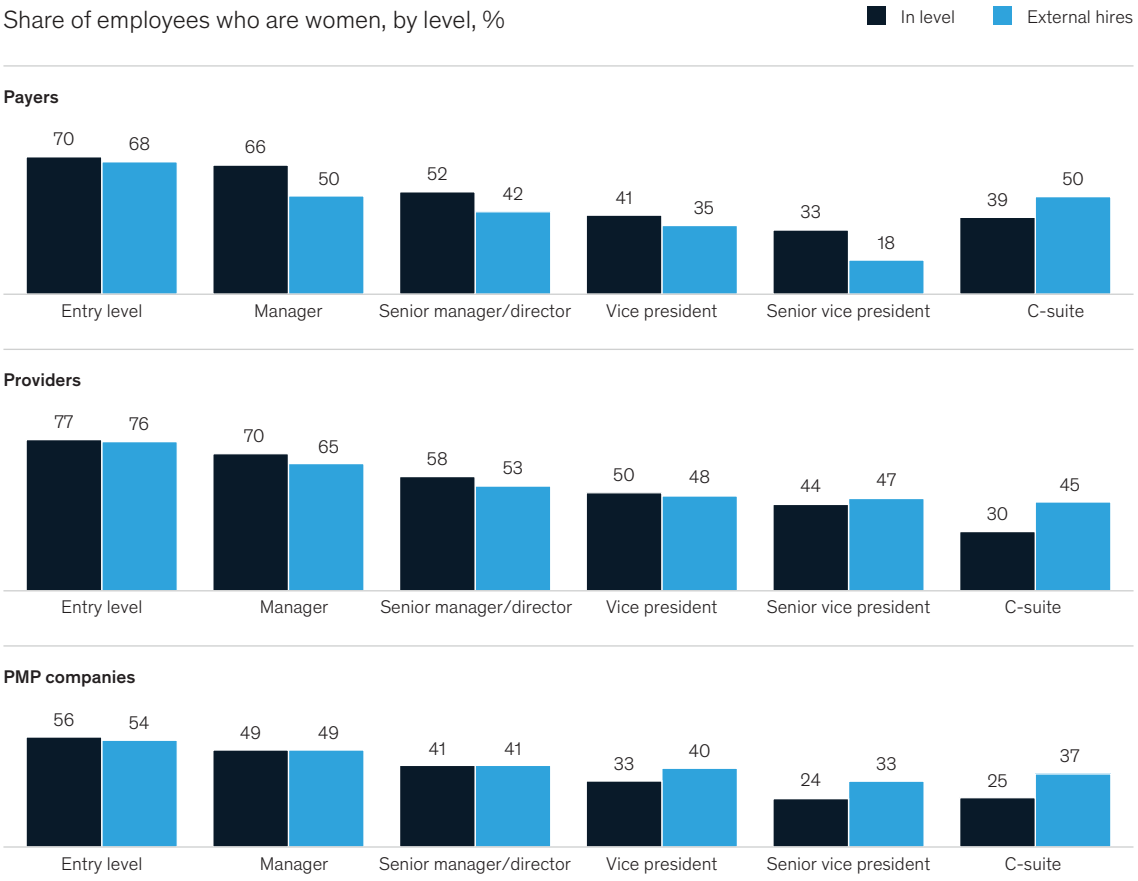
External hiring

All subindustries have been emphasizing external hiring efforts to fill roles with female candidates, particularly at the senior levels (Exhibit 8). Providers had the highest representation of women across the organization, except the C-suite. Among all three subindustries, external hiring for entry-level positions is very close to the overall share of women in these roles. Starting at the manager level, however, the share of women hired externally drops about 8 percentage points below the organization's in-level share for both payers and providers. In contrast, at PMP organizations external hiring for women at the VP level and above is higher than total female representation for that level, suggesting an effort to increase diversity at the top.

Exhibit 8

External hiring at C-suite has potential to increase women's representation at top but has limited impact on rest of pipeline.

Share of employees who are women, by level, %

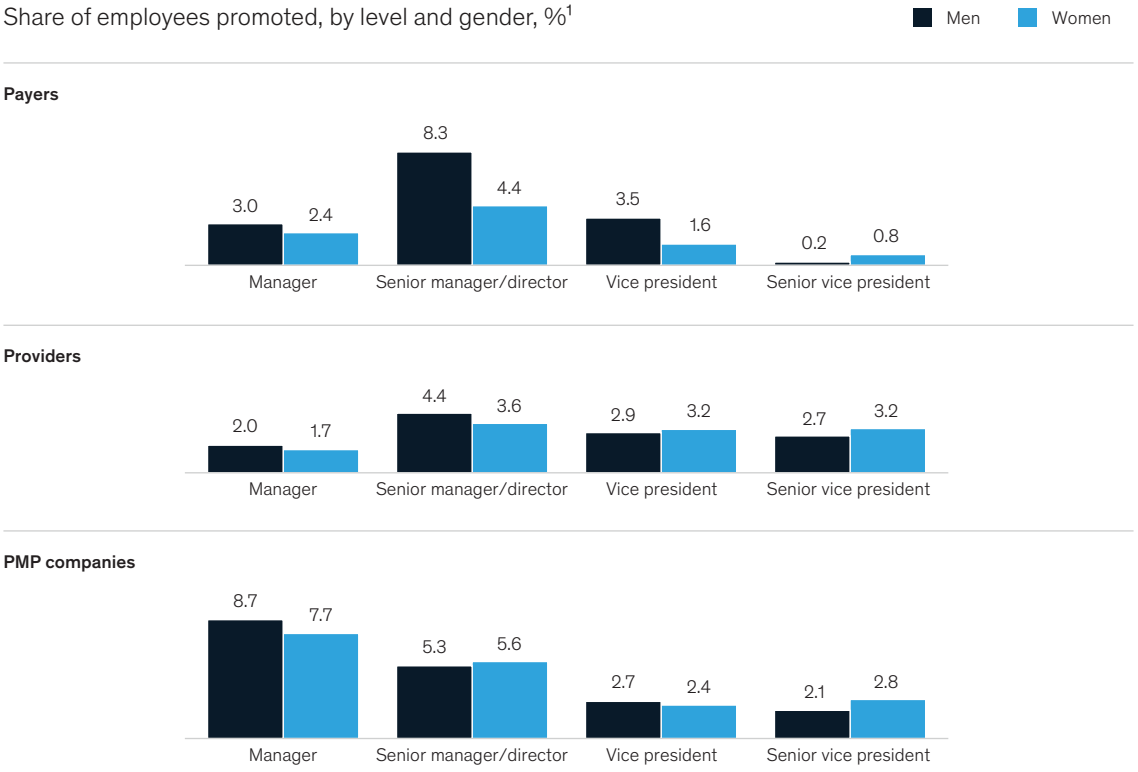


PMP, pharmaceuticals and medical products.

Exhibit 9

Across organization types, women are promoted at slightly lower rates than men through VP, with payers showing the greatest gap.

Share of employees promoted, by level and gender, %[1]



PMP, pharmaceuticals and medical products.
[1] C-suite data omitted due to small sample size.

Promotion rates

In all but the senior most levels, the three subindustries promote women at slightly lower rates than men, with payers showing greatest disparity (Exhibit 9). At payers, for example, men experience higher rates of promotion than women, especially at the senior manager and VP levels where promotion rates for men are almost double t hat for women. While less pronounced, this gender difference also exists in providers and PMP companies at earlier tenures. Gender bias throughout the evaluation and promotion process, as well as support from mentors and sponsors, is a significant contributor to these results.

Attrition

Payers, providers, and PMP companies all exhibit fairly similar attrition levels across the organization, though some gaps begin to emerge at more senior roles (Exhibit 10). In PMP companies, male and female attrition rates begin to diverge at the VP role, a trend that carries through to the C-suite. The most pronounced difference is seen in the C-suite of payers, where the female attrition rate is nearly double that of men. Providers have been more successful at retaining women in the C-suite, with an attrition rate that is around one-third that of payers and PMP companies.

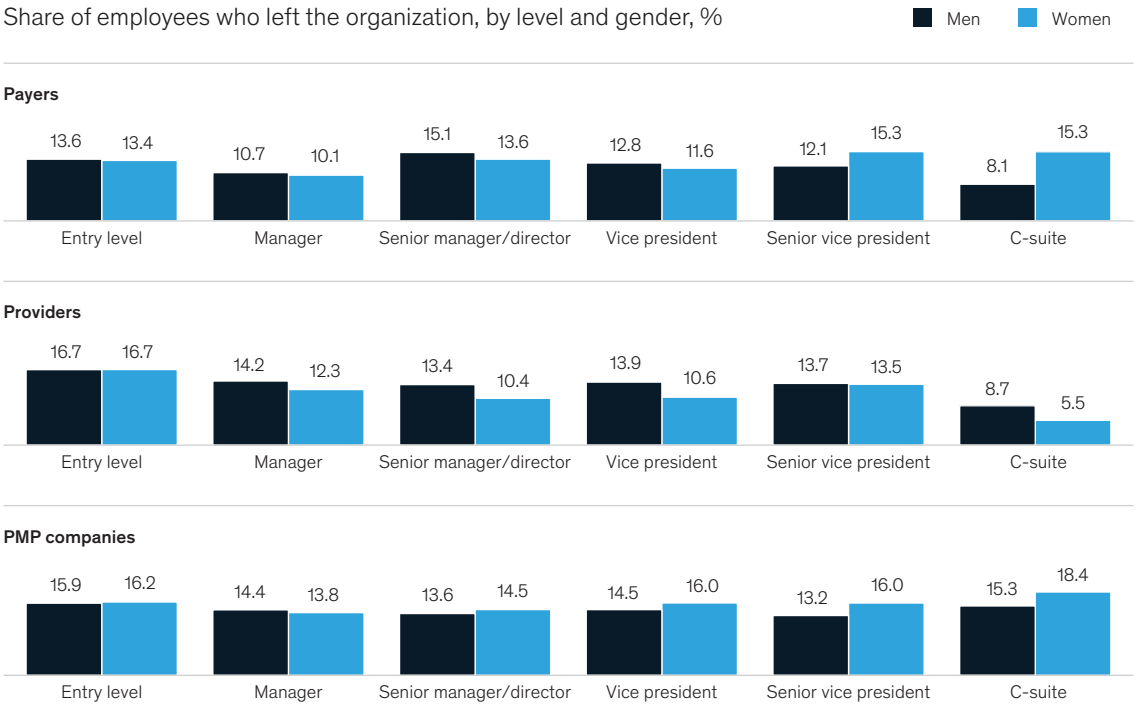
Women of color

In the three subindustries, women of color account for one-fifth to one-third of entry-level positions (Exhibit 11). By senior manager, the share of women of color has dropped to 11 percent across all three. Payers and providers see the sharpest drop at the senior manager level. At payers, for instance, representation of women of color declines by more than half

Exhibit 10

Attrition is fairly similar across organizational types and genders until C-suite.

Share of employees who left the organization, by level and gender, %



PMP, pharmaceuticals and medical products.

at this juncture, while white women experience little to no drop-off.

As discussed in "COVID-19: Investing in black lives and livelihoods,"[3] during the pandemic "Black Americans will likely sustain more damage across every stage of the wealth-building journey. Crucially, 39 percent of jobs held by Black workers (seven million jobs in all) are vulnerable as a result of the COVID-19 crisis compared with 34 percent for white workers." Black women and men tend to be overrepresented in high-contact low-wage essential healthcare jobs but are underrepresented in higher-paid fields such as nursing or physicians. For example, Black people make up more than one-third of psychiatric aides, orderlies, and nursing assistants, but just 10 percent of registered nurses and 5 percent of physicians.[4] Some organizations have made progress. In the United Kingdom, the National Health Service reported that roughly one-third of all people of color reach the top level, compared with 50 percent of all Caucasians.[5] PMP organizations have the lowest representation of women of color compared with payers and provider, ranging from half that of white women at entry level to one-third or less by senior management.

