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2022 PSE GENERAL RATE CASE
WITNESS: THOMAS M. HUNT

BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION, Complainant, v. PUGET SOUND ENERGY, Respondent.	Docket UE-22____ Docket UG-22____

TWELFTH EXHIBIT (NONCONFIDENTIAL) TO THE PREFILED DIRECT TESTIMONY OF

THOMAS M. HUNT

ON BEHALF OF PUGET SOUND ENERGY

JANUARY 31, 2022

PwC Health Research Institute

Medical cost trend: Behind the numbers 2022

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Heart of the matter ›››

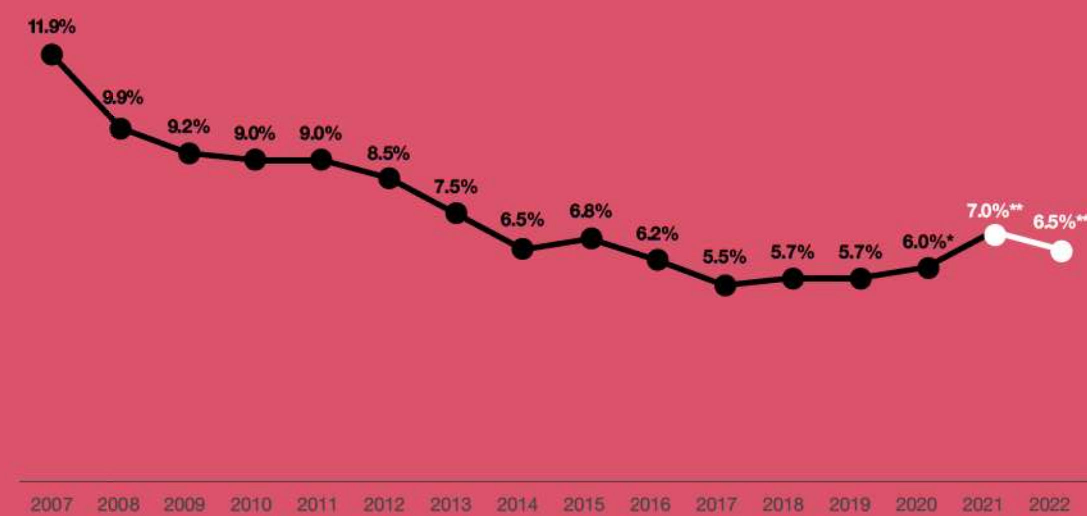
The COVID-19 pandemic reshaped Americans' lives as they grappled with illness, hospitalizations, death and an economic calamity. At the center of this turmoil was the US health system, which rapidly responded with herculean efforts to care for its patients and the development, manufacture and distribution of safe, effective diagnostics, therapies and vaccines.

The pandemic made a pronounced impact on how and where Americans gain access to care, a shift large enough to influence multiple aspects of price and utilization and, thus, medical cost trend. Some of these shifts represent deflators of trend; others, inflators. These changes may persist for years in a system that has long resisted profound shifts. In 2022, the health system will take a breath and survey the fallout from these extraordinary few years.

As it has done for the past 15 years, PwC's Health Research Institute (HRI) spoke with actuaries working at US health plans and healthcare executives in other parts of the industry to generate an estimate of medical cost trend for the coming year. Taking into account the pandemic-rooted inflators and deflators of cost, HRI is projecting a 6.5% medical cost trend in calendar year 2022. This trend is slightly lower than the projected medical cost trend in 2021, which was 7%, and slightly higher than it was between 2016 and 2020 (see Figure 1). The lower medical cost trend in 2022 compared with 2021 reflects a slight decrease in the pandemic's persistent effects on spending in 2022 compared with 2021.

Spending in 2020 compared with 2019 fell below the projected 6% medical cost trend because of care deferred during the pandemic. US health plan executives interviewed by HRI agreed that healthcare spending in 2022 would return to pre-pandemic baselines with some adjustments to account for the pandemic's persistent effects (see the Appendix for discussion on how the effects of the pandemic are treated in the projected medical cost trend).

Figure 1: HRI projects medical cost trend to be 6.5% in 2022, down from 7% in 2021



Source: PwC Health Research Institute medical cost trends, 2007-22
*Projected medical cost trend. Does not account for the effects of the pandemic on actual 2020 spending.
**Growth in spending expected over prior-year spending, with the effects of the pandemic removed from the prior-year spending. See Appendix for details.
Note: The 7% medical cost trend for 2021 was revised from a range of scenarios, from 4% to 10%, originally projected in PwC Health Research Institute's "Medical Cost Trend: Behind the Numbers 2021" report in June 2020. This revision reflects the average medical cost trend that was used for 2021 premium rate setting in 2020, shared with HRI during interviews conducted February–May 2021. Please see Appendix for details on this revision and more information on the effects of the pandemic on the medical cost trend projection and healthcare spending.

Regardless of when the pandemic officially ends, the pandemic itself, some of its aftereffects and the health system's response to changes and failures observed during the pandemic are expected to drive up spending in 2022:

- **The COVID-19 hangover leads to increased utilization.** Utilization and spending are expected to increase in 2022 as some care deferred during the pandemic returns; costs to test for, treat and vaccinate against COVID-19 continue; rates of mental health and substance use issues remain high; and population health worsens.
- **The health system prepares for the next pandemic.** Investments to bolster shortfalls in the US health system highlighted during the pandemic are expected to drive higher prices in 2022. They include investments in new forecasting tools, improvements to the supply chain, increased wages for some staff, stockpiles of personal protective equipment (PPE) and infrastructure changes.
- **Digital investments to enhance the patient relationship increase utilization.** HRI expects providers to accelerate investments in digital tools and analytics capabilities to strengthen the patient relationship, boosting utilization in 2022.

At the same time, some positive changes in consumer behavior and provider operating models that occurred during the pandemic are expected to drive down spending in 2022:

- **Consumers lean into lower-cost sites of care.** The pandemic prompted many consumers to embrace virtual care, retail clinics and other alternative sites of care, in some cases in place of a visit to the emergency department. HRI expects this adoption of lower-cost sites will drive lower spending in 2022.
- **Health systems find ways to provide more healthcare for less.** The new ways of working forced by the pandemic, including remote workforces, process automation and cloud technology, can help providers lower their cost structure in response to pressure on prices, including the new price transparency regulations and growing interest in narrow networks.[1] HRI expects this will dampen price increases and spending in 2022.

While the pandemic remains the primary driver behind these factors increasing and decreasing the medical cost trend in 2022, other non-pandemic-related drivers or dampeners of spending should not be ignored, including drug spending, cybersecurity and the surprise-billing legislation passed in December 2020 that takes effect Jan. 1, 2022.[2]

What is medical cost trend?

HRI defines medical cost trend as the projected percentage increase in the cost to treat patients from one year to the next, assuming benefits remain the same. Typically, spending data from the prior year is used as an input in the projection. For 2021 and 2022, the medical cost trend is the projected percentage increase over the prior year's spending, with the effects of the pandemic removed from the prior year's spending.

While medical cost trend can be defined in several ways, this report estimates the projected increase in per capita costs of medical services and prescription medicine that affect commercial insurers' large group plans and large, self-insured businesses. Insurance companies use the projection to calculate health plan premiums for the coming year. For example, a 5% trend means that a plan that costs $10,000 per employee this year would cost $10,500 next year.[3] The medical cost trend, or growth rate, is influenced primarily by:

- Changes in the price of medical products and services and prescription medicines, known as unit cost inflation.
- Changes in the number or intensity of services used, or changes in per capita utilization.
- For 2021 and 2022, an additional adjustment for the expected changes in both price and utilization of services resulting from the direct and indirect effects of the COVID-19 pandemic on spending.

INFLATORS

INFLATOR: The COVID-19 hangover leads to increased utilization

The pandemic's long tail may increase utilization and healthcare spending in 2022 thanks to the return of some care deferred during the pandemic, the ongoing costs of COVID-19, increased mental health and substance use issues, and worsening population health.

Some care deferred during the pandemic returns

Overall, healthcare spending by employers in 2020 was lower than expected, in large part because of the deferral of care as a result of the pandemic. Some of this care is expected to rebound in 2022, and some of it likely will increase healthcare spending (see Figure 2).

Figure 2: Care deferred during the pandemic that comes back in 2022 could be higher acuity, higher cost than it would have been in 2020

Type of care	Examples	Spending impact 2020	Spending impact 2021	Spending impact 2022
Forgone, not coming back	• Annual preventive care visit • Diagnostic lab or imaging that is no longer needed • Surgery that has been replaced with a less intensive intervention	↓	↓	/
Deferred, coming back in the same form	• Knee surgery • Sinus surgery • Other non-urgent but necessary procedures	↓	↑*	↑
Deferred, now requires more intervention	• Delayed cancer screening that catches stage 3 cancer that could have been caught at stage 1 • Prediabetes that worsens into diabetes	↓	↑*	↑

↓ Decreased utilization and spending ↑ Increased utilization and spending / No expected impact

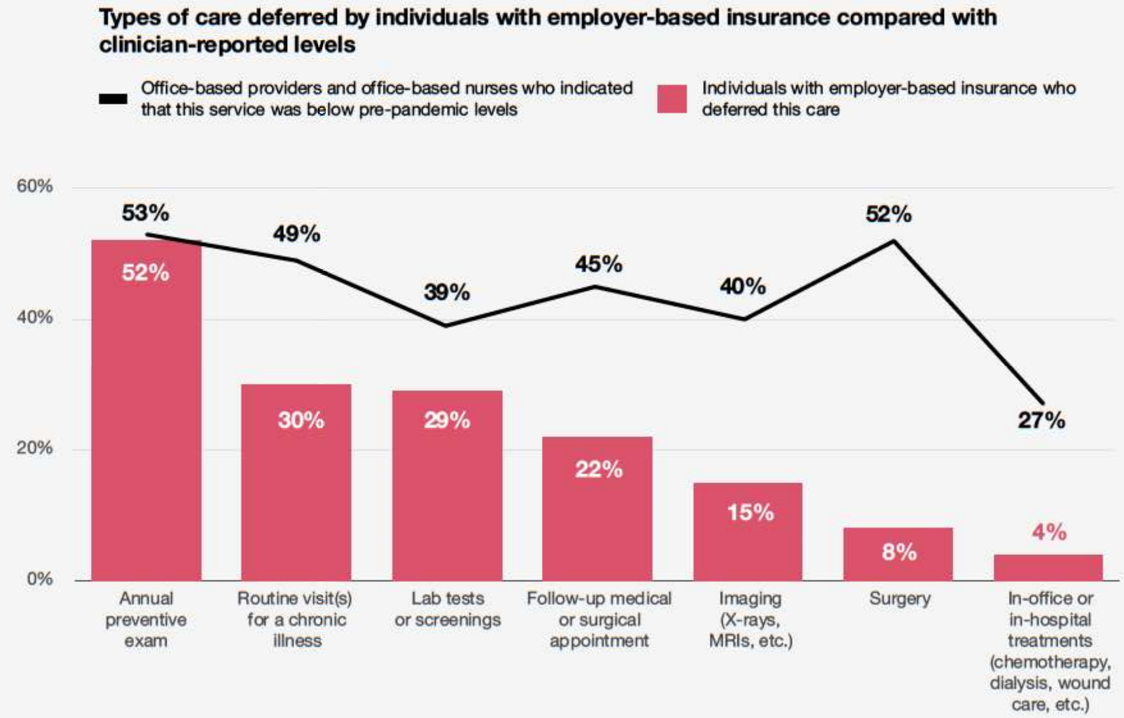
Source: PwC Health Research Institute analysis of interviews with executives at employer coalitions, healthcare coalitions and health plans, February-May 2021
Note: The spending impacts reflect the impact on spending in a given year compared with what would normally have been expected in that year if there had not been a pandemic.
*Initial dampened utilization and spending expected during the first half of 2021 with an increase in utilization and spending during the second half of the year, netting to a cumulative increase for the year.

