



prealze

# 2021 State of Health: Bracing for Impact

Three major boomerang  
conditions payers and providers  
must proactively address

## Overview

**The COVID-19 pandemic created unprecedented challenges for individuals and U.S. healthcare organizations alike. With over 15 million cases and more than 300,000 deaths by the end of 2020, the pandemic has stretched an already taxed and largely reactive healthcare system to the limit.**

"There's going to be an explosion in the presentation of certain diseases, such as cancer and cardiac conditions," says Ronald A. Paulus, MD, President and CEO at RAPMD Strategic Advisors, and Immediate Past President and CEO of Mission Health, an integrated safety-net health system in North Carolina. "Many patients didn't care for themselves or use the healthcare system in 2020 as they typically would, so many underlying diagnoses haven't been discovered yet."

As 2021 dawns with several vaccines on the horizon, organizations must prepare for the fallout of additional residual healthcare crises. COVID-19's hidden victims—those who avoided or deferred care during the pandemic—will increasingly return to the healthcare system, and many will be diagnosed with new conditions at more advanced stages. This boomerang is a recipe for worse outcomes and higher costs.

To explore the full scope of healthcare utilization and procedural declines in 2020, and assess how those declines will impact patients' health and payers' pocketbooks in 2021, Prealize Health, an AI-powered predictive healthcare analytics company, conducted an analysis of claims data from nearly 600,000 patients between March 2020 and August 2020. For this analysis, Prealize identified the three predicted conditions likely to see the largest increase in healthcare utilization in 2021.

## Methodology

The 2020 utilization and procedural volumes that form the predictions included in this report are based on an analysis of claims data from nearly 600,000 U.S. patients between March 2020 and August 2020 (the latest month for which claims data was available at press time). To ensure that the sample reflected the broader U.S. population, the analysis included patients of all ages with commercial, Medicare, and Medicaid coverage.

To evaluate trends in healthcare utilization and procedure volumes, Prealize Health compared 2020 claims to claims from the same time period and patient population in 2019. It then applied over 50 machine-learning (ML) models built into its platform to project diagnostic and utilization trends for 2021. These ML models assess over 30 clinical drivers of future healthcare utilization to predict a patient's risk for being diagnosed with a clinical condition or needing a clinical procedure, up to 18 months before a claim is filed.

## Key Findings

### 2021 Predictions At-A-Glance

Year-over-year increases in diagnoses (between 2020 and 2021)

Diagnosis	Key Driver	Increase
Fractures	Delayed orthopedic procedures and care; increased sedentary behavior	112%
Cancer	Deferred screenings and care	23%
Ischemic Heart Disease	Deferred screenings and care	18%
Congestive Heart Failure (CHF)-Related	Deferred screenings and care	14%
COPD	Deferred care	8%
Behavioral Health	Expansion of telemedicine; minimal deferred care	Minimal change

## The COVID Effect

### Significant Declines in Diagnoses and Procedures

**Procedures and diagnoses fell nearly 50% for many conditions between March and June of 2020**

COVID-19 led to significant declines in healthcare utilization for preventive care, chronic care, and emergent care. Total healthcare utilization (based on the number of diagnoses and procedures performed) fell 23% between March and August of 2020, compared to the same time period in 2019, according to the analysis.

Mark Smith, MD, Professor of Clinical Medicine at the University of California at San Francisco, and Former President and CEO of the California HealthCare Foundation, says several factors contributed to the declines, including patients' fear of COVID-19 infection and healthcare providers' decisions to delay certain procedures and appointments.

Economic hardship and job loss also played a role, with a recent study by the Economic Policy Institute finding that roughly six million patients lost their health insurance between March 2020 and July 2020 alone.

**"We will continue to face unusual utilization patterns throughout 2021. It's a tumultuous time for providers and payers, unlike anything we have ever faced."**

— Mark Smith, MD

## Top Procedural and Diagnosis Declines

Many procedures and diagnoses fell nearly 50% between March and June of 2020, compared to the same time period in 2019. Though steep declines eased up between July and August of 2020 (compared to July and August of 2019), the numbers remained significantly below 2019 levels.

Procedure	March-June 2020	July-August 2020
Podiatry	47% decline	22% decline
Breast	47% decline	20% decline
Orthopedic	30% decline	27% decline
Neurosurgery	40% decline	8% increase
Cardiac	29% decline	21% decline

Diagnosis	March-June 2020	July-August 2020
Respiratory	50% decline	23% decline
Gastrointestinal	33% decline	19% decline
Cardiovascular	28% decline	15% decline
Cancer	26% decline	14% decline
Musculoskeletal	26% decline	26% decline
Diabetes	21% decline	17% decline
Behavioral Health	4% decline	20% decline

## 2021 Forecast

### Prediction #1

#### **Cardiac diagnoses will increase in 2021, with an 18% increase in ischemic heart disease and a 14% increase in congestive heart failure**

Cardiac-related diagnoses—already the leading cause of death in the U.S. for men and women—are predicted to increase in 2021. Much of the increase will be driven by 2020 healthcare utilization declines, such as patients deferring family medicine and internal medicine visits. These visits, which help flag cardiac problems and prevent them from escalating, declined 24% between March and August of 2020.