Challenges specific to COVID-19

As the COVID-19 pandemic has caused entire nations to adopt remote work, healthcare companies need to increase flexibility to enable employees to fit work into their lives. Many HR leaders have been excited by the prospect that COVID-19 may accelerate organizational acceptance of flexible working, which would benefit employees with more diverse needs. However, COVID-19 may disproportionally and negatively affect women and communities of color, a pattern that should be closely monitored and addressed.

Recent research suggests that women are working a "double double shift" as a result of the COVID-19 pandemic[6]—equal to 20

hours of additional work—compared with men.[7] Surveys conducted in April 2020, by LeanIn.org and Survey Monkey, found that 31 percent of women with full-time jobs and families say they have more to do than they can possibly handle, whereas only 13 percent of working men with families say the same.

This burden and negative impact are particularly felt by women of color. Black women and men are disproportionately represented in frontline and essential care workers. In addition, even though Black women are already twice as likely to perform housework as Black men, they still shoulder more than half of caregiving responsibilities.[8] Compared with Black men, Black women spend 2.7 times as many hours on unpaid work caring for household members and children and 1.3 times as many hours caring for non-household adults.

Five sweeping actions to take

Once healthcare executives become more familiar with the challenges their organizations and subindustries face through rigorous analyses of the talent pipeline and leakage points, they can start to de-vise and implement targeted interventions. Employers can continue to make promotion practices fair and emphasize communications and transparency to prevent negative attitudes from taking hold and impeding diversity efforts. Fixing the step up to senior manager will set off a positive chain reaction across the entire pipeline, as more women will be available to promote and hire at each subsequent level. Put another way, more entry-level women will rise to middle management, and more women in management will rise to senior leadership.

Exhibit 11

Women of color experience significant drops at senior manager level across healthcare industries.

Share of employees who are women of color, by level, %

PMP, pharmaceuticals and medical products.

Sidebar 2

Targeted support for women of color

To date, some companies have had success in adapting the five steps to promote women of color. A critical step is for executives to take the time to acknowledge the specific challenges faced by this cohort. Important barriers include the concept of being the "only," and the perception of fairness in the workplace. Addressing these experiences and needs directly can help organizations design more targeted interventions while building on other ongoing diversity efforts.

Another hurdle cited by women of color is the glass cliff—that companies are more likely to appoint women to positions of authority during times of crisis, almost as if they are being set up to fail. Sponsors and mentors should be aware of this dynamic when advising women of color on career opportunities. However, women of color seeking leadership are often more than ready to take on those challenges.

Healthcare companies can take five specific actions to fix representation at the manager and senior manager levels. These actions are aligned with our broader research but have been tailored to the healthcare industry and its challenges. Since women of color face additional challenges, these actions should be adapted to this group's needs (see Sidebar 2, "Targeted support for women of color").

Set a goal for getting more women and women of color into senior management

Healthcare companies should set and publicize an ambitious target for expanding the number of women at the senior manager level. Moreover, companies should establish goals for hiring and promotions—the processes that most directly shape employee representation. To increase female representation at executive levels, companies can focus on ensuring female representation across entry-level roles, particularly where senior leaders traditionally develop out of. They can also create and cultivate "non-traditional" senior leadership pathways for frontline staff (for example, nursing, case managers). For example, companies can offer frontline employees training and capability-building opportunities to develop the skill set that would qualify them for increasingly senior positions.

Require diverse slates for hiring and promotions

Organizations are more likely to ensure diverse slates of candidates for promotions at senior levels than entry-level positions. Research[9] has found that a more diverse selection of candidates can be a powerful driver of change at every level. When two or more women are put forward for consideration, the odds that a woman will be promoted rises dramatically. This could be particularly beneficial in more formal promotion processes, like that which nursing floor or unit managers may face for the first time when being considered for more senior roles.

Put evaluators through unconscious bias training

Unconscious bias can play a large role in determining who is hired, promoted, or left behind.[10] Companies are less likely to offer unconscious bias training to employees who participate in entry-level performance reviews compared with senior-level reviews, but mitigating bias at this stage is particularly important. Since candidates have less experience early in their careers, evaluators may make assumptions about their future potential based on their gender. Healthcare companies should invest in training to educate all evaluators on unconscious bias and

create allies for women in early stages of career advancement. This training may be particularly beneficial for payers, where unconscious bias may be playing into the promotion rate for men at the senior manager level being nearly twice that for women.

Establish clear evaluation criteria

Companies must ensure the right processes are in place to keep bias from affecting hiring decisions and reviews. A critical step is establishing well-defined evaluation criteria in advance of the review process. Evaluation tools should also be intuitive and developed to aggregate objective, measurable input. Organizations should also promote transparency and communicate the fairness and objectivity of review processes. These efforts will ensure that the progress women make is perceived as merit-based by the entire workforce.

Put more women in line for the step up to senior manager

Women must accumulate the experience they need to prepare for management roles and raise their profile so they are considered for senior-level positions. The building blocks are not new—leadership training, sponsorship, high-profile assignments—but many companies need to redouble their efforts to provide female employees with access and opportunities. It is especially important to do so across all roles (for example, physicians, R&D scientists) so that diverse talent is more evenly distributed with equal opportunity for advancement. According to 2017 Women in the Workplace research, women who receive career guidance and direction from their managers and senior leaders are more likely to be promoted. Healthcare companies should seek to obtain data on the performance of their current programs and identify employees who don't have sponsors and mentors. For instance, an organization could pair women with a senior leader who is tracking their progress and speaking on their behalf.

Our hope is that the events of 2020 will serve as a galvanizing force for change. This moment represents an opportunity for healthcare stakeholders to change the industry's narrative and environment—and improve people's lives in the process. The recommendations we have laid out can help organizations maintain their focus on gender diversity as competing priorities vie for attention and resources. Only through a sustained commitment will healthcare companies ensure that their workforce reflects the communities they serve.

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This article was edited by Elizabeth Newman, an executive editor in the Chicago office.

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Prioritizing health: A prescription for prosperity

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Better health promotes economic growth by expanding the labor force and by boosting productivity, while also delivering immense social benefits.

By June 2020, the COVID-19 pandemic had caused hundreds of thousands of deaths around the world, triggered the largest quarterly contraction of global GDP ever recorded, and left hundreds of millions of people without jobs.[1] The associated costs are unprecedented, reaching into trillions of dollars. Yet even in normal circumstances, poor health takes a heavy personal and economic toll. In a typical year, 17 million people die prematurely from a variety of long-term health conditions, many of which are avoidable.[2] About eight million people die annually—over one-third before reaching their 20th birthday—from infectious diseases that are largely preventable and treatable, amounting to almost 250 million years of lost future life.[3] Almost one billion people worldwide suffer from mental health disorders, including more than 200 million children.[4] And then there are accidents. About 4.5 million people die each year from accidental injuries, with 80 percent under the age of 70.[5] What would happen if avoidable health conditions were successfully addressed? And what if mental health were improved and accidents reduced?

In this report, we examine what it would take to improve the health of the world's population and calculate the benefits for individuals, societies, and the global economy. We show that with existing treatments and preventive health interventions, the global disease burden could be reduced by about 40 percent over the next 20 years, a path that we refer to as the healthy growth scenario (see Sidebar 1, "Our research methodology").[6] That means about one-third fewer deaths from cancers and cardiovascular diseases and about 60 percent fewer deaths from tropical diseases and malaria. Overall, 230 million more people would be alive by 2040. The economic payoff would be significant as their productive potential is realized. By expanding the labor force and increasing productivity, we estimate, the health benefits could be worth $12 trillion in additional annual global GDP in 2040, an 8 percent uplift to GDP without including additional benefits from future innovations and welfare gains. Improving global health would also improve the resilience of societies and economies when they face unexpected health shocks such as pandemics. But the best part is this: many of the benefits we size can be achieved without significant additional costs. In fact, in higher-income countries, implementation costs could be more than offset by moderate productivity gains in the healthcare system.

That does not mean capturing the health and economic benefits will be easy. It requires reorienting thinking about and investing in health and healthcare delivery, as well as fostering healthier living conditions and changing behavior. It also requires changes in the workplace and economic policy to allow, among others, increased participation of older people in the workforce. However tragic and destructive it has been, COVID-19 has placed society at a unique point in time to prioritize health. Could there be a better moment to invest in global health to promote well-being and prosperity?

Sidebar 1

Our research methodology

In this report, we measure the potential to reduce the burden of disease globally through the application of proven interventions across the human lifespan and quantify the impact on population health, the economy, and wider welfare over the period to 2040. We often use shorthand throughout this report to refer to this potential as the healthy growth scenario. Our work provides a pragmatic assessment of the range of interventions that could lead to meaningful health improvement at the population level and boost long-term global economic growth prospects. We conduct our analysis for almost 200 countries; our global, regional, and income-level analyses are aggregated from the country-level analysis.[1]

Assessment of the potential to reduce the disease burden

We source our disease burden forecasts to 2040 from the Global Burden of Disease data set developed by the Institute for Health Metrics and Evaluation (IHME) at the University of Washington. This data set includes diseases that cause death and contribute to years lived in poor health. We define diseases broadly as health conditions that affect quality of life, including infectious diseases, chronic conditions, and injuries.

To estimate the reduction in the disease burden achievable in our healthy growth scenario, we conducted a detailed review of clinical evidence and guidelines to identify the interventions, both currently available and in the pipeline, with the greatest potential for scalable reduction of today's disease burden. We did so systematically for the top 52 diseases, which contribute to almost 80 percent of global disease burden, and relied on clinical guidelines and evidence from leading institutions such as the World Health Organization, Disease Control Priorities Network, and academic journals such as *The Lancet*, *New England Journal of Medicine*, and *British Medical Journal* to estimate the health improvement potential. In all cases, our aim was to identify a basket of highly effective interventions with wide applicability, roughly 150 in total, rather than to catalog all possible interventions that might be found in a well-resourced and comprehensive healthcare system.

For each individual intervention for the 52 diseases, we followed three steps. First, we sized the health improvement potential. This is an estimate of the share of the disease burden that could be averted through rigorous application of an intervention affecting people with the disease. Second, we estimated the potential to increase adoption from current levels in countries that fall within four income archetypes (high, upper middle, lower middle, and low). For interventions that require ongoing compliance with a treatment program, this adoption estimate includes the sustained adherence and not just initial uptake. Third, we estimated the time required to reach the full impact. This involved two considerations: the time needed for implementation, and the time lag between delivering the intervention and gaining the health benefits from it. Where evidence on current or potential levels of adoption was limited, we made reasonable assumptions based on principles set out in the technical appendix.[2]

Sidebar 1

Our research methodology *(continued)*

Quantification of the economic impact
To quantify the economic impact of these health improvements, we relied on population and labor force forecasts to 2040 and incorporated the impact of health improvements by age group each year. We then translated the improvements in population health to labor force participation and labor productivity and to GDP through four channels: fewer premature deaths; lower rates of disability among the potential labor force; higher labor market participation among healthier older people, informal caregivers, and people with disabilities; and higher productivity of a healthier workforce. The assumptions used to estimate impact across each of these channels were drawn from academic research where available and tested with an expert advisory group of economists.