Fifteen percent of American consumers with employer-sponsored insurance surveyed by HRI in September 2020 said they had deferred some care between March and September.[4] These consumers reported delaying an average of 62% of their care since March 1. Consumers were most likely to delay annual preventive visits. They also were likely to report delaying routine visits for chronic illnesses, laboratory tests and screenings (see Figure 3). Sixty-eight percent of office-based providers and office-based nurses surveyed by HRI said their volumes for these types of care remained below pre-pandemic levels in the spring of 2021.[5]

COVID-19 costs are likely to persist

The costs of testing for COVID-19, treating patients and administering vaccinations for the disease likely will continue into 2022. Pandemic-related diagnostic testing may be knitted into return-to-work strategies for employers. Eighty-six percent of employees surveyed by PwC in January 2021 said they would agree to employer-required, employer-funded testing for SARS-CoV-2, the virus that causes COVID-19.[6] Testing for SARS-CoV-2 may also become a seasonal cost during the winter months. Eighty-nine percent of immunologists, infectious-disease

Figure 3: During the first six months of the pandemic, individuals with employer-based insurance most commonly deferred their annual preventive visits



Source: PwC Health Research Institute clinician survey, March-April 2021, and PwC Health Research Institute consumer survey, September 2020
Note: Based on responses from 168 individuals with employer-based insurance who said they had delayed some care since March 1, 2020, and still had not received it as of September 2020; and from 752 office-based providers and office-based nurses who indicated where patient volumes for certain services were as of March-April 2021 compared with before March 1, 2020 (pre-pandemic). Office-based providers include providers (physicians, physician assistants and nurse practitioners) working outside a hospital setting and in a specialty other than hospitalist or intensivist. Office-based nurses include registered nurses working outside a hospital setting and in a specialty other than acute care nursing.

researchers and virologists surveyed by the journal Nature in January 2021 said that SARS-CoV-2 will circulate after the pandemic ends.[7]

The cost of treating COVID-19 patients is expected to shrink as vaccination levels rise, especially among those most at risk for hospitalization, and as treatments improve.

Primary vaccinations against COVID-19 are well underway. Boosters may be needed to extend the duration of protection or protect against variants of concern—those that spread more easily, cause more severe disease or do not respond as well to treatments or the current vaccines.[8] The costs to administer a booster could increase spending in 2022. CMS increased the Medicare reimbursement rate for administration of COVID-19 vaccines—the rate some health plans told HRI they are using for their commercial plans—in mid-March from a range of $16.94 to $28.39 per shot to a flat $40 per shot.[9]

It also is unclear how long the US government will pay for the vaccines and, when a commercial market emerges, how much manufacturers will charge for them. The prices likely will be higher than those secured by the government: $19.50 per dose for the Pfizer-BioNTech vaccine, $15.25 per dose for the Moderna vaccine and $10 for the one-shot Johnson & Johnson vaccine, not including government funding for research and development provided to Moderna and Johnson & Johnson.[10]

The mental health and substance use crises show no signs of waning

The pandemic substantially increased demand for mental health services. Thirty percent of Americans with employer-based insurance surveyed by HRI in September 2020 said they had experienced symptoms of anxiety or depression as a result of the pandemic.[11] This was especially true of individuals with children under age 18 (and in particular those with children who have health conditions) and young adults aged 18 to 24.[12] Making Caring Common, a project of the Harvard Graduate School of Education, found in an October 2020 survey that 36% of all respondents reported loneliness much or all of the time.[13] More than 60% of young adults reported high levels of loneliness, according to the Harvard survey. More than half of mothers with young children did, too.[14]

Adolescent behavioral health may see growth in spending in 2022. "There is not a functional adolescent mental health system in this country," said Elizabeth Mitchell, CEO of the Purchaser Business Group on Health, in an interview with HRI. "There are examples of what works, but they have not been scaled or systematically developed. The access doesn't exist. Employers, desperate for solutions, are looking to build this since the US health system has not."

The nation's opioid epidemic also grew. More than 87,000 Americans died from drug overdoses between October 2019 and September 2020, a 27% increase over the previous 12-month period and the highest number of fatal overdoses recorded in the US in a single year, according to the Centers for Disease Control and Prevention (CDC).[15] "The disruption to daily life due to the COVID-19 pandemic has hit those with substance use disorder hard," then-CDC Director Robert Redfield wrote in a 2020 agency health advisory.[16]

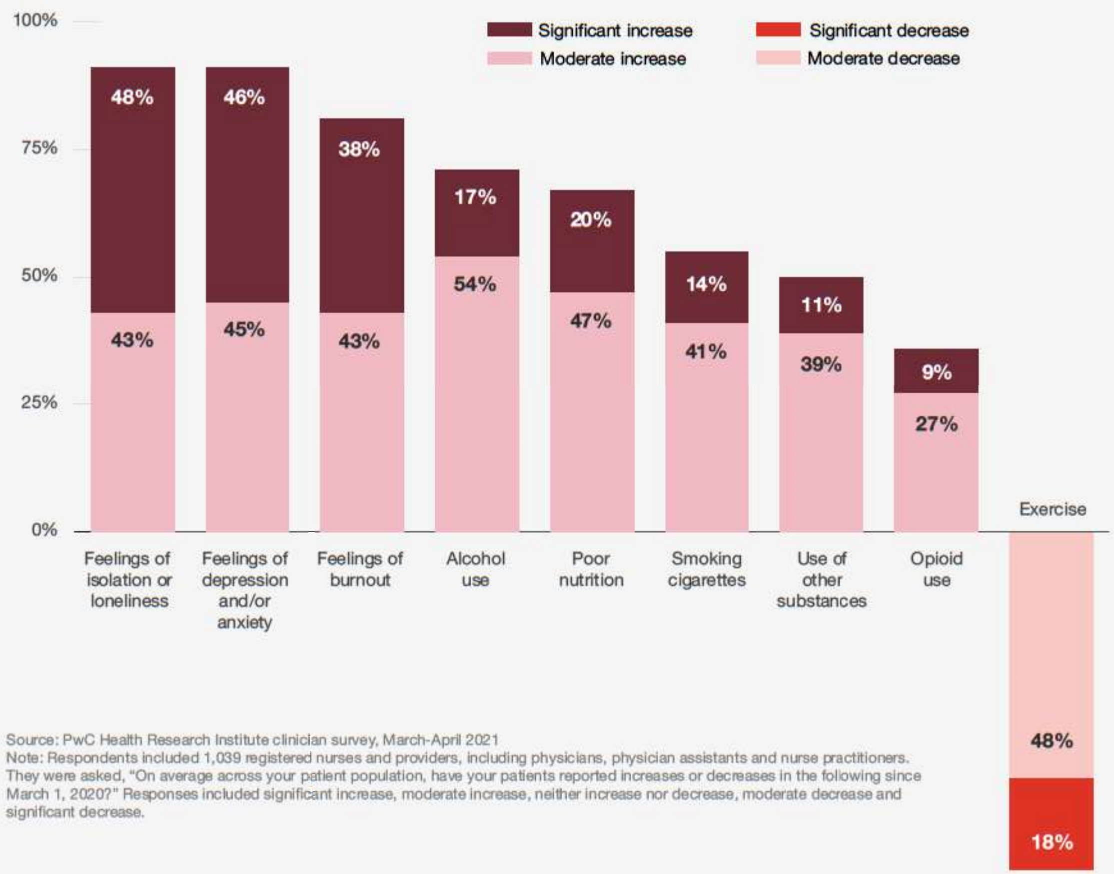
Increased substance use also likely will increase healthcare spending in 2022. Twenty-four percent of Americans 21 years or older said they were more relaxed about how often they get drunk, according to a survey conducted by the American Addiction Centers in September 2020.[17] Inpatient admissions for alcoholic liver disease at Keck Hospital at the University of Southern California rose 30% in 2020 from 2019, according to Kaiser Health Network.[18] Other US hospitals are reporting increased admissions for alcoholic liver disease of up to 50%.[19]

Population health worsened during the pandemic

Poor pandemic-era health behaviors such as lack of exercise, poor nutrition, increased substance use and smoking may lead to deterioration in US population health and increase healthcare spending (see Figure 4).

COVID-19 may leave some Americans with additional health burdens long after infection. People who survive severe COVID-19 may require months of rehabilitation and care after discharge from the hospital. Others, known as "long-haulers," may find themselves wrestling with symptoms for months, leading to additional medical needs. One in 20 individuals responding to the COVID Symptom Study app reported COVID-19 symptoms such as coughing,

Figure 4: Providers and nurses report increases in alcohol use, smoking, poor nutrition and loneliness among their patients during the pandemic



Source: PwC Health Research Institute clinician survey, March-April 2021
Note: Respondents included 1,039 registered nurses and providers, including physicians, physician assistants and nurse practitioners. They were asked, "On average across your patient population, have your patients reported increases or decreases in the following since March 1, 2020?" Responses included significant increase, moderate increase, neither increase nor decrease, moderate decrease and significant decrease.

shortness of breath, headaches and difficulty concentrating lasting eight weeks or longer.[20]

IMPLICATIONS ›››

Payers and employers: **Go beyond analyzing the impact of worsening population health on spending.** Model how the pandemic may worsen health and, in turn, increase healthcare spending for different individuals based on their health status. Use machine learning to proactively target interventions that could help prevent and mitigate worsening health. Consider investing savings from lower-than-expected healthcare spending in 2020 in disease management programs, expanded mental health benefits, or nutrition and exercise discounts/programs that could help mitigate or reverse some of the fallout of poor health behaviors and isolation of the pandemic.