Uncertainties in our analysis
A number of uncertainties are inherent in an attempt to understand how global health could be improved and what the benefits would be in 20 years. These uncertainties surround the evolution of the global disease burden, the availability and effectiveness of different interventions (both those currently in use and those in development) in diverse populations, and the impact of improvements in health on society and the economy. We manage these uncertainties in each step of our analysis in the following ways:

1. **The evolution of the disease burden.** While McKinsey & Company employs many medical experts and scientists, we are not a disease forecasting firm. We rely on disease burden forecasts provided by IHME, which maintains the most comprehensive database of the global disease burden. Forecasts of the global disease burden are inherently uncertain and health shocks such as the COVID-19 pandemic may affect forecasts.
2. **The availability and effectiveness of interventions.** Our estimates are a snapshot of a very large scientific evidence base that is constantly evolving, often inconclusive, and uneven (in quantity and quality) across disease areas and specific interventions. In addition to the uncertainty inherent in the underlying evidence and our interpretation of it, other aspects of our methodological approach influence our findings. We have mitigated them by sharing and reviewing our approach and interim results with academic and clinical experts at all stages of the research processes, and by providing a detailed description of our method and sources in the technical appendix and bibliography.
3. **Future innovations.** Research and development in the life and medical sciences is inherently risky and uncertain as is the future rate of adoption of any new technology. We attempted to constrain these inherent uncertainties by looking only at technologies at relatively later stages of development—those that had already passed initial hurdles—and by looking at defined yet relatively broad innovation categories rather than at individual products. We shared and reviewed our method and findings with experts in the field at all stages of the research.

(continued)

Sidebar 1

Our research methodology *(continued)*

4. **Economic potential.** In the economic analysis, we make assumptions about what labor market choices people can and choose to make if health benefits are realized. Importantly, we make assumptions about rates of participation in the labor force for groups at different ages and in different health states. These assumptions are grounded in evidence, such as statistics on current and historical rates of labor force participation by age group, country, and health status. Another key assumption was that the labor market could fully absorb additions to the workforce at average levels of productivity. We addressed this uncertainty using a sensitivity analysis, based on a dynamic equilibrium economic model.

What this report does not do

This report does not forecast health trends. Its purpose is to provide a sense of the magnitude of potential health and economic benefits that could be achieved by more broadly applying known interventions. Our estimates are not predictions, and we recognize the significant changes needed to achieve the identified health gains in just two decades. We also recognize the risks and threats that could alter the underlying disease burden and the validity of our estimates. In particular, the near- and long-term consequences of new diseases, such as COVID-19, and our response to them, will affect this underlying burden in ways that we cannot reliably quantify today.

This report does not assess current and future healthcare costs. Instead, we provide a high-level estimate of the cost implications of shifting to a healthy growth path by drawing on published research assessing the net cost for countries to implement the interventions identified. These implementation costs are incremental to current healthcare spending but could be largely offset by productivity gains in healthcare spending in middle- and high-income countries.

This report does not make recommendations about spending by any government or organization. It is intended to provide insight into what is possible to achieve with a broad-based improvement in global health. While our study provides a guide for how to improve the health of the world's population, every country has unique local health and economic conditions that should be considered to determine the most effective interventions in each case.

[1] Country-level data on disease burden are based on the best available evidence; reliability for individual countries varies. In general, epidemiological data are less reliable in lower-income countries, where the resources for disease surveillance, data collection, and quality assurance are limited. We use the World Bank classification system, which groups countries into four categories based on gross national income per capita: low income, lower-middle income, upper-middle income, and high income. Afghanistan and Ethiopia are examples of low-income countries, while India and Kenya are examples of lower-middle-income countries. China and Brazil are the largest upper-middle-income countries, and the United States, Japan, and all countries in Western Europe are examples of high-income countries.

[2] For example, in smoking cessation we assume that adoption of the full range of interventions could reach 50 percent of smokers over 20 years in all countries, and that this would reduce the disease burden medically associated with tobacco use by 59 percent (the effect of giving up smoking) among them, leading to an overall reduction in the disease burden associated with smoking of 29.5 percent over 20 years. For pneumococcal vaccine for people with chronic obstructive pulmonary disorder (COPD), we assume that adoption could increase by 20 percent in high- and upper-middle-income countries over 10 years, and by 60 percent in low- and lower-middle-income countries over 15 years. Based on assessment of clinical evidence, we assume this intervention would reduce the disease burden associated with pneumonia in people with COPD by 29 percent (the mortality reduction observed in vaccinated patients), leading to an overall reduction of 6 percent (higher income) to 17 percent (lower income) of the disease burden associated with pneumonia in COPD over ten to 15 years.

Better health was a catalyst for economic growth in the past and can be a powerful driver once more

Over the past century, improved hygiene, better nutrition, antibiotics, vaccines, and new technologies, among others, have contributed to tremendous progress in global health. Recent innovations have led to dramatic improvements in survival rates for people with certain types of cancer, heart disease, and stroke in many countries.[7] Improvements in health have extended lives and improved quality of life, contributing to the rapid expansion of the labor force and labor productivity in the second half of the 20th century, which were key factors behind strong economic growth over that period (Exhibit 1).

As countries grew richer, they invested in better food and safer environments, creating a virtuous cycle of improved health and higher incomes. Economists estimate that about one-third of economic growth in advanced economies in the past century could be attributed to improvements in the health of global populations.[8] Research focused on more recent years has found that health contributed almost as much to income growth as education.[9]

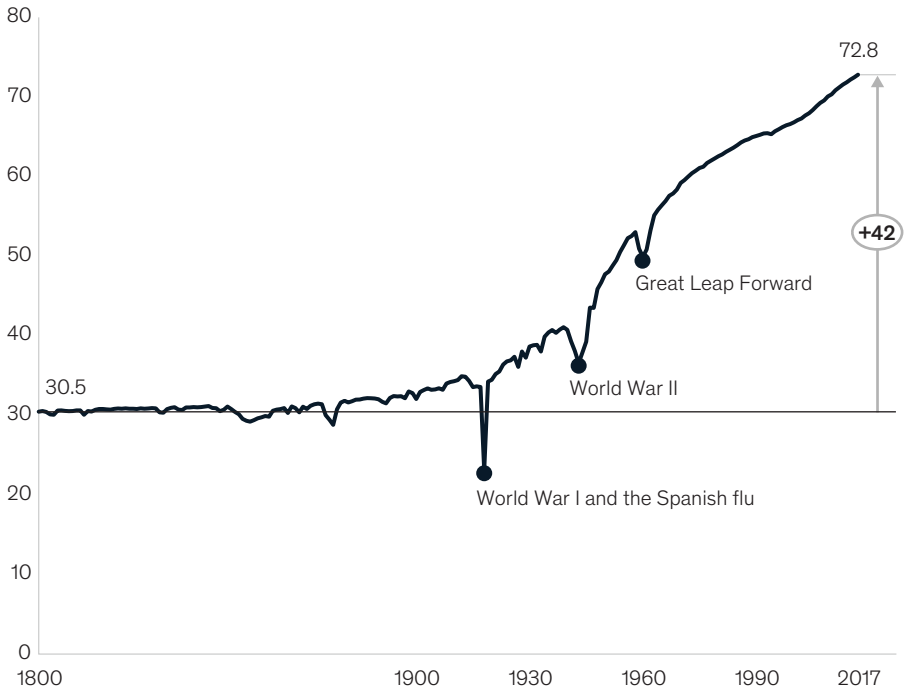
Despite the progress of the past century, in a typical year, poor health and health inequity continue to limit economic prosperity. This plays out in two ways.

First, premature deaths limit growth by reducing the size of the potential labor force. Cardiovascular disorders and cancers are the top

Exhibit 1

As health improved in the 20th century, life expectancy more than doubled and the global labor force expanded.

Global life expectancy at birth, 1800–2017, years



	1800	1900	1930	1960	1990	2017
Global population, billion	0.9	1.6	2.0	3.0	5.3	7.5

Source: Gapminder.org; McKinsey Global Institute analysis

Cost of ill health was more than $12 trillion in 2017, 15 percent of global GDP.

conditions that affect the mortality of populations aged 15 to 64, and 55 percent of those premature deaths occur in low- and lower-middle-income countries. A disease such HIV/AIDS takes an exceptionally high toll on the economy because it disproportionately affects people of prime working age. On top of the widespread humanitarian crisis from HIV/AIDS in the 1990s and 2000s, the pandemic particularly affected Southern and Eastern Africa, where HIV prevalence rates among miners were as high as 25 percent in some areas.[10]

Second, poor health or morbidity makes it hard for those suffering from health conditions to be economically active and realize their full productive potential. In 2017, a total of 580 million person-years were lost to poor health among those aged 15 and 64, leading them to be absent from work or quit employment altogether.[11] In mature economies, one in five workers suffer from a chronic condition—commonly, low back pain, migraine and headache, and anxiety and depression—that affects their productivity at work.[12] For example, in Europe, people with more than one chronic condition are 20 percentage points less likely to be employed than their peers.[13] Moreover, employees managing chronic conditions experience higher levels of "presenteeism," defined as being at work but not fully functioning because of illness. In the United States, employees with depression are estimated to lose four hours per week due to presenteeism.[14] In low-income countries, infectious diseases such as tuberculosis (TB) present the largest losses to labor supply and household income. The recovery time for TB is several months, and studies have shown that patients lose three to four months of work time when diagnosed.[15] This can affect output substantially and force households into debt and poverty.[16]

Overall, we estimate that the cost of ill health was more than $12 trillion in 2017, 15 percent of global GDP—or about the same size as China's economy in that year.[17] Health shocks such as the COVID-19 pandemic, H1N1 influenza, and SARS can result in additional humanitarian and economic costs. The effects of the COVID-19 pandemic, such as the shelter-in-place measures to control the spread of the virus, are forecast to reduce global GDP by 3 to 8 percent in 2020.[18]

Health has not typically been part of economic growth discussions, especially in developed countries where the recent debate has revolved around the cost of healthcare, with a few exceptions. We hope this report contributes to a greater understanding of the many ways in which health influences the economy and encourages further research into the link between health and economic prosperity.[19] Investments in health could also play an important role in promoting economic recovery in the wake of the COVID-19 pandemic. Furthermore, a number of trends suggest that health may well matter more for growth in coming decades. First, improving health can counter the drag on growth that results from slowing population growth. Labor force growth globally is expected to slow from an annual rate of 1.8 percent over the past 50 years to 0.3 percent in the next 50 years.[20] At the same time, the demand for highly skilled knowledge workers is increasing.[21] Improved health can help counter these longer-term headwinds by extending healthy lifespan for workers of prime working age and older, and by developing the physical and cognitive ability of children, the future labor force of the world.[22] Second, health is no longer improving in all regions because obesity-related conditions and mental health challenges are burdening people of all ages, including those of prime working age. In addition, persistent and in

many cases growing health inequity creates a gap in health outcomes between rich and poor within societies.[23] Third, healthier populations are more resilient in the face of new infectious diseases, like COVID-19, that often present higher risks to people with existing health conditions.[24]

Use of known interventions could cut the global disease burden by about 40 percent and extend active middle age by ten years

While global health has advanced tremendously during the past century, gains are projected to slow in the future, especially as age-related health conditions become more prevalent. Fortunately, proven interventions are available to tackle some of the most common chronic conditions and infectious diseases. We analyzed the current and future disease burden and found that by more comprehensively applying known interventions, the current global disease burden could be reduced by about 40 percent by 2040.

Overall health improvements are slowing as chronic conditions continue to increase

The global disease burden is projected to decline at a slower rate than in the past, especially in mature economies where the population is aging and facing more age-related health conditions. The disease burden is measured in disability-adjusted life years, known as DALYs, by the Institute for Health Metrics and Evaluation (IHME), the institution that maintains the leading database on the global disease burden. Because each DALY reflects a year of good health lost, health improvements can be measured by the number of DALYs averted.[25] According to IHME, over the next 20 years, the global threat posed by infectious diseases such as malaria, tuberculosis, and HIV/AIDS is expected to diminish because of concerted efforts to implement effective treatments (Exhibit 2). While the COVID-19 pandemic has led to an unexpected spike in mortality, our analysis at the time of publication suggests that the impact of premature deaths during the initial wave of the disease is unlikely to materially shift population projections for 2040.[26] Greater health gains are expected in low-income countries, many of which lag behind higher-income countries in life expectancy and other measures of health, mainly from preventable and treatable causes such as diarrhea and malaria, nutritional disorders, and poor child and maternal health.