Providers: **Be proactive and personalized to get patients back in for care.** Forty percent of consumers surveyed by HRI with employer-based insurance who had deferred care since March 1, 2020, and still not received it or rescheduled it as of September 2020 said they would be encouraged to reschedule if their doctor said it was safe.[21] Fifty percent of office-based providers and office-based nurses surveyed by HRI who indicated that some patients had deferred care said they had encouraged patients to schedule deferred care via mass messaging.[22] Forty percent had used targeted messaging to specific groups of patients, and 38% had personally reached out to patients directly. Personalized or targeted outreach could help encourage patients to schedule necessary care, or even their vaccine.

The need for SARS-CoV-2 booster shots or an annual vaccine also could create an opportunity for a more meaningful interaction between patient and provider. Providers should consider appointments for booster or annual SARS-CoV-2 vaccines that combine the vaccine with an annual preventive exam or other screening (like depression screening) that patients might otherwise forgo.

Pharmaceutical and life sciences companies: **Work with payers and employers to secure reimbursement for digital therapeutics for mental health, and meet a growing market need.** Young adults aged 18 to 24 were more likely to say they were experiencing anxiety or depression as a result of the pandemic.[23] They also were the most likely to choose telehealth for mental health services of any age group, and may be more willing to use digital therapeutics such as Daylight, a mobile app from Big Health to help manage worry and anxiety; Pear Therapeutics' Somryst, an app that is FDA authorized to treat chronic insomnia; or Meru Health's app-based mental health treatment program.[24] Securing reimbursement from payers could improve consumer uptake of digital therapeutics. And FDA approval or clearance could help secure reimbursement.[25]

Young adults aged

18-24

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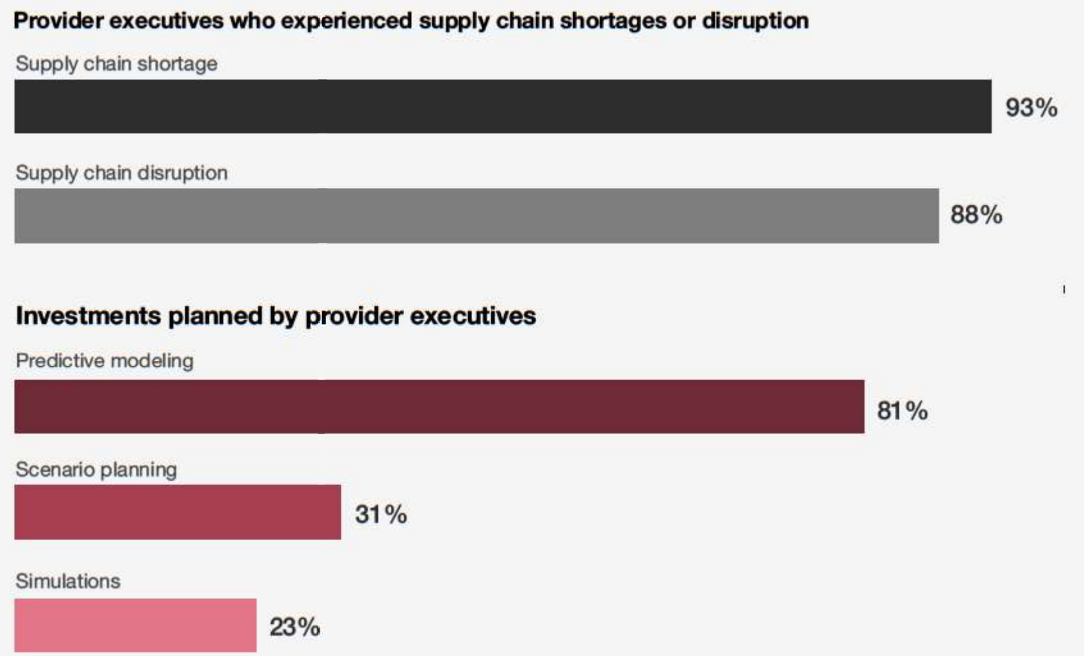
INFLATOR:
The health system prepares for the next pandemic

Calls to prepare for the next pandemic are as certain as its eventual arrival. Preparation costs money; pandemic readiness likely will be an inflator of medical cost trend in 2022. The US health industry is planning, or embarking on, investments in forecasting tools, supply chain, staffing, PPE and infrastructure changes. Because of these investments, payers and employers are bracing for rising prices.

The health system invests in better forecasting and the supply chain

Providers are planning investments in better crystal balls after the surprise and tumult of 2020 and 2021.[26] After experiencing supply chain shortages and disruptions, the majority of provider executives surveyed by HRI in 2020 said they expected to spend money on predictive modeling in 2021.[27] Smaller percentages said they would invest in simulations and scenario planning (see Figure 5).

Figure 5: Provider executives report significant supply chain shortages and disruption due to the pandemic, plan to invest in better forecasting



Source: PwC Health Research Institute health executive survey, August-September 2020

Pharmaceutical and life sciences companies also likely will address the supply chain. Ninety-four percent of pharmaceutical and life sciences executives surveyed by HRI in 2020 said improving the supply chain was a priority for 2021.[28] Eighty-two percent said they expected to onshore components of the supply chain within two or five years.

Providers spend more on staffing and safety measures for all

Prices for PPE, infrastructure and staffing such as nursing also have risen, executives said. "There are some fundamental changes in what it costs to provide care going forward that will push prices higher," Mick Diede, chief actuary at the Kaiser Foundation Health Plan, told HRI in an interview.

Thirty-one percent of clinicians surveyed by HRI who reported a lack of trust in their employer said that investments in PPE would help build or restore their trust.[29] Yet PPE purchases and storage cost money, which could prove to be challenges for smaller hospitals that may experience shortages of cash and supplies intensified by weaker purchasing power than larger systems.[30]

Staffing may cost more, too. Hospitals such as Henry Ford Health System, LifeBridge Health and The University of Kansas Health System raised the minimum wage to $15 per hour in response to COVID-19 working conditions.[31] These increased costs will persist post-pandemic and could spread to other health systems. Investments in remote workforces, such as technology, connectivity and cybersecurity, also could ensure that the organization is ready, in part, for the next crisis.

Investments also are being made in infection control. Fifty-one percent of clinicians surveyed by HRI in 2021 said they were considering changing their workflows to limit patients' exposure to pathogens, 49% were considering revamping space to allow for more distance between patients, and 22% were considering upgrading the heating, ventilation and air-conditioning systems in response to the pandemic.[32]

The health system addresses health disparities highlighted by the pandemic

Health organizations are making investments to address historical and persistent health disparities. Black and Latinx Americans suffered disproportionately in the pandemic, shouldering a high magnitude of cases, hospitalizations and deaths and outsize financial blows.[33] Black and Latinx Americans have received proportionately fewer vaccines than white Americans.[34]

The US health industry continues to invest in addressing health inequities. These investments likely will dampen healthcare spending in the long run but may drive higher prices in the short term.

The pharmaceutical and life sciences industry is working toward greater racial and ethnic diversity in clinical trial participation, a critical need amplified by the pandemic. Virtual or decentralized clinical trials could help. Eighty-seven percent of pharmaceutical and life sciences executives surveyed by HRI in 2020 said that virtual trials will help improve racial diversity.[35] And consumers across races may be more willing to participate. More than half of Asian, Black, Latinx and white consumers with employer-based insurance surveyed by HRI in April 2020 said they would be willing to participate in a trial from home.[36] Standing up virtual or decentralized trials will require upfront investment, driving higher costs of research and development and drug prices in the short term.

Health organizations have allocated millions toward addressing the social determinants of health, such as transportation, economic, housing and other issues that can stand in the way of health. CVS Health announced it had invested $114 million in affordable housing.[37] Along with other initiatives, Kaiser Permanente has committed $200 million toward affordable housing since 2018.[38] Increased costs to support these programs in the short run could result in savings long term.[39]

87%

of pharmaceutical and life sciences executives surveyed by HRI in 2020 said that virtual trials will help improve racial diversity in clinical trial participation.

IMPLICATIONS ›››

The health industry: **Embrace cross-industry collaboration.** "The pandemic fostered unusual cross-industry partnerships," said Mary Grealy, president of the Healthcare Leadership Council (HLC), in an interview with HRI. Competitors were willing to come together and share their proprietary information, Grealy said, creating a third-party "vault" for information about who had what, who needed what, and how to get it from one place to another.[40] Organizations should invest in real-time data collection, reporting and sharing, she said, and embrace interoperability, recommendations included in a recent report on disaster preparedness and response produced by the HLC's National Dialogue for Healthcare Innovation and the Duke-Margolis Center for Health Policy.[41]

Payers and employers: **Take an active role in addressing racial health disparities.** "Employers know that this is an issue and that they should be doing something," said Paul Fronstin, director of the health research and education program at the Employee Benefit Research Institute, in an interview with HRI. Seventy-eight percent of large employers surveyed by the Business Group on Health in February-March 2021 prioritized equity, diversity and inclusion as part of their health and well-being strategy, and 56% have worked to identify health inequities within their benefits or care delivery.[42] Payers also have a role to play. In January, Humana created a chief health equity officer role that will "set direction and establish strategy to promote health equity across all Humana lines of business."[43]

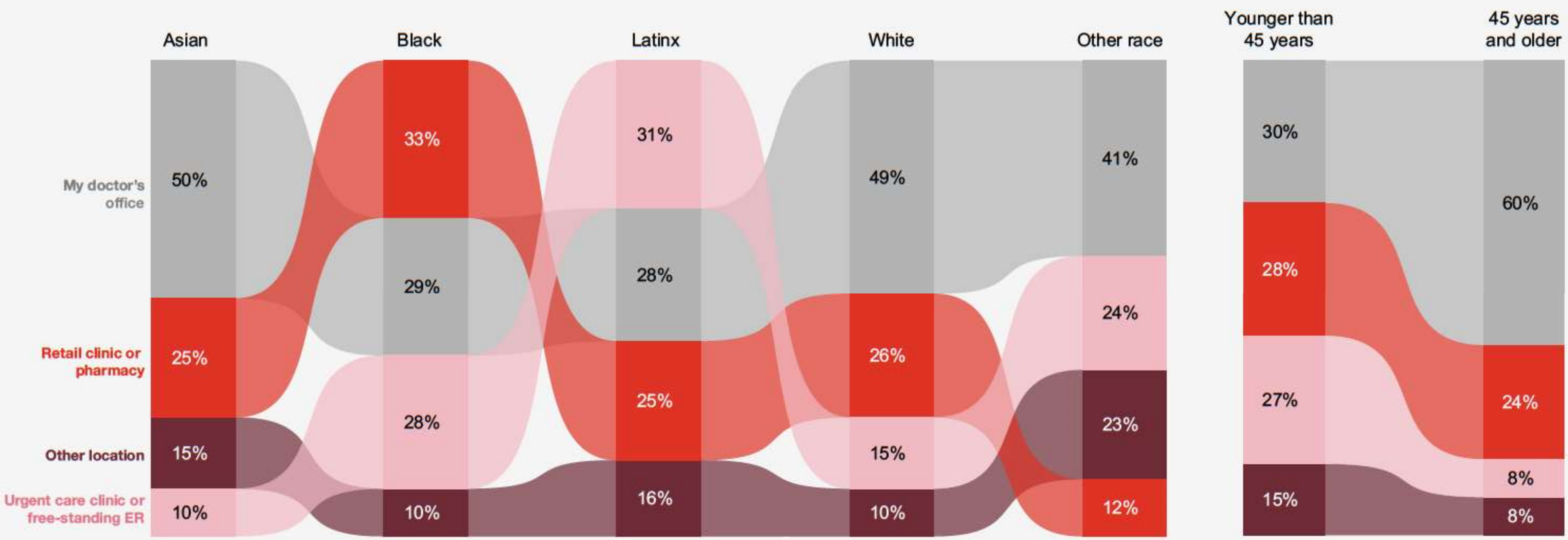
Providers: **Develop an "end-to-end" view of the supply chain, including the last mile.** The supply chain includes the "last mile" to the consumer.[44] Providers should develop sophisticated views of consumer preferences that could help ensure that the right services reach people at the right time in the place they choose. A data-driven distribution of the vaccines, for example, could overcome challenges that have led to issues with access and hesitancy among many Americans.