A challenge in all countries is the threat of lifestyle- and obesity-related chronic conditions such as diabetes, cardiovascular disease, and some cancers, all of which tend to rise with income and age.[27] Age-related conditions, such as Alzheimer's disease and other dementias as well as vision and hearing loss, are also expected to increase as populations age. As a result, in many high-income countries, healthy life expectancy—years lived in good health—is not keeping pace with rising life expectancy, and additional years gained at the end of life are increasingly spent in poor health.

In addition, many countries may experience additional disease burden associated with the immediate and longer-term consequences of the pandemic, such as delays in diagnosis and treatment of serious conditions such as cancer and tuberculosis, and negative health consequences of substantially higher levels of unemployment.[28]

With known interventions, ten years could be added to middle age and child mortality could be reduced by 65 percent

We estimate that the current global disease burden in 2040 could be reduced by about 40 percent by applying known interventions in broader segments of populations and with closer adherence to the most effective tools available. This is an aspirational yet realistic estimate given current knowledge and proven practices.

A reduction in the global disease burden of this magnitude would deliver significant health benefits. Child mortality could drop by 65 percent by 2040. Cancer deaths could decline by about 30 percent, cardiovascular disease deaths by about 40 percent, and

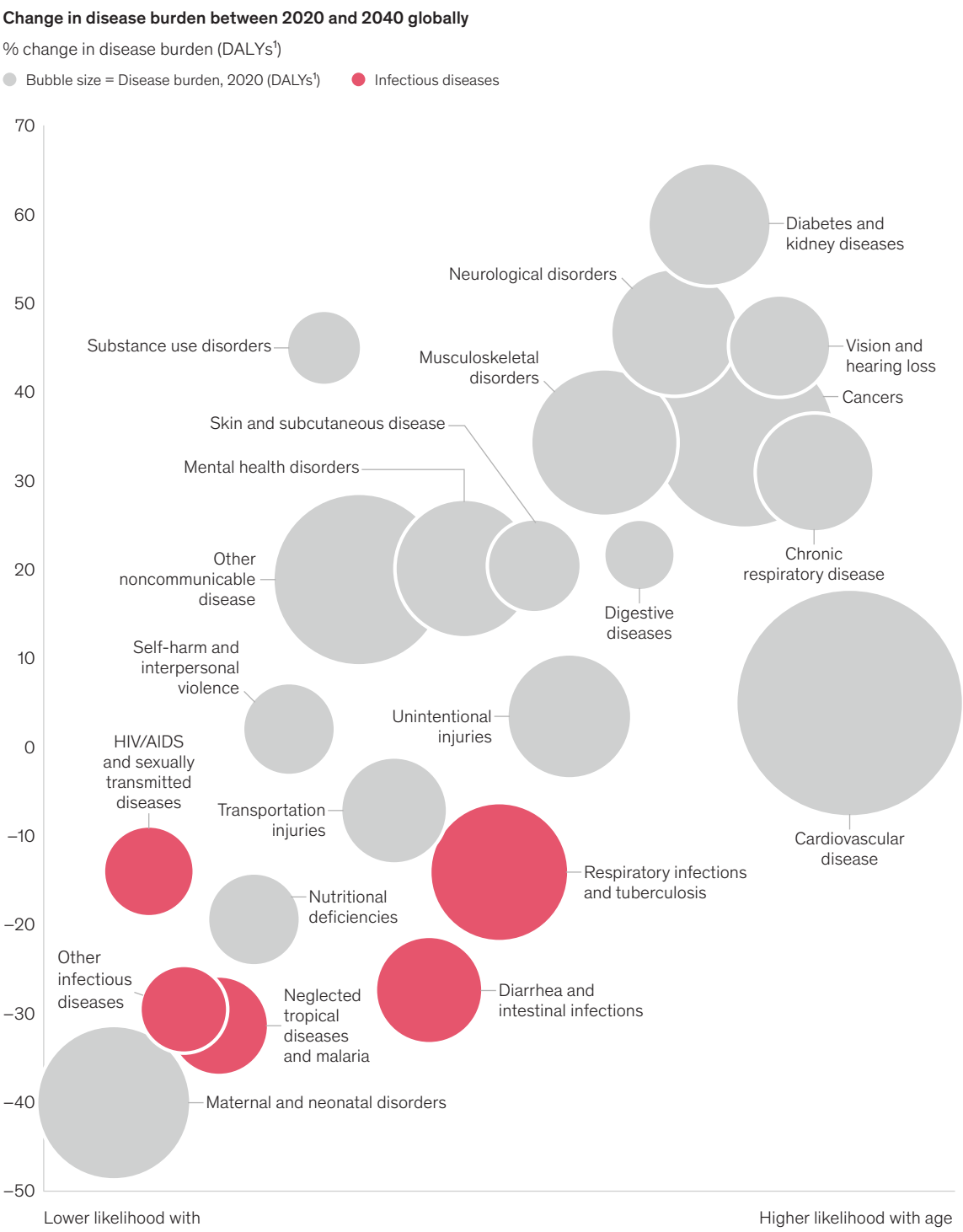
10

number of years healthy middle age could be extended

Exhibit 2

Looking ahead, incidence of age- and lifestyle-related diseases is expected to rise while many infectious diseases could decrease significantly.

Disease baseline forecast



[1] DALY, disability-adjusted life year.

Source: Global Burden of Disease Database 2016, Institute for Health Metrics and Evaluation, used with permission, all rights reserved; McKinsey Global Institute analysis

neglected tropical diseases and malaria deaths by about 60 percent. Overall, 230 million more people would be alive in 2040, half of them under the age of 70. For people at middle age, the shift could extend the number of years in good health by a decade, essentially making 65 the new 55.[29] Every region in the world would experience an improvement in this range.

While we find that the overall potential to improve global health is substantial, known interventions vary widely in their capacity to battle specific diseases (Exhibit 3). Some conditions, like diarrhea, respond to effective, low-cost interventions such as oral rehydration that have already helped eradicate them in most high-income economies. Making those interventions available consistently and at scale to the people who need them could similarly reduce the global burden. For other conditions, such as diabetes and cardiovascular disease, prevention and disease management are well understood, but measures to ensure people follow through by taking medication, changing their diet, and exercising, for example, are lacking. Finally, some conditions, like Alzheimer's disease and some types of mental health disorders, are currently beyond medicine's ability to prevent or treat effectively; for these, the disease burden in coming decades is likely to increase until more effective therapies are discovered and implemented.

Over 70 percent of the health benefits we size come from prevention through healthier environments, behaviors, and preventive care

It has long been known that prevention plays a key role in delivering health benefits. Our analysis demonstrates that the vast majority of health benefits, over 70 percent, are achievable not by treating disease but through preventing it (Exhibit 4).[30] In fact, one of the most effective ways to improve health is to invest in communities so that children can grow up and live long and healthy lives as adults. Unpolluted air and water, affordable healthy food, and health literacy shape individual behavior and, together with preventive care (for example, safe childbirth, vaccinations), help reduce the disease burden over the long term. The remaining 30 percent of benefits come from proven therapies to treat existing health conditions.

While these interventions may be known, they are not reaching the people who need them at the right time today. The main challenges include societal failure to assess and address the many unaddressed social and environmental health risks, current incentives that encourage healthcare providers to focus on treatment rather than prevention, and the individual tendency to prioritize immediate needs over longer-term health. The challenge of transitioning to a healthy growth scenario is that it requires change far beyond healthcare systems alone.

A large share of the identified health improvements would cost less than $100 per additional healthy life year

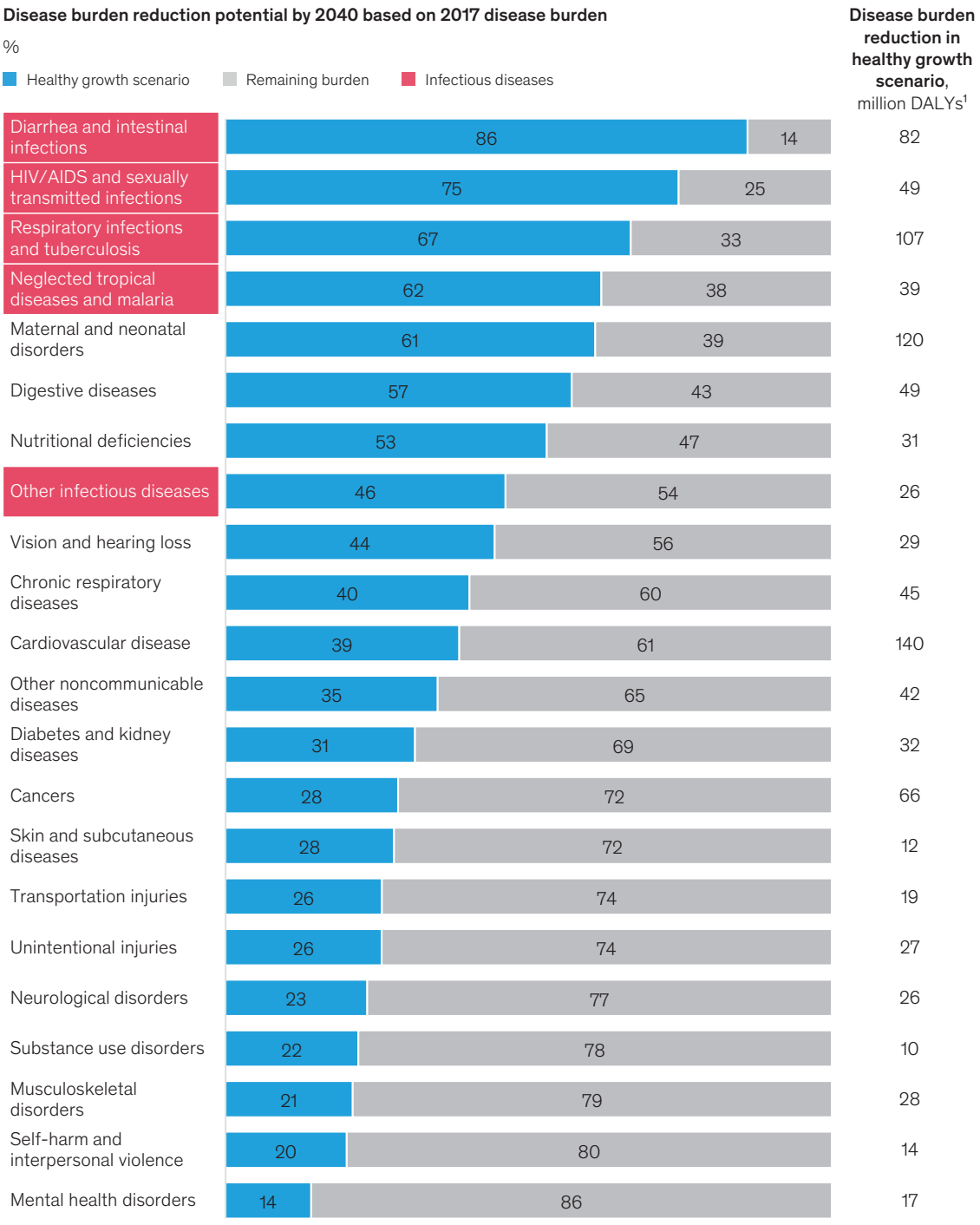
Cost curves identify interventions with the highest health benefit at the lowest cost. Because the costs of delivering better health vary widely, we estimate them separately for four country income archetypes.

In low-income countries, we find the most cost-effective interventions (lowest incremental cost of reducing one year lived in poor health) include childhood immunizations, prevention and treatment of malaria, safe childbirth, better nutrition, and cardiovascular disease prevention. In these countries, the younger population are major

For people at middle age, the shift could extend the number of years in good health by a decade, essentially making 65 the new 55.

Exhibit 3

The potential to reduce the disease burden varies significantly by disease type; chronic conditions are more challenging to tackle.



[1] DALY, disability-adjusted life year.
Note: Figures may not sum to 100% because of rounding.
Source: Global Burden of Disease Database 2017, Institute for Health Metrics and Evaluation,iusedwith permission, all rights reserved; McKinsey Global Institute analysis

Exhibit 4

Over 70 percent of the health improvement potential from known interventions comes from environmental, social, and behavioral interventions, and preventive health measures.

Disease reduction potential by intervention type, 100% represents the 41% reduction in the global disease burden

	Top 3 in category	Description	Examples
33% Environmental, social, and behavioral	Dietary interventions 7%	Interventions designed to support people to achieve a nutritious and balanced diet, and to meet specific nutritional goals for people with conditions affected by their dietary intake and weight	• Iron fortification of staple foodstuffs • Nutritional guidance and education for supported weight management
	Supported behavior change 7%	Interventions designed to encourage sustained changes in lifestyle and behaviors, including levels of physical activity, eating habits, substance use, and management of stress	• Fitness tracking app, including goal setting, guidance, and monitoring • Peer support group for substance use disorders
	Smoking cessation 4%	Full range of national and local policies and support programs to reduce uptake of smoking and encourage smokers to quit (including policies affecting pricing, marketing, and availability of tobacco products; smoking bans; and cessation support)	• Taxation of tobacco products • Nicotine-replacement therapy
38% Health promotion	Vaccines 11%	Medical products designed to provide immunity against a specific disease or group of related diseases by stimulating production of antibodies in individuals receiving the vaccine without inducing development of full disease	• Measles, mumps, and rubella (MMR) • Hepatitis B vaccine • Seasonal influenza vaccine
	Safe childbirth 9%	Provision of an appropriately equipped and resourced setting for intrapartum care that addresses main risks to maternal and neonatal health (eg, hemorrhage, infection, obstructed labor, complications related to prematurity)	• Presence of certified midwife or obstetrician • Clean delivery room and sterile equipment • Treatment of preeclampsia and eclampsia
	Medicines for heart disease, stroke prevention, and diabetes 7%	A range of medicines that reduce risk of disease progression, complications, and mortality from these conditions by regulating blood pressure, cholesterol levels, and blood glucose levels; improving blood flow; and reducing risk of blood clots developing	• Antihypertensives • Statins for cholesterol reduction • Metformin for diabetes
29% Therapeutic	Anti-infective medicines 10%	A range of medicines that treat or manage infectious diseases including bacterial, viral, or fungal infections, either by killing the pathogen (eg, bacteria or other microorganism) or slowing or interrupting its growth and ability to replicate	• Antibiotics for pneumonia • Antiretroviral therapy for HIV • Artemisinin combination therapy for malaria
	Specialist surgery 5%	A range of surgical or interventional procedures used to treat complex conditions such as advanced heart disease, and major trauma; includes routine day surgery procedures (eg, cataract surgery)	• Cardiac catheterization • Major trauma surgery • Neonatal surgery
	Counseling and talking therapies 3%	Interventions designed to address a range of conditions including mental health disorders, substance use disorders, and self-harm, using psychological techniques and talking in group or individual settings	• Cognitive behavioral therapy • Addiction therapy (eg, 12-step programs)

Source: McKinsey Global Institute analysis

beneficiaries, with 42 percent of the healthy life gains going to people under 20 years of age, compared with 18 percent globally. More than 35 percent of the disease burden can be reduced for under $100 per year of healthy life year gained. For example, diarrhea is a leading cause of preventable childhood mortality worldwide. Almost 90 percent of these deaths could be averted with basic interventions including oral rehydration solutions and oral zinc supplementation, adequate sanitation, and comprehensive childhood immunization.[31]

70%

share of interventions from prevention

In lower-middle-income countries, we find midwife-assisted safe childbirth could deliver 1 percent of the total addressable disease burden for 0.1 percent of the total additional costs. Treatment for malaria and TB, and prevention of cardiovascular disease, with support and education for lifestyle change and pharmacological prevention are also very important. More than half of the total health improvement opportunity identified could be delivered through interventions with incremental costs of less than $100 per year of healthy life gained. Compared to countries with low incomes, a higher share of health improvement can be delivered at lower unit costs in these countries, because the base level of infrastructure—for transport and logistics as well as healthcare—reduces some of the challenge and costs of getting care to the people who could benefit.

In upper-middle- and high-income countries, the greatest health improvement could come from increased use of known preventive strategies for cardiovascular disease and diabetes including weight management, smoking cessation, and prevention and treatment of substance use disorders and low back pain. In all of these conditions, a common challenge is encouraging initial uptake in those who would most benefit and achieving sustained adherence to both medications and behaviors over many years. Cardiovascular disease prevention with medication (a combination of antihypertensives and statins) along with lifestyle education could address 3 percent of the addressable disease burden in upper-middle-income countries and would account for only 0.02 percent of the total additional costs. Even in high-income countries, we find that almost 60 percent of interventions cost less than $1,000 per year of good health (Exhibit 5). Australia's approach to smoking cessation is an example of public policy intervention.[32] Smoking prevalence in Australian adults fell from 35 percent in 1980 to 14 percent in 2016, with similar sharp decreases in tobacco consumption by teenagers. Key interventions included awareness and media campaigns, comprehensive bans on tobacco advertising, assistance programs to quit smoking, banning smoking in public places, and high taxes on cigarettes.

In addition to interventions that improve health, steps to prepare for future health shocks such as pandemics will be important across countries (see Sidebar 2, "Societies will also need to consider how to prepare for a broad range of potential health shocks, including future pandemics").

Ten innovations in the visible pipeline could reduce the total disease burden by a further 6 to 10 percent by 2040

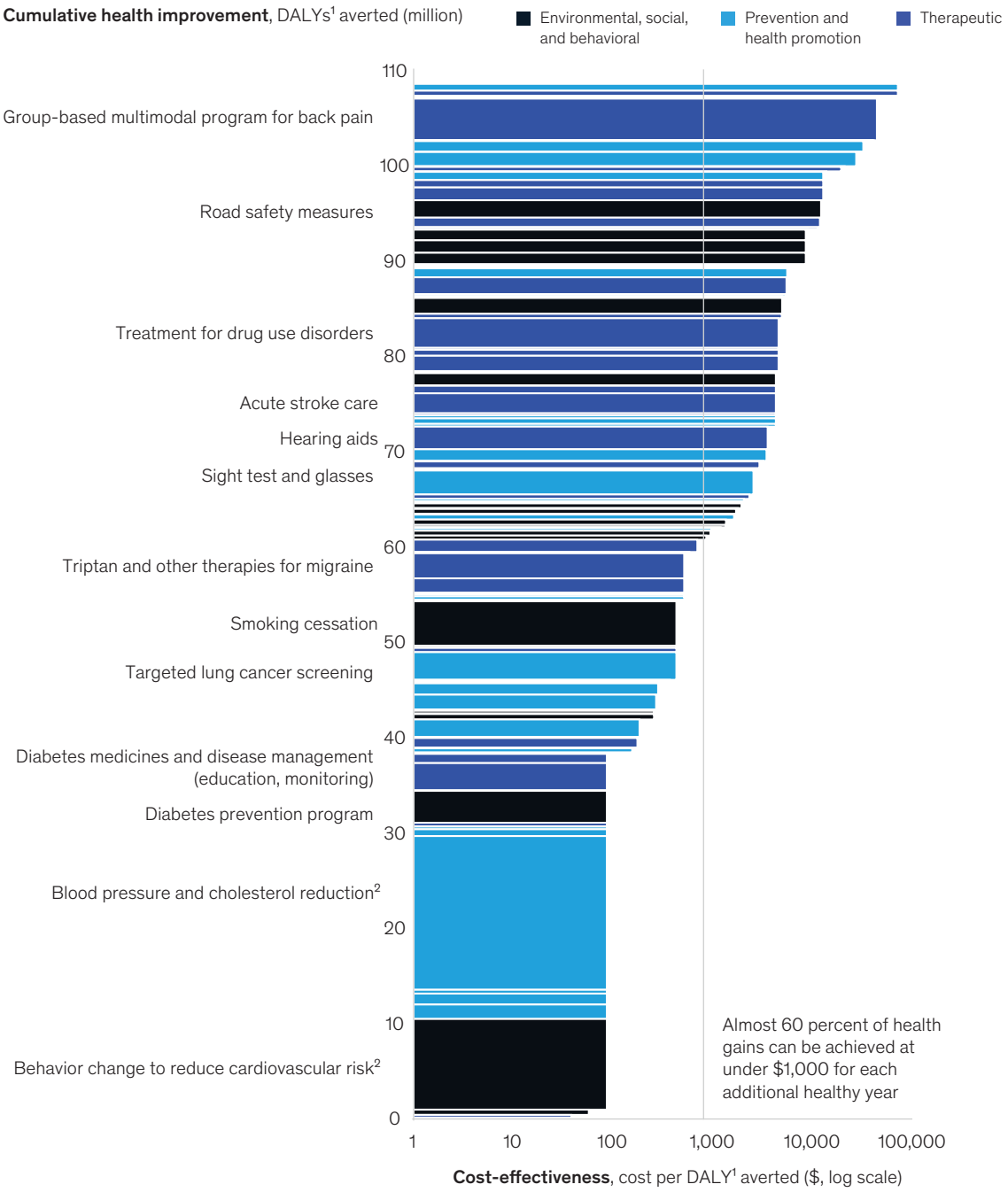
Today's interventions are the innovations of the past. Without them, healthy lifespans would not be as long as they are. Innovation continues to be critical to tackle diseases without a known cure as well as help us increase uptake and adherence to interventions we know work. Leading the list of diseases without a known cure are mental health and neurological disorders, cardiovascular disease, and cancers. The good news is that innovations that completely change the lives of patients continue to emerge and prove the continuing power of innovation. One example is the nearly 70 percent reduction in premature death due to chronic myeloid leukemia in Switzerland from 1995 to 2017.[33]

We identify ten promising innovations in progress that could have a material impact

Exhibit 5

In high-income countries, cardiovascular disease prevention and smoking cessation have the most potential to improve health.

High-income countries



[1] DALY, disability-adjusted life year.
[2] Pharmacological prevention of cardiovascular disease includes use of antihypertensives and statins (and/or other cholesterol-lowering medicines). Cardiovascular lifestyle education includes physical activity, diet, smoking cessation, and alleviation of other risks. These interventions are delivered as a combined program.
Note: Interventions are ordered in ascending order of cost for every healthy life year. The higher the disease burden reduction potential, the larger the width under each intervention.
Source: Institute for Health Metrics and Evaluation, used with permission, all rights reserved; WHO, Updated Appendix 3 of the WHO global NCD action plan 2013–2020, April 2017; "Disease Control Priorities 3 (DCP-3): Economic evaluation for health," University of Washington Department of Global Health, 2018; Tufts Cost-Eectiveness Analysis Registry; McKinsey Global Institute analysis

on health by 2040 (Exhibit 6). We determined these technologies by focusing on areas with the greatest combination of unmet need, biological understanding of the disease pathway, and the effort and excitement surrounding each, measured by funding. While identifying and sizing the potential scope of innovations in the pipeline is inherently difficult, we estimate that these technologies have the potential to reduce the disease burden by a further 6 to 10 percent, on top of the 40 percent from known interventions, assuming aspirational yet realistic adoption rates by 2040. Not only could some of these innovations be fully curative for some diseases, but by tackling the underlying biology of aging, they could significantly extend healthy lifespan by postponing the onset of several age-related conditions. This contrasts with innovations of the past 30 years, many of which reduced symptoms or delayed disease progression while prevention and cures were rare. Additionally, the innovations we have identified here are more digitally enabled than in the past. As an example, artificial intelligence (AI) systems make advances in omics and molecular technologies, such as gene editing, faster and more accurate.[34]

Realizing these innovations will require continual investment in research and development across pharmaceutical companies, medical and other technology companies, and academia.