Consumers with employer-based insurance surveyed by HRI in September 2020 said their top preferred location to receive a vaccine was their doctor's office (45%), followed by a retail clinic or pharmacy (26%) and an urgent care clinic (13%).[45] Top preferred location for a vaccine within the employer-insured population varied by race and age—something that should be considered in the current COVID-19 vaccination campaign and in future efforts with annual or booster SARS-CoV-2 shots or annual flu shots (see Figure 6).

Pharmaceutical and life sciences companies: **Double down on preparation for SARS-CoV-2 variants or the next pandemic.** Pharmaceutical and life sciences companies should develop repurposed therapeutics and new vaccines, establish incremental vaccine manufacturing capacity without affecting historical supply needs, and be a good global citizen by providing production to regions outside one's nationality. Companies also should consider investing in R&D animal models, chemistry, manufacturing and control development and policy development so that when the next crisis hits, companies will have a short time to clinic.[46]

Figure 6: Top preferred location for vaccination among those with employer-based coverage varies by race and age

Preferred location to receive the COVID-19 vaccine for individuals who have employer-based insurance and plan to receive the vaccine within one year of vaccine approval



Source: PwC Health Research Institute consumer survey, September 2020
Note: 774 people with employer-based insurance said they would be willing to get a vaccine within one year of approval (or, in the case of the vaccines against SARS-CoV-2, within one year of FDA emergency use authorization). The category "other race" includes Hawaiian Native or other Pacific Islander, American Indian or Alaskan Native, two or more races, and prefer not to respond. The category "other location" includes at my church, my local YMCA or community center, administered in my home by a licensed health professional, on-site health clinic at my work, other and none of the above.

INFLATOR: Digital investments to enhance the patient relationship increase utilization

The pandemic accelerated providers' improvements in digital experiences so they could maintain their relationships with patients through the challenge of COVID-19 while reaching new segments. Providers are fine-tuning "digital front door" mobile apps that connect them to their patients, beefing up portals and intensifying use of customer relationship management (CRM) tools. They are using virtual care and analytics to not only improve the customer experience and create regular touchpoints with patients, but also to expand capacity to avoid frustrating or alienating patients. HRI expects these digital investments in the patient relationship to expand consumers' access to care, increasing utilization and medical cost trend in 2022.

Patients and clinicians expect useful digital tools as part of the care journey

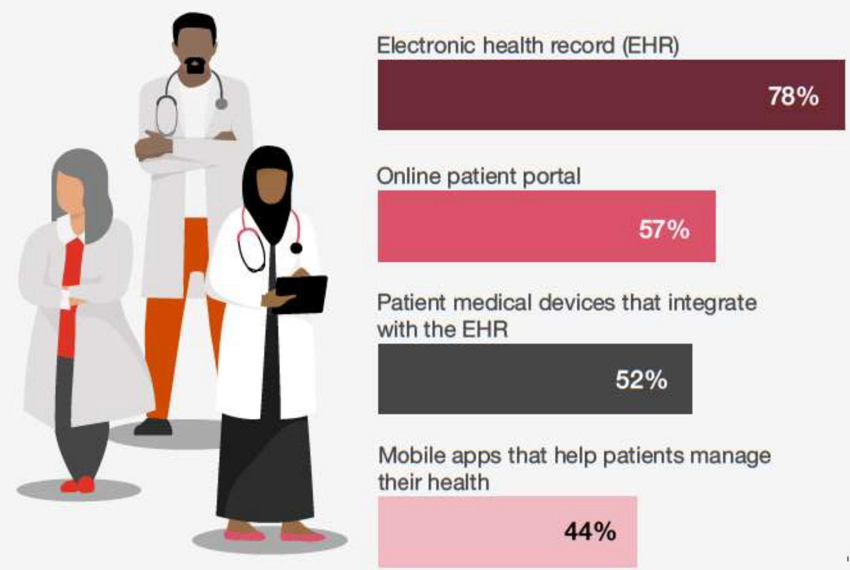
Mobile apps for healthcare organizations are table stakes in 2022. Total corporate funding for digital health, including venture capital, debt and public market financing, was $21.6 billion in 2020, up 103% compared with $10.6 billion in 2019, according to Mercom Capital Group.[47] Patients and clinicians want digital tools that improve care and simplify the care journey.

Fifty-eight percent of providers and nurses surveyed by HRI in 2021 said they wanted more personal health tools such as apps to help them coordinate patient care.[48] They view the use of digital technologies as important to patient care (see Figure 7). Seventy-nine percent of consumers with employer-based insurance surveyed by HRI in April 2020 said they were open to chatting online through the health system's website; 76% said they were willing to use a doctor or health system's mobile app.[49]

The care journey remains fragmented, with the patient responsible for knowing how, when and where to engage. "All the burden is with the patient on deciding what modality they need to have access to and which doctor," said Prat Vemana, chief digital officer for Kaiser Permanente, during PwC's 180 Health Forum on Digital Health in April. Vemana said the health system should be directing patients where to go for care, based on what they are experiencing. And, he said, this direction should be based on data collected from historical

Figure 7: Providers and nurses still see electronic health records as important. They also want more digital connections with patients

How important are each of the following technologies to you today?



Source: PwC Health Research Institute clinician survey, March-April 2021
Note: Responses include the percentage of providers and nurses who responded with 6 or 7 on a scale of 1-7 when asked, "In your opinion, how important are each of the following technologies to you today?" with 1 assigned "not important at all" and 7 assigned "very important."

patient encounters, knowing which modalities work best for which conditions and which symptoms.

Before the pandemic, digital investments to improve the way patients and clinicians engage with the health system and each other may have been tabled by provider leaders in favor of other needs. The crisis exposed how vulnerable healthcare organizations were without them. In the short term, these investments cost money, but they may pay off in the long run.

Investments in digital tools can help health systems better engage patients and expand capacity

Health systems are looking to build stronger, more continuous relationships with their patients that enable growth. Investments in virtual care, analytics and CRM tools can build better relationships and drive growth.

Virtual options can eliminate the need for patients to take off days of work or to secure transportation for a doctor visit, reducing irritating waits for patients. For example, Garfield Health Center in Monterey Park, California, found that its telehealth solution led to dramatic reductions in its no-show rate, which was 15% to 20% before the pandemic.[50] The no-show rate was less than 5% for telehealth visits. The virtual option alleviated issues such as childcare that kept Garfield Health Center's primarily lower-income patients from office appointments. Virtual care also may eliminate a long wait that some patients may experience for a specialist in their area, as it can make a wider pool of providers available to them. With geography not a limiting factor, providers have the opportunity to unlock new markets.

Investments in "supply side" analytics tools are important for ensuring that clinical time is best utilized. For example, as cancellations occur, providers can use artificial intelligence (AI) to predict when a patient may be ready to abandon the visit altogether, analyzing previous cancellation patterns and identifying signals that indicate the visit may not be rescheduled. The provider can then reach out to get that patient scheduled first in any newly opened time slots. A similar approach can be taken to new patients who present in the emergency department or an urgent care clinic but do not make a follow-up appointment. However, companies should establish trust in AI algorithms by reviewing them for unintended biases that can skew results.[51]

Health executives told HRI that they want to better understand the context of their patients' lives to improve their care and their experience with the health system. Seventy-nine percent of provider executives surveyed by HRI in 2020 said they were exploring investments in consumer segmentation and patient journey analysis.[52] Enhanced analytics that use clinical and nonclinical data also can help health organizations understand consumers' preferred channels of outreach, the social determinants of health, unmet needs and the factors that motivate them— context that informs better strategies to engage consumers effectively. This richer understanding of patients' lives, needs, motivations and preferences could lead to better health outcomes (see Figure 8).

The result of these efforts using digital tools to improve scheduling, decrease waits and understand the patient can help move healthcare from disparate interactions with patients into a more continuous relationship. "As we move into the digital arena, starting with simple things like scheduling, ending with complex things like diagnosis and information processing, how do you ensure that the virtuous triangle between the patient, provider, and information remains

Figure 8: Providers plan to invest in digital tools that improve relationships with consumers and drive better health outcomes

Source: PwC Health Research Institute analysis continuous and active? And that is the goal... of the best of digital care," Dr. Siddhartha Mukherjee, a Pulitzer Prize-winning science writer, said during PwC's 180 Health Forum on Digital Health in April.

One way that health systems are building better, continuous relationships and trust with patients is CRM tools. These tools can be used to identify patients with chronic conditions who may benefit from emails or texts that encourage better nutrition or exercise, or include reminders for regular screenings. For example, Children's Wisconsin in Milwaukee identified new parents as a segment with great potential for relationship-building, then used its CRM program for an automated email marketing campaign featuring lessons for them.[53] The emails achieved an 86% open rate, signaling the interest of this consumer segment and another potential touchpoint.

IMPLICATIONS ›››

Payers and employers: **Use digital tools to achieve more continuous care for members.** CRM and other digital health investments can help support the evolution of members' interactions with their providers beyond once-a-year, isolated check-ins. Payers can tap the full potential of CRM tools to identify the points in a patient journey where outreach or interventions could result in better care for chronic conditions, and coordinate with providers on needed outreach or interventions. Foundational investments in chatbots and automation also can help smooth the experience of members trying to get information on their plans and healthcare costs.

Providers: **Seize opportunities to better navigate the patient experience, starting with vaccine appointments.** Americans are finding the snags and wins in providers' scheduling platforms as they try to book vaccine appointments. Complex sign-ups, convoluted appointment booking, including for second shots, and other issues have stymied consumers, who share their frustration with friends, family and the public on social media. Convenient, simple, intuitive processes are rewarded with kudos and gratitude online, highlighting the need for providers to invest in their digital front door in an increasingly virtual care delivery world.