Better health could add $12 trillion to global GDP in 2040, far more than implementation costs

Often healthcare discussions tend to focus on older cohorts. However, almost 70 percent of health improvements we identify accrue to the global population under 70 years of age. This would in turn increase the size and productivity of the labor force, boosting annual GDP growth globally by 0.4 percent every year over the next two decades. These benefits generate an esti-

Sidebar 2

Societies will also need to consider how to prepare for a broad range of potential health shocks, including future pandemics

Improving global health will bolster the resilience of societies and economies when faced with unexpected health shocks. People with preexisting conditions, such as obesity and heart disease, have been particularly vulnerable during the COVID-19 pandemic.[1] In parallel, societies can take specific measures to be better prepared for the unpredictable health crises ahead. This will require effort on several fronts.

First, prevention to reduce the frequency of hazards, exposure to them, and the impact of that exposure. This includes comprehensive vaccination development programs, environmental and agricultural standards to reduce the risk of novel diseases crossing from animals to humans, and minimum standards for cybersecurity to protect healthcare systems.

Second, planning and preparedness, which includes effective and internationally coordinated disease and risk surveillance, early warning systems, and sharing of best practices.

Finally, investment in technology to improve the speed and quality of response. This includes investment in tests, vaccines, treatments, and other solutions, but also strategies for tracking and managing disease spread and transmission. In many cases these investments build on the strong primary and community care systems and structures that support broader population and public health, including data and analytics.

[1] *ICNARC report on COVID-19 in critical care*, Intensive Care National Audit and Research Centre, April 2020.

Exhibit 6

We have identified ten promising technology categories.

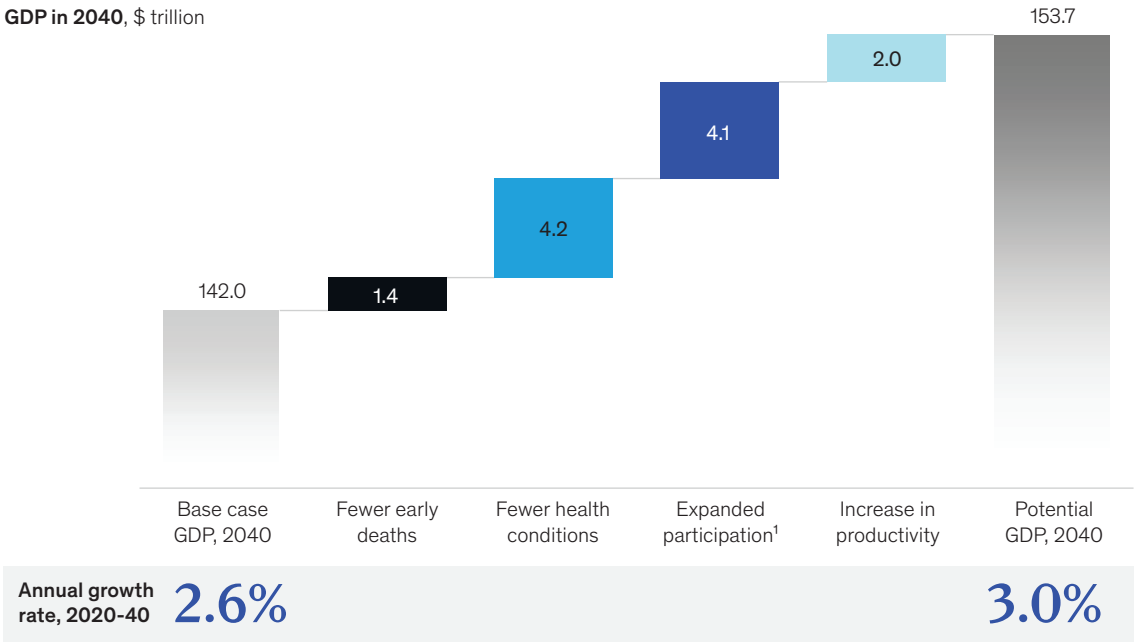
Technology category	Example technology
Omics and molecular technologies A medicine or diagnostic created by harnessing the power of molecules at a subcellular level; includes genome editing and proteomics	 **CRISPR and curbing malaria** Genetic modification of malaria-carrying mosquitoes using gene-editing technologies (eg, CRISPR); may potentially enable significant disease reduction by propagating the modified genes across the mosquito population
Next-generation pharmaceutical Newer iterations of traditional chemical compounds (small molecules) and classes of molecules used as medicinal drugs, possibly with multiple and concurrent target structures	 **Senolytics and regulation of cellular aging** Senolytics (a class of small molecules) may decrease or eliminate aging cells that can cause cellular inflammation, dysfunction, and tissue damage; has implications for delaying the occurrence of age-related diseases
Cellular therapy and regenerative medicine *Cellular therapy*—a biological product, derived from living cells, used for therapeutic purposes to replace or repair damaged cells and/or tissue *Regenerative medicine*—a therapy with the power to restore diseased and/or injured tissues and organs, potentially decreasing reliance on transplantation	 **CAR T-cell therapy and treatment of solid tumors** CAR T-cell therapy reprograms a patient's T-cells (immune system cells) against tumor cells; when infused into the patient, the T-cells bind to an antigen on tumor cells, attacking and destroying them
Innovative vaccines Substances that stimulate the immune system to respond to and destroy a bacterium, or virus; historically, vaccines have eradicated and/or controlled the spread of a number of infectious diseases around the world, and in the future, they may be used to target noncommunicable diseases (eg, cancer)	 **The AT04A vaccine and the lowering of cholesterol** AT04A is a vaccine made up of molecules that bind to blood cholesterol and degrade it; vaccination would be required only once a year, potentially improving outcomes
Advanced surgical procedures Advances in the treatment of injuries or disorders with minimally invasive incisions and/or small instruments, including robotic surgery; also includes any technique that improves surgery-related processes outside the operating room	 **Suspended animation for severe trauma patients** A cold saline solution could be injected in the first contact with the patient to cool the body to 10–15°C and stop its function, allowing time for surgeons to operate before resuscitating the patient
Connected and cognitive devices Portable, wearable, ingestable, and/or implantable devices that can monitor health and fitness information, engage patients and their community of caregivers, and deliver self-regulated therapies autonomously	 **E-tattoos for heart diagnostics** Ultra-thin e-tattoos can provide longer periods of heart monitoring and increase patient comfort while providing a wider range of data to enhance clinical decision making
Electroceuticals Small therapeutic agents that target the neural circuits of organs; therapy involves the mapping of neural circuitry with neural impulses (administered via an implantable device) delivered to these specific targets	 **Implantable microchips and the mitigation of chronic pain** Spinal cord stimulation can improve patient quality of life, allowing increased mobility, enhanced sleep, and reduced need for pain medication
Robotics and prosthetics A wide variety of programmable, self-controlled devices consisting of electronic, electrical, or mechanical units and artificial substitutes or replacements for a part of the body	 **Next-generation exoskeletons and mobility support** Next-generation exoskeletons, powered by small motors that mimic human muscles, could allow older patients to recover their autonomy while reducing the likelihood of accidents and falls
Digital therapeutics Preventive and therapeutic evidence-based interventions driven by software for a broad spectrum of physical, mental, and behavioral conditions	 **AI-powered app to enable behavior change** Digital therapeutics powered by AI, patient data, and behavioral science can help patients adopt and sustain health behaviors through gamification and other forms of engagement
Tech-enabled care delivery Technology-enabled care delivery that incorporates new and larger data sets, applies new analytics capabilities to determine insights, and applies those insights to providers and patients to improve care outcomes, experience, and efficiency	 **Multichannel care delivery** Multichannel care delivery using online platforms may facilitate data sharing and improve treatment efficiency; particularly relevant for chronic diseases like diabetes where the patient's glucose levels and other vital signs are continuously shared with the specialist

Source: McKinsey Global Institute analysis

Exhibit 7

Global GDP could rise by about $12 trillion in 2040, an 8 percent increase, mainly from fewer health conditions and expanded participation in the labor force.

GDP impact breakdown in 2040



[1] Includes impact on older adults (only high-and upper-middle-income countries), informal caregivers (only in Organisation for Economic Cooperation and Development [OECD]), and people with disabilities (global).
Source: Institute for Health Metrics and Evaluation, used with permission, all rights reserved; Oxford Economics; ILOSTAT; OECD; Eurostat; National Transfer Accounts project; McKinsey Global Institute analysis

mated economic benefit of $2 to $4 for each $1 invested in improving the health of the global population. That is before accounting for the additional value unlocked by forthcoming innovations or the broader social benefits to individuals, families, and communities.

A larger, healthier, and more productive labor force could counter demographic headwinds and boost global growth

The economic benefits from the health improvements we size are substantial enough to add $12 trillion or 8 percent to global GDP in 2040 (Exhibit 7). These benefits arise through the labor market, both by expanding future employment through fewer early deaths, fewer health conditions, and higher labor force participation of healthier people and through the productivity gains achievable by workers who are physically and cognitively healthier.

By 2040, 245 million more people could be employed. About 60 million of them would have avoided early death from cardiovascular disease, cancers, malaria, and other causes, adding $1.4 trillion to 2040 GDP. Addressing mental health disorders, diabetes, or other conditions would no longer be a barrier to joining the labor force, for a n equivalent of about 120 million full-time workers contributing an additional $4.2 trillion. Another $4.1 trillion could be unlocked by expanding labor force participation among three groups: older populations for whom better health can be an opportunity to work longer (about 40 million people), informal caregivers who no longer need to care for loved ones (12 million people), and people with disabilities who can go to work because workplaces adapted to accomodate their needs (eight million people).

Lastly, improving health could drive up productivity and lift GDP by as much as $2.0 trillion by reducing presenteeism from chronic conditions such as low back pain, but also through investing in childhood nutrition, which improves the cognitive and physical health of the future workforce. Just addressing adolescents' mental and behavioral health issues, which affect about 60 million young people globally, could unlock $600 billion by 2040 through raising their educational attainment and earnings potential.

The expansion of the labor supply in the healthy growth scenario could add 0.3 percent to global employment growth. One-fifth of the new labor market entrants would be in high-income economies, where this expansion could fully counter the projected slowdown in labor force growth. The rest, 80 percent, would improve health and increase the labor force in low- and middle-income countries.[35] (See Sidebar 3, "Variations in the disease burden and labor market structures determine health opportunities for individual countries.")

Because preventive health benefits—about 70 percent of the untapped opportunity we identify—tend to accrue and pay off over a lifetime, the benefits would continue to rise beyond 2040. The health impact from innovations would also take time to flow through but could contribute an additional $5 trillion to annual GDP after 2040.

$100T

worth of social benefits from better health

The social benefits of improved health far exceed the economic benefits, estimated to be approximately $100 trillion by 2040

Ill health diminishes the ability to enjoy life and all that it has to offer, creating a physical, emotional, and financial burden for individuals, families, dependents, and caregivers. Beyond working, better health would give people the freedom to spend their leisure time on what they want to do most. This includes older people, many of whom may choose to give back to society in other ways after retirement. We estimate that having a healthier population aged 65 and up could add $20 billion to $30 billion in value to societies in 2040 through volunteering alone. Our GDP estimates do not capture the benefits of volunteering, stronger social relationships, and happier retirees, all factors that would further help transition to a healthier growth path by helping maintain better health. While more challenging to value in dollars, we estimate the social benefits from improved health by applying the approach used in economics to measure welfare.[36] We estimate the total combined value of deaths averted and reduced ill health could reach $100 trillion without adjustments for income levels—eight times the estimated GDP benefits.[37] This number is so high because people typically value good health above everything else. Improving health could also help narrow health disparities within countries and across countries. This is turn could contribute to reducing income inequality within countries and strengthening the social contract.[38]

Viewed on a cost-benefit basis, focusing on known health improvements could deliver an incremental economic benefit of $2 to $4 for each $1 invested

The economic and welfare benefits we have estimated far exceed the implementation costs of achieving this level of health improvement, delivering a GDP uplift of $2 to $4 for each $1 invested over 20 years (Exhibit 8).[39] Realizing the benefits would mean shifting spending to prevention.[40] Prevention of diseases usually is less expensive than treatment and reduces the need for more expensive treatment later on, contributing to a high economic return. Shifting incremental spending to prevention would not be simple, however, because it requires substantial changes in where and how healthcare is delivered, as well as changes to communities that would help individuals grow up, work, and age in healthy ways. It is important to note that our economic analysis should not be interpreted as calling for additional funding for healthcare as currently delivered, but as an alternative approach under which health needs are addressed early, with proven, effective, typically lower-cost approaches.