As new federal interoperability rules push healthcare organizations toward more data sharing, organizations have an opportunity to use those new data streams to build dynamic models that produce important patient insights.[54] However, it's important to feed those tools with clean and accurate data.

Pharmaceutical and life sciences companies: **Understand the hybrid virtual/in-person environment to best support patients and physicians.** Seventy-seven percent of provider executives surveyed by HRI in 2020 said the pandemic had negatively affected their organization's ability to engage with pharmaceutical sales representatives.[55] Seventy-eight percent said their organization's clinicians were communicating only virtually with pharmaceutical field representatives.[56] Communication in a post-pandemic world likely will be a mix: 78% of provider executives indicated that they would like to communicate with pharmaceutical field representatives in person, while 71% said they would like to use virtual video meetings. As vaccination rates rise, cases fall and policies limiting in-person contact are loosened, pharmaceutical and life sciences companies will need to navigate the fluid preferences for pharma-clinician interaction and adapt accordingly.

DEFLATORS

DEFLATOR: Consumers lean into lower-cost sites of care

Employers and payers have been nudging people toward lower-cost sites of care over the past few years through care advocacy programs, benefit and network design, and lower copays or coinsurance.[57] Now consumers may need less nudging. More people are shopping around for care, according to a recent HRI report, and millions of consumers became familiar with receiving care in lower-cost, more convenient ways during the COVID-19 pandemic.[58] HRI expects these shifts in consumer behavior to reduce healthcare spending in 2022.

Consumers increasingly embraced care outside of the doctor's office during the pandemic

The share of Americans using health settings outside of the traditional doctor's office or hospital soared during the pandemic. According to the consumer survey conducted by HRI in September 2020, the share of consumers reporting that they had used virtual visits doubled by September compared with before the pandemic.[59] The share reporting that they had used a retail health clinic increased by 40%, and the share reporting that they had gone to an urgent care center grew by 18% over that period. Most said they would use these lower-cost sites again (see Figure 9).

Clinicians also see the benefits of lower-cost sites of care, and in particular telehealth. Seventy-seven percent of clinicians surveyed by HRI in 2021 said that new, nontraditional care venues, including retail clinics, concierge medicine services and on-demand telehealth, either are maintaining or improving patient health outcomes.[60] Fifty-one percent said they are increasing patient satisfaction. And of clinicians who reported using telehealth, 65% said it had positively impacted their work experience while only 19% said it had negatively impacted it.[61]

According to the CDC, overall emergency department volumes decreased by

42%

during the pandemic lock-downs between March and April 2020.

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Meanwhile, the "house call" of the past is taking on new life. While still an emerging trend, more than three-quarters of consumers HRI surveyed said they were willing to get in-home care for care ranging from a well visit to chronic disease management.[62] Some large payers, such as Anthem and UnitedHealthcare, have sealed deals to expand their focus on home-based health services.[63]

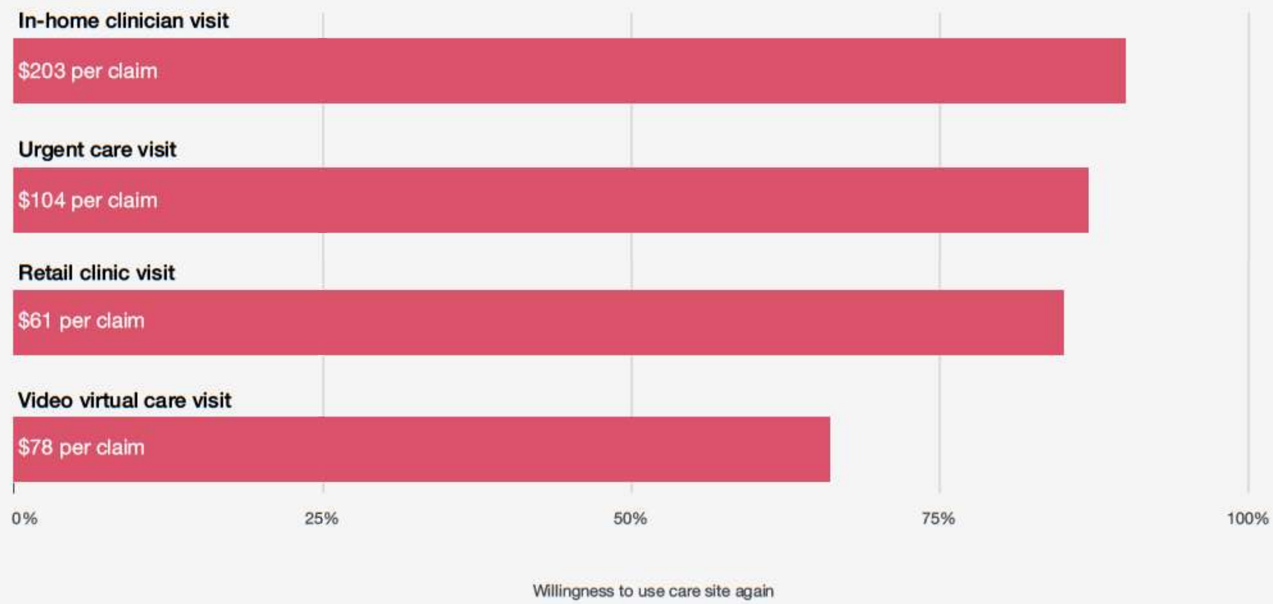
The emergency department (finally) becomes the last resort

The COVID-19 pandemic deflated emergency department (ED) utilization.[64] According to the CDC, overall ED volumes decreased by 42% during the pandemic lockdowns between March and April 2020.[65] But even in the beginning of 2021, ED volumes were still 25% below pre-pandemic levels.

"As we saw use decrease, the average service intensity increased in 2020, and ER was no exception," said Kirk Roy, vice president of underwriting and actuarial at Blue Cross Blue Shield of Michigan, in an interview with HRI. "People were only going in for the most important things. This is a behavioral change."

Figure 9: Willingness to seek care again in lower-cost settings is high among consumers with employer-based coverage

Willingness among consumers with employer-based coverage to use care site again compared with average cost per claim



Source: PwC Health Research Institute consumer survey, September 2020, and PwC analysis of 2019 employer claims data from a proprietary claims database[66]
Note: The percent willingness shown is the percentage of individuals with employer coverage who used that type of care either before or during the pandemic and indicated they would be somewhat or very willing to use that setting in the future.[67]

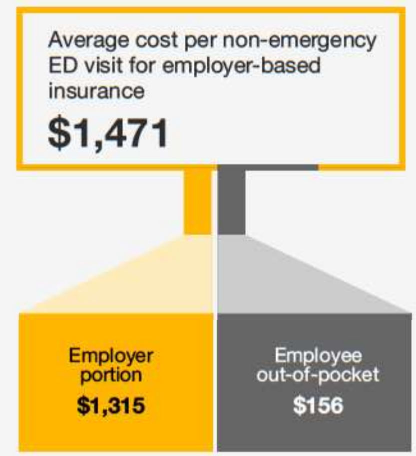
Even a small decrease in utilization can have a significant impact on bending the cost curve for employers, who spent over $28 billion on ED care in 2018.[68] About 33% of ED visits were for non-emergencies—visits that did not require an MRI, CT scan or surgery, did not result in hospitalization and were not labeled as an emergency in the Medical Expenditure Panel Survey data—in 2018, accounting for 30% of all employer ED spending.[69] A 10% decrease in non-emergent ED visits could save employers nearly $900 million per year (see Figure 10).

Some ED visits—especially lower-acuity ones—may never return to pre-pandemic levels. One study published in 2010 estimated that 13% to 27% of ED visits could be managed in retail clinics and urgent care settings, saving the health system $4.4 billion annually.[70] According to the CDC, 12% of patients with private insurance go to the ED because their doctor's office is closed; 7% go because they lack access to another option.[71] Those reasons may now be less important; the explosion of telehealth during the pandemic has given patients a very convenient, 24/7/365, lower-cost alternative.

Figure 10: A 10% decrease in non-emergent ED visits could save employers millions annually

Gross impact of drop in non-emergent ED spending*

	Spending/potential savings on non-emergent ED care	Employer share	Employee share
2018 baseline	*$ 9.7 billion*	*89%*	*11%*
5% decrease	–$483 million	–$432 million	–$51 million
10% decrease	**–$966 million**	**–$864 million**	**–$102 million**
20% decrease	–$1.9 billion	–$1.7 billion	–$205 million



Source: PwC Health Research Institute analysis of 2018 Medical Expenditure Panel Survey (MEPS) data
*Analysis shows the gross savings of a decrease in ED visits rather than the net savings that would include an increase in spending resulting from some of the non-emergency ED visits shifting to urgent care centers, telehealth or other lower-cost care settings. The net savings would be lower than the amounts shown in this figure.
Note: The total annual ED visits and total annual spending by employers and employees included in this figure may be lower than actual, as MEPS data are based on MEPS respondent reporting, which is known to be lower than provider-reported data for ED visits.[72]

Very few telehealth encounters during the early months of the pandemic resulted in sending patients to the ED. A CDC study of telehealth encounters conducted between January and March 2020 found that just 1.5% were sent to an ED.[73] New York University Langone Health reported having referred only 2.5% of its virtual urgent care patients to an ED from March to April 2020.[74] Of the patients that responded to the post-visit survey, 12% said they would have gone to an ED if not for this virtual option.[75]

Some consumers also are warming to the idea of using telehealth for situations they deem emergent, HRI found (see Figure 11).

Figure 11: Consumers with employer-based insurance, particularly those with complex chronic disease, are interested in using telehealth, some even for emergency situations, which could lead to reduced ED utilization and spending

	All consumers with employer-based insurance	Healthy adult enthusiasts	Healthy adult skeptics	Adults with mental health condition	Adults with chronic disease	Adults with complex chronic disease
Consumers with employer-based insurance who have used telehealth	29%	15%	29%	38%	28%	51%
Consumers with employer-based insurance who have used telehealth **and would consider using it again**	91%	81%	91%	93%	95%	95%
Consumers with employer-based insurance who have used telehealth **and would consider using it for emergency purposes**	18%	16%	23%	11%	12%	24%

Source: PwC Health Research Institute consumer survey, September 2020
Note: Consumers with employer-based insurance who have used telehealth are shown as a percentage of all consumers with employer-based insurance. The subsequent two rows are shown as a percentage of consumers with employer-based insurance who have used telehealth. Five of the seven HRI consumer groups are shown in this breakdown of individuals with employer-based insurance by consumer group. See "About This Research" section for details on the consumer groups. The frail elderly consumer group is excluded, as this group generally does not apply to individuals with employer-based insurance. The adults with cancer consumer group is excluded because of an insufficient sample size for those who have employer-based insurance and had used telehealth.

IMPLICATIONS ›››

Employers: **Make sure the care options available to your employees meet evolving preferences and needs.** More than half of large employers responding to a survey by the Business Group on Health said their approach to care delivery reform in 2021 would be to find a way around the current delivery system by implementing virtual and digital care, navigation and concierge services.[76] Some employers also are expected to expand their onsite workplace clinic offerings as employees return to work in person. Thirty-nine percent of employers surveyed by the National Alliance of Healthcare Purchaser Coalitions in March 2021 said they currently offer an on-site or near-site clinic, with 16% considering them.[77]

Employers should continue to encourage appropriate utilization through plan design and effective communication. Seventy-six percent of employers surveyed by the Business Group on Health in 2020 said they had made modifications in favor of increased access to telehealth and virtual care in response to the pandemic.[78]

Payers: **Offer accessible, effective alternatives to the ED and integrate them into primary care.** As of 2021, Oscar Health, a New York-based tech-driven health insurance company that offers plans to small businesses, added free virtual primary care and 24/7 virtual urgent care to its offerings.[79] GuideWell Emergency Doctors, whose parent company, GuideWell, also owns Florida Blue, offers ED-level care to Florida residents through a high-acuity urgent care center.[80] Florida Blue members pay significantly reduced copays for the first two urgent care visits to encourage its use.[81]

Integrating telehealth, urgent care and other visits used in place of ED visits back into primary care will be important to lowering spending and improving members' health.

Providers: **Help patients get the most out of lower-cost sites of care.** To get the most value out of the shift to virtual care, patients need affordable access to technology that will facilitate their visit. For example, Novant Health of Winston-Salem, North Carolina, has partnered with TytoCare, a health tech company, to provide consumers with at-home medical exam kits (for a fee), enabling doctors to virtually listen to the patient's heart and lungs, or look in their throat or ears.[82] Patients connect the kit to a TytoCare app on their phone and video connect with a provider via the app.[83] Providers should have education strategies that shorten the learning curve for patients and ensure efficiency, accuracy and quality.

Care navigators could help with this education. Fifty-eight percent of providers and nurses surveyed by HRI in 2021 believed that using more care navigators and coordinators will help facilitate patient care.[84] Sixty-eight percent of provider executives say they are investing more in them in 2021, according to a recent HRI survey.[85] Care navigators can help patients avoid unnecessary hospital admissions and trips to the ED and have been found to lower the cost of care by 17%.[86]

With dwindling ED volumes, providers will need to either address fixed cost structures or increase prices, which employers will surely resist. Continued investment in tele-ED capabilities—such as those offered by Thomas Jefferson University Hospitals in Philadelphia, Mount Sinai Health System in New York City and MedStar Washington Hospital Center in Washington, DC—will also be critical to lowering ED utilization post-pandemic.[87]

Pharmaceutical and life sciences companies: **Rethink diagnostics in light of virtual and at-home care trends.** Consumers are warming up to at-home, do-it-yourself testing. Eighty-eight percent of consumers with employer-sponsored insurance surveyed by HRI in April 2020 said they would use an at-home COVID-19 test.[88] Fifty-eight percent of consumers with employer-based insurance surveyed by HRI in May 2020 said they would use an at-home strep test purchased at a store, and 51% said they would check for an ear infection at home using a medical device attached to their phone.[89]

Investment in at-home medical kits that help facilitate virtual exams will be important. Traditional diagnostics makers may need to redesign their target product profiles, focusing on usability and reproducibility in their results. Pharmaceutical and life sciences companies should consider expanding their relationships and partnerships with at-home care providers if more patients start to prefer this setting for things such as infusions.

Pharmaceutical and life sciences companies should continue to offer digital apps and therapeutics that enable consumers to monitor their biometrics and symptoms at home. Total corporate funding for remote monitoring companies more than doubled from $417 million in 2019 to $941 million in 2020, according to the investment firm StartUp Health.[90] While only 18% of consumers with employer-based insurance surveyed by HRI said they had used a mobile app to help them take a prescription drug correctly or let them log symptoms, 93% of those who had done so thought it was useful.[91]

While only 18% of consumers with employer-based insurance surveyed by HRI said they had used a mobile app to help them take a prescription drug correctly or let them log symptoms,

93%

of those who had done so thought it was useful.

DEFLATOR: Health systems find ways to provide more healthcare for less

Where just a year ago health system leaders could not imagine a distributed "at home" workforce, they were quickly forced to improvise during the pandemic. Patient care had to be delivered remotely, and centralized functions like the business office were moved to employees' homes. It was a necessary pivot for the times that revealed a new way of working, one that can improve employee satisfaction while responding to employer pressures to reduce costs in 2022.

The pressure to provide more healthcare for less has been building. Employer interest in high performance and narrow networks increased during the pandemic, according to PwC's 2020 Health and Well-being Touchstone survey of large employers. Sixteen percent of employers surveyed by PwC said that they had already implemented a narrow network with more limited provider choices; 30% were considering it.[92]

New federal price transparency rules could increase the information that hospitals and payers must release to the public. Employers may be able to use these data—such as hospitals' payer-specific negotiated rates and payers' negotiated in-network rates—to put pricing pressure on both sides of the traditional payer-provider contract negotiation.[93]

Health systems can reduce costs through new ways of working

The shift to remote work for some healthcare employees could reduce costs. In a recent HRI survey, 54% of provider executives said they had started offering work-from-home options to help employees cope with the pandemic.[94] Employees are responding to these options. The average number of administrative staff working virtually increased 23% as a result of the COVID-19 pandemic.[95]

Health systems are starting to rethink their real estate spending, too. UW Medicine in Seattle shrank office space as a result of permanent shifts to working from home. The health system is reportedly saving $150,000 per month after terminating two real estate leases that were used for the IT department.[96] Kaiser Permanente recently canceled its estimated $900 million headquarters project in Oakland, California.

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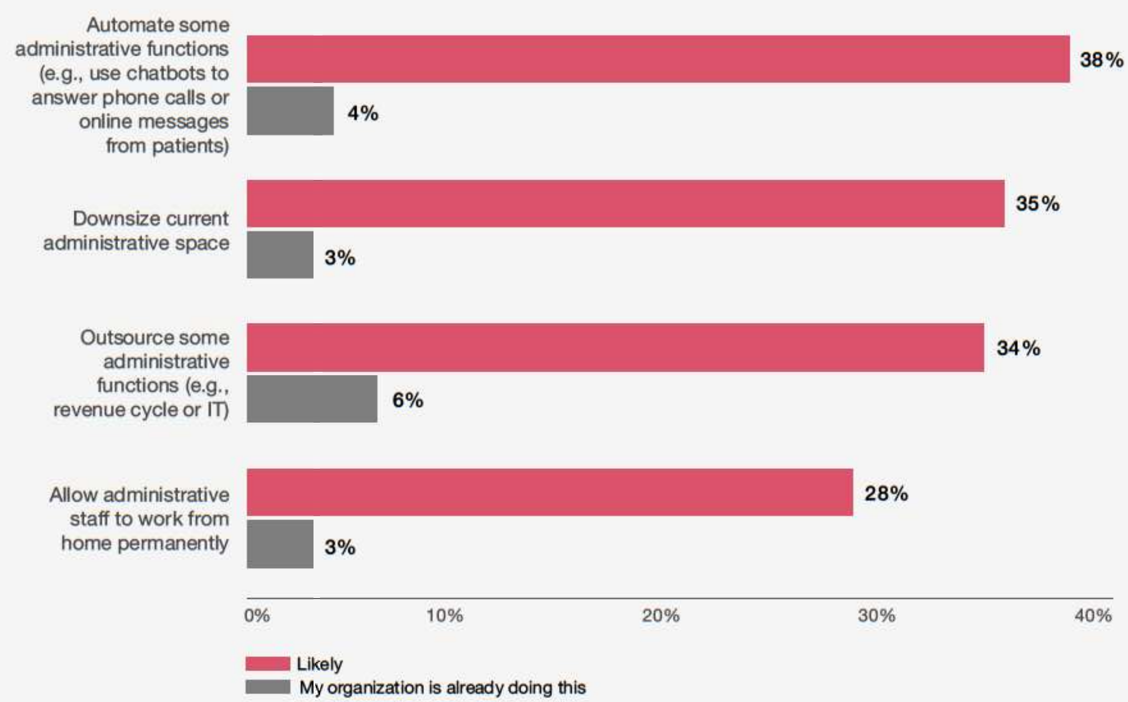
It plans to use existing spaces instead of increasing its real estate footprint.[97] The ability of health systems to shed some of their capital-intensive infrastructure could be a competitive advantage as they face increased pressure on reimbursement rates.

HRI expects more health systems to revisit how much real estate they need for administrative functions, especially as they increase work-from-home options and reconsider the allocation of space between business functions that typically do not generate revenue and patient care that does (see Figure 12).

Health systems can increase efficiency through process automation and cloud technology

Technology-based efficiencies are being adopted by providers to reduce costs and boost revenue. Seventy-one percent of provider executives surveyed by HRI in 2020 reported significant investments in automating administrative functions, up from 47% the previous year.[98] Thirty-one percent reported that adopting automation and artificial intelligence for tasks previously performed by employees was a top priority in 2021.[99]

Figure 12: Organizational changes clinicians expect as a response to the COVID-19 pandemic



Source: PwC Health Research Institute clinician survey, March-April 2021
Note: The responses shown do not total 100%, as the options "Unlikely" and "I don't know" are excluded.

Minneapolis-based Allina Health used predictive modeling to determine where to focus collection efforts based on customers' propensity to pay. This allowed the company to reduce wasted resources and increase collections by $2 million in the first year of implementation.[100] Moffitt Cancer Center, headquartered in Tampa, Florida, implemented robotic process automation in its revenue cycle department and reduced monthly labor by about 27,000 hours, which translates to about $500,000 in savings.[101] Both organizations freed up labor hours through their efforts. Companies that take similar steps can eliminate these hours, reroute them to other purposes or limit how much hiring they need to do as their organizations grow (see Figure 13).

Cloud services are growing in popularity as they reduce the physical space and fixed assets of health organizations. They also are an enabling technology that allows employees to work from home. The global healthcare cloud computing market is expected to reach about $27.8 billion by 2026.[102] More than a quarter of respondents to a 2020 Black Book survey reported that they were actively assessing cloud-based electronic health record alternatives.[103]

Figure 13: How a shared health system business office reduced costs through new ways of working and technology innovation

Strategies	Results
Continue work-from-home strategies post-pandemic	Before COVID-19, leased more than 100,000 square feet for 700 business office employees at a cost of more than $2 million a year. After COVID-19, plans to reduce lease footprint by 75% with permanent work-from-home arrangements.
Implement process automation for back-office and revenue cycle functions	Many back-office and revenue cycle staff members worked with manual processes for intake of data, sorting and synthesizing. Process automation implementation reduced manual work by 25% to allow staff to focus on higher functions and to reduce overall staff needs.
Use real-time dashboard for financial oversight	It historically took days of effort to get a snapshot on receivables and collections. This meant high effort to get information that was stale by the time it was prepared. By creating an online dashboard accessible via laptop or mobile device, the business office reduced labor costs and allowed for better executive decision-making and faster interventions for any challenges.