A key question is what this transition would cost in different countries. The answer varies by region. In developed countries with estab-

lished healthcare systems, the benefits of shifting from treatment to prevention are high and the incremental costs low. Even a moderate improvement in healthcare delivery efficiency could more than pay for the additional spending required. Researchers find opportunities in all countries to reduce healthcare delivery costs by up to 22 percent from today's levels through higher productivity. This includes standardizing operational processes in clinical and nonclinical areas, transitioning to lower-intensity settings of care where ap-

Sidebar 3

Variations in health outcomes and labor market structures determine economic opportunities for individual countries

A larger and healthier labor force translates into substantial economic benefits across all countries. Yet underlying differences in the health outcomes and labor market structure shape the opportunities individual countries have to capture those economic benefits (Exhibit). Highlights from the patterns we observed include:

In the **United States and Canada**, significant opportunity comes from reducing obesity-related conditions and substance use disorders. Mortality rates for substance use disorders, for example, are six times higher in the United States than in Western Europe. Addressing low back pain, migraines, and mental health disorders is also a large opportunity in the United States, Australasia, and Western Europe. In **Western Europe**, broadening the opportunities for people to remain in the labor force provides the biggest boost to GDP because the effective retirement age remains low in many countries.[1]

In **Eastern Europe and Central Asia**, one of the biggest opportunities lies in averting premature deaths from ischemic heart diseases and stroke, both of which occur at higher rates than in Western Europe. Controlling high rates of excess alcohol use and smoking could reduce the risk of developing several of these conditions as well as lung and liver illnesses.[2]

In **East Asia**, cardiovascular disease is a big and growing killer, linked to changing diets and lifestyles. Averting deaths from chronic obstructive pulmonary disease will have a major impact in coming decades. Increases in chronic lung conditions are mainly linked to higher rates of smoking and indoor and outdoor air pollution in Asian countries.[3]

In **Latin America**, opportunities come from preventing and treating cardiovascular disease as well as reducing low back pain and vision impairment. The prevalence of blindness is much higher in Latin America than in the United States. Researchers estimate that 43 to 88 percent of blindness in Latin America is caused by cataract and refractive errors that could be curable.[4]

In **South Asia and sub-Saharan Africa**, investing in child health today would have a significant payoff in the future. Sub-Saharan Africa would have 3.3 million more young adults alive by 2040 if the health of children were improved with better childbirth practices, treatment of lower respiratory diseases, and prevention of diarrhea and malaria, among others.

[1] As people in middle age become healthier, they may choose to stay in the workforce longer. We size the economic potential impact if the labor force participation of people between 65 and 69 would increase to current levels of labor force participation of people between 60 and 64 today.
[2] Wilkins E et al., *European cardiovascular disease statistics 2017*, European Heart Network, February 2017.
[3] Tan WC and Ng TP, "COPD in Asia: Where East meets West," *Chest*, February 2008, Volume 133, Number 2, pp. 517–27.
[4] Limburg H et al., "Review of recent surveys on blindness and visual impairment in Latin America," *Br J Ophthalmol*, March 2008, Volume 92, Number 3, pp. 315–9.

propriate, addressing unnecessary duplication of services, reducing medical errors, avoiding clinically ineffective activity, and increasing levels of digitization. Longer term, greater use of automation and artificial intelligence could also increase productivity. In the lowest-income countries, costs are relatively higher than in lower-middle-income countries due to limitations of existing health infrastructure and services. In low-income countries, we estimate that the additional spending required would be about two percentage points of GDP.[41]

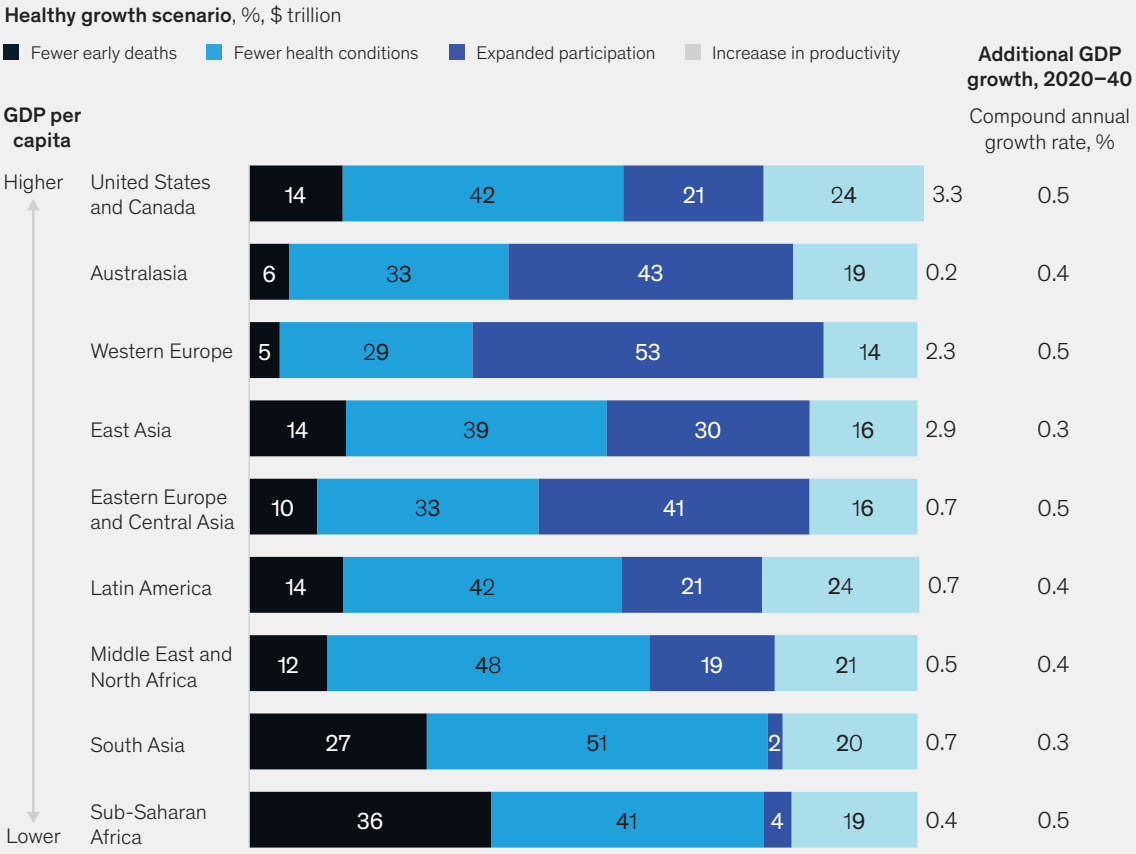
Sidebar 3

Variations in health outcomes and labor market structures determine economic opportunities for individual countries *(continued)*

Exhibit

Across regions, the economic benefits of better health are driven by differences in the underlying disease burden and labor market structures of countries.

GDP impact breakdown in 2040



Note: Figures may not sum to 100% because of rounding.
Source: Institute for Health Metrics and Evaluation, used with permission, all rights reserved; Oxford Economics; ILOSTAT; OECD; Eurostat; National Transfer Accounts project; McKinsey Global Institute analysis

Realizing the health opportunity would require a pivot to prevention within healthcare systems and societies more broadly

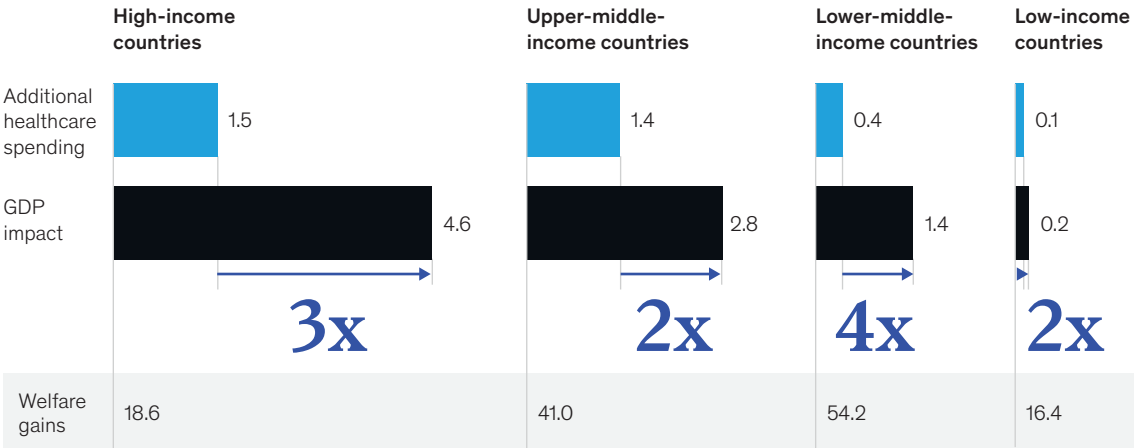
Capturing the benefits that we identify in this report would require a focus that extends beyond what we typically think of as healthcare. That means it would necessitate change by governments and regional authorities, companies, innovators, and communities to shape environments and societies in ways that promote healthy lives and capture the societal and economic benefits we size. The COVID-19 pandemic provides a unique moment to engage governments, companies, and communities around the world in this endeavor. The pandemic has exposed deep vulnerabilities in healthcare systems, supply chains, and social structures, and vast inequities that need to be addressed. As societies emerge from the immediate crisis, we can aspire to do more than plug gaps and hope for recovery. We can build a better healthcare system and a stronger, more resilient global economy that delivers better health for all and shared prosperity for decades to come. To help realize that opportunity, we identify four imperatives: make healthy growth a social and economic priority; keep health on everyone's agenda; transform healthcare systems; and double down on innovation in therapeutics and beyond.

Each of these imperatives should be tailored to specific cohorts. For example, cutting across all these imperatives is the need to rethink aging. While many countries are already experiencing rapid aging in their populations, this will only increase as health outcomes improve. This older, healthier cohort will contribute positively to societies and economies in many ways, as active citizens, family members, consumers, volunteers, and, for some, workers and entrepreneurs. Globally, the boost to consumption in 2040 from healthier people living longer could be some $1.8 trillion. It will be necessary to consider how to adapt environments, housing and living arrangements, workplaces, and recreational facilities for an older population.

Exhibit 8

For each $1 invested in improving health, an economic return of $2 to $4 is possible.