Source: PwC Health Research Institute interview with the leader of a shared health system business office on March 25, 2021

IMPLICATIONS »»

Payers: **Use technology to reduce your medical and administrative costs.** Medical Mutual of Ohio is integrating artificial intelligence into chronic disease prevention and management to improve member health and help employers generate financial savings.[104] Humana is using bots to assist employees in handling claims.[105]

Payers should invest in the data and analytics needed to decipher provider price transparency information and use it for network negotiations.[106] Payers will also be subject to price transparency rules and must plan to accumulate and communicate the required information in a way that will benefit their members.

Employers: **Understand what your health plan pays for services and how that compares with other health plans to push for better rates.** Use provider pricing and quality data to build new, high-performing networks for better value.

Consider what collaboration tools you should add or refine to improve your employees' work experience. In a recent PwC survey, nearly a quarter of employees across industries said their organization's tools and resources are either not very or not at all effective for collaboration, communication and creativity.[107] While this will not necessarily reduce your company's healthcare spending, it could contribute to employee well-being by improving worker satisfaction and efficiency.

Providers: **Consider what cost-saving measures and back-office initiatives are right for your organization.** While many organizations have been working remotely for a year, most have used makeshift collaboration tools and should consider investing in more permanent solutions.

Lessons from the pandemic and cost-saving measures in administrative functions may set up providers to apply similar measures to improve the clinician experience and reduce costs in clinical settings. When asked what their organization planned to do in response to the COVID-19 pandemic, 22% of clinicians surveyed by HRI in 2021 reported plans to decrease physical space as they deliver more care virtually.[108] As providers contemplate these changes, they should apply human-centered design to improve the quality of those changes: consider how their clinicians actually perform tasks, identify pain points and engage clinicians in designing new ways to get the job done.[109]

22%

of clinicians surveyed by HRI in 2021 reported plans to decrease physical space as they deliver more care virtually.

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Figure 14: Trends to watch in 2022

Not all trends are new or clearly inflators or deflators of the medical cost trend, but some are important enough influencers to watch. These are the top items HRI will be following over the next year to see how they influence the medical cost trend.

Drug spending

Specialty drug spending is a consistent driver of medical cost trend.

The pipeline of costly cell and gene therapies is only expected to increase, as the FDA has approved two new cell therapies to treat cancer already this year and 15 to 30 such therapies are anticipated to hit the market in the next five years.[110]

Use of biosimilars, a cheaper but still costly version of branded biologic medicines, has started to increase in the US and is projected to result in $104 billion in savings from 2020 to 2024, with the bulk of savings coming in 2023 and 2024, according to IQVIA.[111]

Employers are covering more of the increases in costs.[112] On average, insurance covers a larger share of retail prescription drug spending than a decade ago, while consumers' share has leveled off in recent years.

Cybersecurity

The costs associated with data breaches and ransomware attacks can be material, hindering an organization's ability to operate.

Companies that used automation technologies to identify and respond to security events experienced less than half the data breach costs of companies that did not—$2.5 million vs. $6 million on average.[113] Twenty percent of health industries executives responding to PwC's 2021 Global Digital Trust Insights survey in fall 2020 said they were already seeing benefits from using artificial intelligence in cyber defense.[114]

While cyber attacks remain a big threat, determining how much to invest in mitigating that threat is not always simple. Forty-eight percent of health industry executives surveyed by PwC said they are increasing their cyber budgets in 2021.[115] "You can't pour enough resources into it. You are trying to stay one step ahead of the hackers," Mary Grealy of the Healthcare Leadership Council told HRI.

Surprise billing

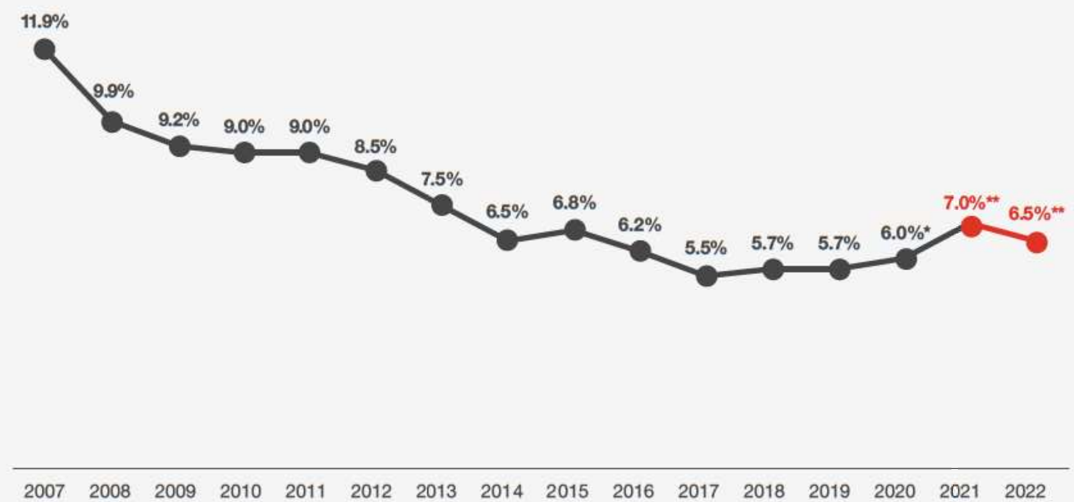
An intra-industry squabble between payers and providers that often left consumers with unexpected medical bills has largely been put to rest with the No Surprises Act, which takes effect Jan. 1, 2022.[116]

The implications for employer healthcare spending are uncertain. The Congressional Budget Office said the law will lower premiums by 0.5% to 1% because of "smaller payments to some providers."[117] Others think the law could drive higher spending as costs shift from the consumer to the payer or employer, and the new costs of arbitration come into play.

"The mechanism we are using to end surprise billing seems like it may raise administrative costs that will ultimately be passed on to consumers via higher premiums," said Niall Brennan, president and CEO of the Health Care Cost Institute, in an interview with HRI.

Appendix: Medical cost trend

Figure A: Medical cost trend projected to be 6.5% in 2022, down from 7% in 2021



Source: PwC Health Research Institute medical cost trends, 2007-22
*Projected medical cost trend. Does not account for the effects of the pandemic on actual 2020 spending.
**Growth in spending expected over prior-year spending, with the effects of the pandemic removed from the prior-year spending.
Note: The 7% medical cost trend for 2021 was revised from a range of scenarios, from 4% to 10%, originally projected in PwC Health Research Institute's "Medical Cost Trend: Behind the Numbers 2021" report in June 2020. This revision reflects the average medical cost trend that was used for 2021 premium rate setting in 2020, shared with HRI during interviews conducted February–May 2021.

What is medical cost trend?

HRI defines medical cost trend as the projected percentage increase in the cost to treat patients from one year to the next, assuming benefits remain the same. Typically, spending data from the prior year is used as an input in the projection. For 2021 and 2022, the medical cost trend is the projected percentage increase over the prior year's spending, with the effects of the pandemic removed from the prior year's spending.

While medical cost trend can be defined in several ways, this report estimates the projected increase in per capita costs of medical services and prescription medicine that affect commercial insurers' large group plans and large, self-insured businesses. Insurance companies use the projection to calculate health plan premiums for the coming year. For example, a 5% trend means that a plan that costs $10,000 per employee this year would cost $10,500 next year.[118] The medical cost trend, or growth rate, is influenced primarily by:

- Changes in the price of medical products and services and prescription medicines, known as unit cost inflation.
- Changes in the number or intensity of services used, or changes in per capita utilization.
- For 2021 and 2022, an additional adjustment for the expected changes in both price and utilization of services resulting from the direct and indirect effects of the COVID-19 pandemic on spending.

What did HRI consider when revising the 2021 projection and setting the 2022 projection for medical cost trend?

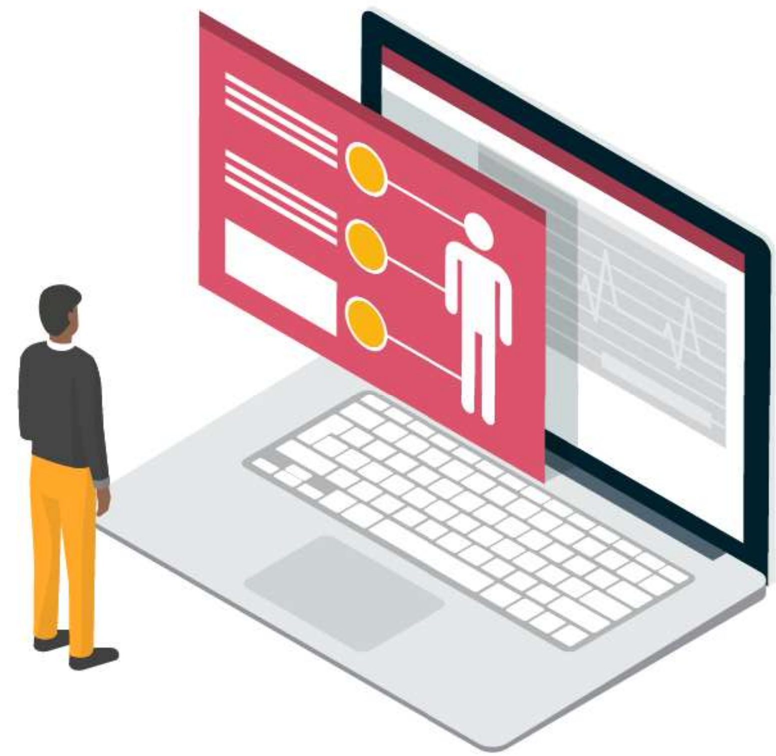
During interviews conducted between February and May, health plan executives told HRI that when they set premiums for 2021 in 2020, they adjusted the projected medical cost trend for 2021 upward from a "normal" trend to account for the pandemic. Based on the adjustments made by the health plans and reported to HRI, HRI revised its projected medical cost trend for 2021 to 7%, reflecting a normal medical cost trend of 6% plus an adjustment for additional costs due to the pandemic in 2021.

For 2022, most health plan executives said they were considering adjusting the normal medical cost trend upward again to account for the costs of the pandemic, but that they expected a smaller pandemic adjustment in 2022 compared with 2021. HRI's projected medical cost trend of 6.5% for 2022 represents an increase of 0.5% above a normal trend of 6%, to account for the additional costs due to the pandemic in 2022.