Healthy growth scenario in 2040, $ trillion



Note: Snapshot view of the healthy growth scenario in 2040. Additional healthcare spending, GDP impact, and welfare gains directly attributable to better health only (excluding expanded participation).
Source: Institute for Health Metrics and Evaluation, used with permission, all rights reserved; Oxford Economics; ILOSTAT; National Transfer Accounts project; WHO, *Updated Appendix 3 of the WHO global NCD action plan 2013–2020*, April 2017; "Disease Control Priorities 3 (DCP-3): Economic evaluation for health," University of Washington Department of Global Health, 2018; Tufts Cost-Effectiveness Analysis Registry; McKinsey Global Institute analysis

$1.8T

boost to consumption in 2040

Highlights of these four imperatives include:

1. **Make healthy growth a social and economic priority.** Our analysis shows that investing in health can be a critical lever for future growth and an important part of the economic policy debate. Instead of thinking of health as a cost to manage, focusing on health as an investment can deliver significant social and economic returns. Governments around the world are in the driver's seat and should consider developing and delivering healthy life agendas, including labor market and employment policies, that deliver both health and economic benefits. Imperatives include the following:

   - **Develop and deliver an integrated healthy life agenda.** As governments lead their citizens out of the COVID-19 pandemic, they have an opportunity to integrate health into decision making in all policy areas. For example, they can harmonize investments, incentives, and services in public health, physical and mental health, education, labor, research and development, and social services. In parallel, governments may need to work more closely with the tech sector to integrate and embed robust data and advanced analytics into health monitoring, policy development, and decision making.
   - **Prioritize rethinking labor and employment policies.** Ensuring that individuals can work in an environment that maximizes their physical and mental health would go a long way toward realizing the health benefits we size. This might include broadening opportunities for people with disabilities and encouraging the participation of older workers in the labor force by addressing work discrimination and financial disincentives to extend working lives. Promoting a safe work environment to better match the physical and behavioral health needs of workers would also be key.

2. **Keep health on everyone's agenda.** The COVID-19 pandemic forced health onto the agenda of every organization and every household around the world. Keeping it there can deliver significant benefits. Long-term prevention and health promotion, which encompasses more than 70 percent of the benefits we identified, cannot simply be left to healthcare providers or healthcare systems. It is quite literally everybody's business. Some examples of steps to consider include:

   - **Advance healthy communities.** Too few people today live in communities where making healthy choices is an affordable or achievable option. Policies promoting healthy environments and behaviors can make a difference, for example by ensuring clean water and sanitation, building affordable housing, improving road safety, encouraging physical activity, and making children's health a priority in schools. Companies have a role to play, too. By acknowledging, monitoring, and improving their organizational health footprint, companies can make a positive impact on the communities they operate in.
   - **Advance healthy and inclusive workplaces.** To take advantage of the health opportunities, employers can invest more fully in the health and wellness of a diverse set of employees. Some focus areas to consider include occupational health and safety and providing health education, incentives for healthy behaviors, and fitness and medical services, while ensuring preparedness and employee protection in times of heightened health risk. Companies could also adapt workplaces to draw on the entire labor force. This includes providing policies, assistive technologies, and training, and creating a culture that addresses discrimination in order to attract and retain older workers and people with disabilities. A workplace that introduces flexible working for people with caring responsibilities and policies that support transitions/reentry into the formal labor force could help informal caregivers to stay in work.

3. **Transform healthcare systems.** The COVID-19 pandemic has exposed vulnerabilities in healthcare systems everywhere. Taking the opportunity to strengthen and reimagine systems may not only ensure better preparation for future crises but also deliver healthcare more effectively. The challenge is making and sustaining changes that shift to preventive health while ensuring resilience and flexibility. This will involve high-quality and holistic primary care and services that address behavioral and social health needs, like housing, deploying a broader range of delivery channels to reach people when and where they are most likely to benefit. The current incentives in many healthcare systems and organizations are not sufficient to ensure this transition and require a fundamental reassessment. Some examples of steps that could be considered include:

   - **Reorient and strengthen the healthcare system.** Governments are facing immediate needs for addressing weaknesses in supply chains, information sharing, coordination, and planning. But they can do much more in the process to ensure that the most effective proven interventions are available to all who could benefit. In low-income countries, this could mean developing an adaptable and community-focused healthcare infrastructure to broaden access and ensure that the most effective interventions are available at scale. High-income countries may need to reorient infrastructure toward primary and community care, addressing social determinants of poor health, and improving access for underserved communities. In many cases, this could mean revisiting incentives to encourage the adoption of more effective care. For example, closer collaboration between pharmaceutical and medical technology companies, payers, and providers could help achieve the necessary pivot to prevention and community healthcare and scaling of the most effective interventions.
   - **Introduce next-generation healthcare delivery.** Providers and healthcare systems leaders could help rebuild and reimagine healthcare systems by embedding innovations and productivity improvements—some of which the COVID-19 pandemic has already catalyzed—and promoting infrastructure that is more community based, holistic, and tech-enabled. Payers can consider encouraging more innovative care delivery through closer connection with healthcare providers and engaging members through digital and virtual channels (building on many successful experiments from the crisis).

4. **Double down on innovation.** As the world awaits a vaccine or an effective treatment for COVID-19, the vital role that innovation plays for health and the global economy could not be more evident. Innovations will continue to be critical to improving the health of the world's population. Today a little over a half of the $300 billion in global R&D spending on healthcare comes from the private sector.[42] Promising innovations include genomics to deliver more targeted prevention and treatment; data science and AI to detect and monitor disease and enhance research; tech-enabled delivery to expand and reimagine access; and advances in the understanding of the biology of aging. However, realizing the full potential of the innovation pipeline may require shifting economic incentives to reward the areas with greatest need and highest return. Steps that could be considered include:

   - **Expand and align research and innovation with societal priorities.** We find that the level of research effort for some disease areas—for example, mental and neurological disorders, cardiovascular disease, and communicable diseases—is considerably lower than their disease burden. Treatment for established disease is more

likely to be reimbursed by insurers and is rewarded much more than health promotion, preventive care, or early intervention. As a result, potentially transformative innovations for preventive interventions can be difficult to monetize. This thinking flows through to the research agenda, where the economic case for investing in prevention and health promotion is often challenging. Intensifying research in areas with large unmet needs, how to sustain behavioral change, healthcare delivery to boost access, and creating innovative funding models can help.

- **Build more collaborative and effective approaches to R&D.** Accelerated and collaborative ways of working, developed in the heat of the COVID-19 crisis, could be sustained and focused to drive R&D investment, expand innovation in other areas with unmet needs, and develop more effective preventive actions. This may require governments, academic institutions, and philanthropic organizations to reassess their research agendas. Multiple-stakeholder partnerships, streamlining R&D processes, and harmonizing regulatory environments can help. Expanding efforts to reduce the time delay—often of a decade or more—that too often exists between transformative innovations reaching high-income markets and their availability in all regions could be important, too.

Realizing the healthy growth opportunity that we size in this report requires a coordinated effort by all stakeholders—governments, companies, and health institutions—to promote change within healthcare systems and beyond. But today, in the face of the COVID-19 pandemic, a unique opportunity to do just that has emerged. The benefits would be large: a $12 trillion economic opportunity, hundreds of millions of lives saved, and better health in the global population. Could there be a more important objective than making the world both healthier and more prosperous?

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1 According to the latest ILO estimate, there has been a 10.7 percent decline in hours worked since Q4 2019, equivalent to over 300 million full-time jobs. See "ILO Monitor: COVID-19 and the world of work," fourth edition, May 2020.

2 Defined as deaths in people aged <70 years from noncommunicable diseases. Institute for Health Metrics and Evaluation. Used with permission. All rights reserved.

3 Defined as years of life lost (YLLs). This measure quantifies the years between death and average life expectancy. Institute for Health Metrics and Evaluation. Used with permission. All rights reserved.

4 Institute for Health Metrics and Evaluation. Used with permission. All rights reserved.

5 Ibid.

6 We define health interventions as actions aimed at assessing, promoting, or improving the health of an individual or population, ranging from public sanitation programs to surgical procedures, recommended by leading institutions like the World Health Organization or national medical associations.

7 Mensah GA et al., "Decline in cardiovascular mortality: Possible causes and implications," *Circ Res*, January 2017, Volume 120, Number 2, pp. 366–80; Arnold M et al., "Progress in cancer survival, mortality, and incidence in seven high-income countries 1995–2014 (ICBP SURVMARK-2): A population-based study," *Lancet Oncol*, November 2019, Volume 20, Number 11, pp. 1493–505; Smith MA et al., "Declining childhood and adolescent cancer mortality," *Cancer*, August 2014, Volume 120, Number 16, pp. 2497–506.

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[19] See chapter 1 of *Prioritizing health: A prescription for prosperity*, McKinsey Global Institute, July 8, 2020, on McKinsey.com.
[20] Analysis for G-19 countries (the G-20 minus the European Union) and Nigeria; see *Global growth: Can productivity save the day in an aging world?*, McKinsey Global Institute, 2015, McKinsey.com.
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[26] We recognize that there is considerable uncertainty, particularly for low- and middle-income countries.
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[28] Early indications of these additional conditions include: Holmes EA et al., "Multidisciplinary research priorities for the COVID-19 pandemic: A call for action for mental health science," *Lancet Psychiatry*, June 2020, Volume 7, Number 6, pp. 547–60; Cox D, "Some patients who survive COVID-19 may suffer lasting lung damage," *Science News Daily*, April 2020, sciencenews.org; Philpotts E, "GP urgent cancer referrals decline by more than 70% as fewer patients come forward," *Pulse Today*, April 2020, pulsetoday.co.uk.
[29] With the health improvement set out in our healthy growth scenario, a 65-year-old in 2040 would have the equivalent health of a 55-year-old today. This is defined as the probability of survival to a selected age in good health.
[30] We estimated the impact of preventive interventions (including environmental, social, behavioral, and medical prevention) on health first, and apply therapeutic interventions only on the remaining disease burden not averted by preventive actions.
[31] *Progress on household drinking water, sanitation, and hygiene*, 2000–2017: Special focus on inequalities, UNICEF and WHO, June 2019, who.int.
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[33] Institute for Health Metrics and Evaluation. Used with permission. All rights reserved.
[34] *The Bio Revolution: Innovations transforming economies, societies, and our lives*, McKinsey Global Institute, May 2020, McKinsey.com.
[35] In many low- and middle-income economies, populations are younger but suffer from more health conditions and have higher rates of premature mortality. This means that health benefits accrue to younger cohorts with longer economically active lives ahead. However, realizing this economic potential depends on additional factors, including access to education, and capital for investment and infrastructure to create high-value employment opportunities. We recognize that this is a challenge in many parts of the world.
[36] Many economists, including the members of the Lancet Commission on Investing in Health, quantify the financial value of welfare or societal benefits by measuring "inclusive income" on the basis of "willingness to pay" for health gains. This value is typically determined by surveys using monetary and health trade-offs. For more details, see Yamey G et al., "Invirtiendo en salud: el argumento económico. Informe del Foro sobre Inversión en Salud de la Cumbre Mundial sobre Innovación para la Salud 2016 [Investing in health: the economic case. Report of the WISH Investing in Health Forum 2016]," *Salud Publica Mex*, 2017, Volume 59, Number 3, pp. 321–42.
[37] This analysis uses a single global value per additional healthy life year. For more details, see chapter 4 and the technical appendix of *Prioritizing health: A prescription for prosperity*, McKinsey Global Institute, July 8, 2020, on McKinsey.com.
[38] *The social contract in the 21st century: Outcomes so far for workers, consumers, and savers in advanced economies*, McKinsey Global Institute, February 2020, McKinsey.com.
[39] Positive economic return does not mean all countries can afford the initial investment required; the full benefits of preventive interventions can take years to realize and require a societal perspective, because the returns are accrued across society and not directly to the initial investor. We look at transition costs in more detail in chapter 4 of *Prioritizing health: A prescription for prosperity*, McKinsey Global Institute, July 8, 2020, on McKinsey.com.
[40] Our analysis focuses on the incremental healthcare expenditure required to transition to the healthy growth scenario, not overall healthcare spending pattern changes. Our analysis suggests that to achieve the healthy growth scenario, the majority of new investment should be allocated to prevention, including environmental, social, and behavioral interventions, as well as promotion of prevention and health. This would suggest an overall rebalancing in favor of greater spending on prevention, but we have not assessed overall allocations (across total healthcare expenditure), which vary by healthcare system depending on current baseline spending allocation, levels of unmet need, and other factors.
[41] This estimate assumes that the health services would be provided at the state-of-the-art efficiency and productivity, with costs per unit of activity 22 percent lower than they are today in real terms.
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