The lower projected medical cost trend for 2022 compared with the projected 2021 trend reflects two key differences. First, the pandemic's persistent effects are expected to have a smaller, upward impact on spending in 2022 compared with 2021. Second, health plans and employers are facing less uncertainty in 2021 as they project 2022 spending than they were in 2020 projecting 2021 spending. The range of potential spending scenarios is narrower for 2022, leading to a smaller adjustment to normal trend for the pandemic's persistent effects in 2022 and, in turn, lower medical cost trend in 2022 compared with 2021.

How are health plans and self-insured employers projecting their trends?

Health plans and self-insured employers used and are using a range of methods to project medical costs in 2021 and 2022. Most are removing the COVID-19-driven impacts from their baseline claims and trends, so that the baseline period and trends look as if the pandemic did not happen. Using this adjusted baseline, they are starting with a normal trend based on the assumption that spending will return to the levels that would have been expected in 2021 and 2022, if there had not been a pandemic. From there, they are adjusting their normal trend for 2021 and 2022 to reflect the expected impacts of the

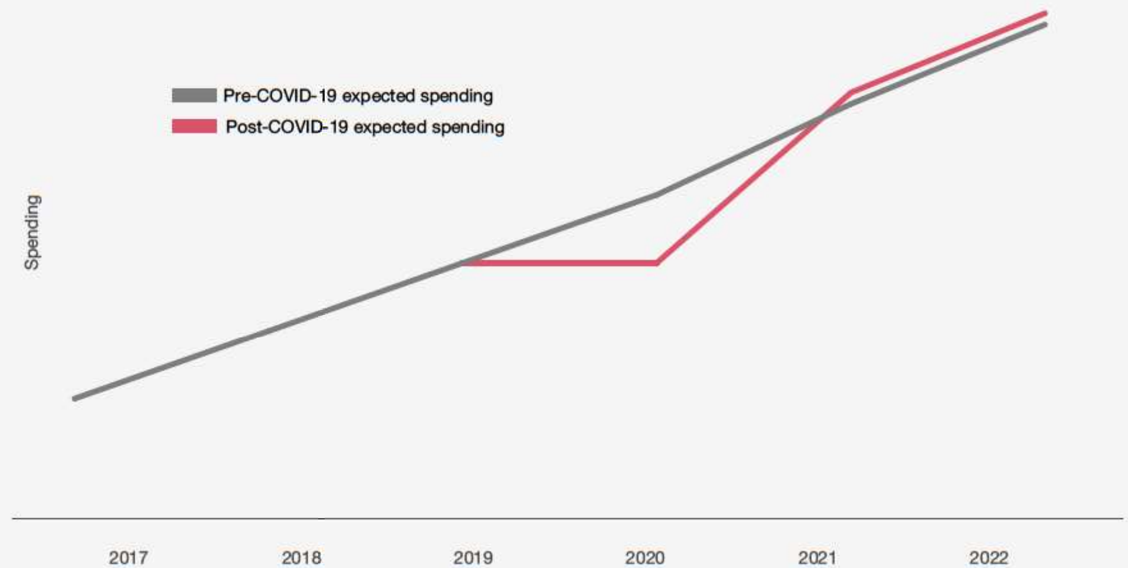


pandemic on spending in each year, such as additional testing and treatment during continued waves of the pandemic, vaccine costs, worsening population health, and positive and negative behavior changes seen during the pandemic that could outlast it (see Figure B).

Didn't healthcare spending by employers dip during the pandemic?

Overall, healthcare spending by employers in 2020 fell well below the expected 6% growth rate. Despite lower-than-expected healthcare spending in 2020, health plans and employers expect healthcare spending in 2021 and 2022 to grow to levels that exceed those that would have been expected in the absence of the pandemic. This relationship is best illustrated by an example (see Figure B). The growth in 2021 and 2022 reflects the return of the usual pre-pandemic spending on healthcare plus the ongoing COVID-19 vaccine, testing and treatment costs as well as worsening population health resulting from the pandemic.

Figure B: Health plans and employers expect spending in 2022 to be higher than what would have been expected in 2022 before the pandemic



Source: PwC Health Research Institute illustrative example comparing projected spending trend pre-pandemic and post-pandemic
Note: Spending in 2020 was lower than expected because the savings from the deferral of care outweighed the costs of care related to COVID-19. In 2021, healthcare spending is expected to return to normal levels and, in some cases, grow above those levels as some care not received in 2020 is received in 2021. The continued costs of care related to COVID-19, including testing, treatment and vaccinations, are expected to push costs further above normal levels in 2021. By 2022, healthcare spending is expected to return to nearly normal levels, with boosts from the continued costs of COVID-19 testing, treatment and vaccinations, as well as worsening population health.

The expectation before the pandemic was that healthcare spending would grow by 6% annually, including in 2020, as shown in the gray line. The pandemic caused spending to remain relatively flat in 2020, as illustrated by the pink line, and is expected to cause spending to grow above its pre-pandemic expected levels in 2021 and 2022.

What happened to the savings from lower-than-expected healthcare spending in 2020?

Because of the pandemic, healthcare spending in 2020 fell below the expected 6% medical cost trend. And the projected medical cost trends for 2021 and 2022 do not take these savings into account. But health plans were not the sole beneficiaries of lower-than-expected spending in 2020. Here is how health plans and employers addressed the lower-than-expected spending in 2020:

Fully insured large group health plans: All fully insured large group health plans are subject to federal medical loss ratio (MLR) requirements that mandate they spend at least 85% of total premiums in a given plan year on healthcare-related costs, including medical care, prescription drugs and limited healthcare quality improvement expenses.[119] If plans do not meet this threshold, they are required to rebate a portion of the premiums back to the employer and, in some cases, its employees. Some fully insured health plans provided premium rebates or premium holidays to their employer large group clients in 2020 to proactively pass along the benefits of lower-than-expected spending.[120] Some may have to issue rebates later in 2021 after submitting their MLR filings. Others, in accordance with their contract with each specific employer, may refund the employer retroactively based on their healthcare spending in 2020 or reduce future premium rate increases based on 2020 spending—something that would reduce the premium rate change but not affect the medical cost trend in future years.

Self-insured large group health plans: Self-insured employer plans are subject to a different set of rules under the Employee Retirement Income Security Act of 1974 (ERISA).[121] Self-insured plans subject to ERISA are not subject to MLR requirements and in turn have flexibility in how they spend or save the money not spent on healthcare in 2020 as expected.[122] Some of them invested the savings from lower-than-expected healthcare spending in programs related to employee health and well-being, for example expanding virtual options to include weight management and disease management programs; expanding mental health services, including offering free mental health visits through employee assistance programs (EAPs); or expanding or creating paid time off for caregiving.[123]

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Endnotes

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About this research

Each year, PwC's Health Research Institute (HRI) projects the growth of employer medical costs in the coming year and identifies the leading trend drivers. Health insurance companies use medical cost trend to help set premiums by estimating what this year's health plan will cost next year. In turn, employers use the information to make adjustments to benefit plan design to help offset health insurance cost increases. The report identifies and explains what it refers to as "inflators" and "deflators" to describe why and how the healthcare spending growth rate is affected.

This forward-looking report is based on the best available information through June 2021. HRI conducted 31 interviews from February through May 2021 with health benefits experts and health plan actuaries whose companies cover nearly 90 million employer-sponsored large group members about their estimates for 2022 and the factors driving those trends.

Included are findings from PwC's 2020 Health and Well-being Touchstone Survey of about 450 employers from 35 industries.

HRI's clinician survey was conducted online in March and April 2021 with responses from 1,362 clinicians including 389 physicians, 168 physician assistants, 152 nurse practitioners, 330 registered nurses and 323 community or retail pharmacists. Additional breakdowns of the 1,362 clinicians surveyed include: 709 providers, including physicians, physician assistants and nurse practitioners; 1,039 providers and nurses, including providers and registered nurses; 892 providers and office-based nurses, including providers and registered nurses working outside of a hospital setting, in a specialty other than acute care nursing; and 752 office-based providers and office-based nurses, including providers working outside of a hospital setting, in a specialty other than hospitalist or intensivist, and office-based nurses. The margin of error was plus or minus 3 percentage points at a 95% confidence level. The survey collected data on clinicians' perspectives on a broad range of topics across the healthcare landscape, ranging from virtual care, digital tools and new ways of working to social determinants of health, care navigation and mental health.

HRI's consumer survey was conducted online from Sept. 9 to 22, 2020, with 2,511 US adults representing a cross section of the population in terms of insurance type, age, race, gender, geographic region and political affiliation. The margin of error was plus or minus 2 percentage points at a 95% confidence level. The survey collected data on consumer perspectives about the healthcare landscape before, during and after the COVID-19 pandemic, including respondents' use of health services and thoughts about how they may interact with the health system in the future. HRI used these data to compare with previous polls of US adults.

HRI defines the consumer health groups reported on in this report as follows. Note that the frail elderly consumer group is often excluded from the analysis in this report, as this group generally does not include individuals with employer-sponsored coverage.

- Frail elderly are over the age of 75, living at home and facing health issues related to falls or dementia and suffering generally poor health.
- Adults with chronic disease have problems affecting a single body system such as hypertension and require uncomplicated disease management.
- Adults with complex chronic disease live with one or more chronic diseases affecting multiple body systems and requiring complicated disease management.
- Adults with cancer are undergoing treatment for cancer.
- Adults with mental illness have a primary health issue of depression or mood disorders, post-traumatic stress disorder, addictions and/or suicidal ideations.
- Healthy adult skeptics generally avoid interacting with the health system and are less likely to have health insurance than other consumer groups.
- Healthy adult enthusiasts value a regular physical, recommended screenings and wellness/coaching services.

HRI also surveyed health executives. This poll was conducted online from Aug. 21 to Sept. 10, 2020, with responses from 153 provider, 124 pharmaceutical and life sciences, and 128 payer executives. The margin of error was plus or minus 5 percentage points at a 95% confidence level. HRI periodically surveys industry executives to gain insight into current business leader perspectives and experiences, as well as to track changes over time.

HRI also examined government data sources, journal articles and conference proceedings in determining the 2022 growth rate.

"Behind the Numbers 2022" is HRI's 16th report in this series.

About the PwC network

At PwC, our purpose is to build trust in society and solve important problems. We're a network of firms in 155 countries with more than 284,000 people who are committed to delivering quality in assurance, advisory and tax services. Find out more and tell us what matters to you by visiting us at pwc.com.

About PwC's Health Research Institute

PwC's Health Research Institute (HRI) provides new intelligence, perspectives and analysis on trends affecting all health-related industries. HRI helps executive decision-makers navigate change through primary research and collaborative exchange. Our views are shaped by a network of professionals with executive and day-to-day experience in the health industry. HRI research is independent and not sponsored by businesses, government or other institutions.

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