Fewer cardiac screenings in 2020 will also lead to more cardiac diagnoses in 2021. In April 2020 alone, 40% fewer cardiac screenings were performed than in April 2019. These screenings—such as electrocardiograms, echocardiograms, and stress tests—often reveal that a cardiac intervention is necessary.

“In many cardiac-related illnesses, care delays have significant ramifications,” says Paulus. “Not intervening early to prevent or treat developing cardiac disease ultimately will result in increased hospitalizations, morbidity, mortality, and expense.” In addition to fewer screenings in 2020, emergency department visits declined 23% between March and August, and much of that decline may be attributed to fewer cardiac-related visits.

A recent study based on data from five U.S. hospitals published in *BMJ Stroke and Vascular Neurology*, found a 30% decrease in patients presenting with strokes and a 63% decrease in patients presenting with ischemic attacks between March 23 and April 19, 2020, compared to the same period in 2019.

**“Not intervening early to prevent or treat developing cardiac disease ultimately will result in increased hospitalizations, morbidity, mortality, and expense.”**

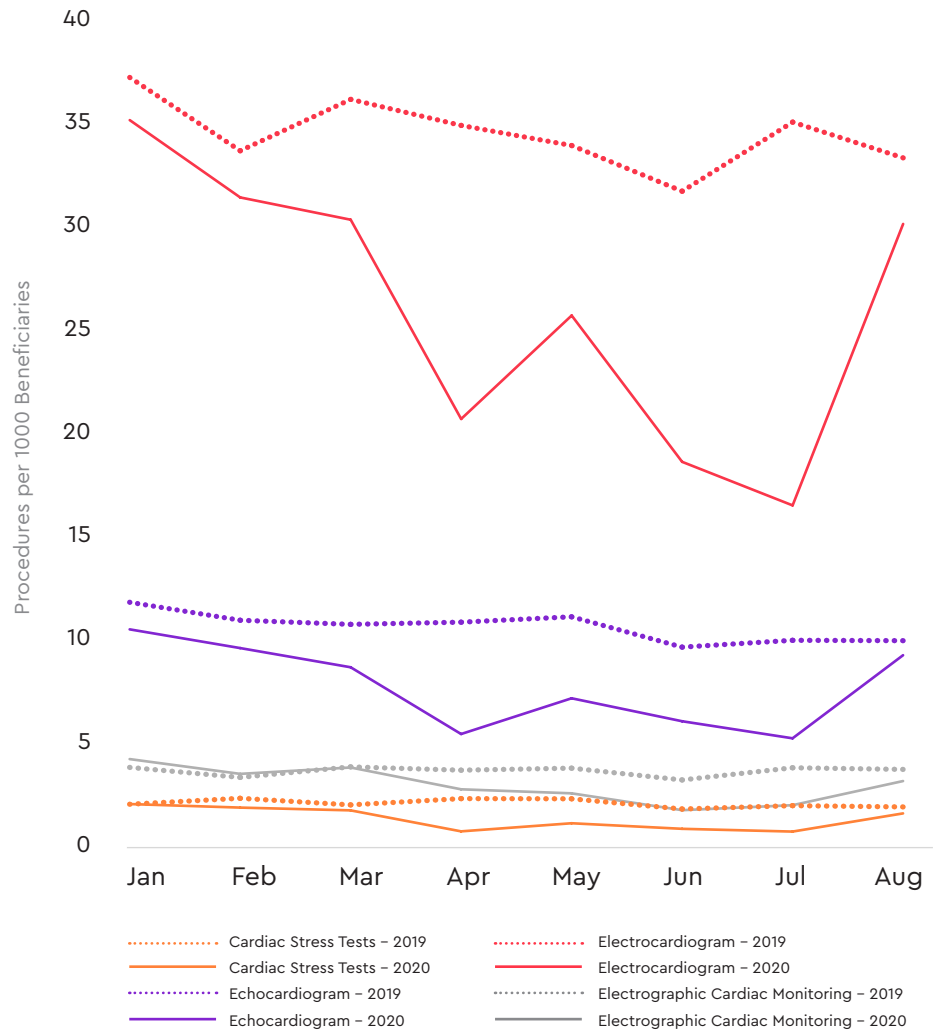
— Ronald A. Paulus, MD

**Data Dive**

**In April 2020 alone, 40% fewer cardiac screenings were performed than in April 2019.**

"These declines in emergent care raise significant concerns about an increase in patients with sequelae of cerebrovascular disease that might have been averted had they presented immediately," says Smith. "Similar concerns apply to myocardial infarctions and congestive heart failure."

**CARDIAC DIAGNOSTIC PROCEDURES**



**Expert Insight: Obesity and COPD Predictions**

The analysis predicts a 15% increase in patients diagnosed with obesity and an 8% increase in patients diagnosed with COPD in 2021. "Given that obesity and overweight are already at epidemic levels in the U.S., the predicted increase for obesity has troubling long-term implications," says Gordon Norman, MD, Chief Medical Officer for Prealize Health. "Obesity is a precursor for, and compounder of, cardiovascular disease, diabetes, depression, certain cancers, and other serious health issues."



— Gordon Norman, MD, Chief Medical Officer for Prealize Health

Prediction #2

**Cancer diagnoses will increase 23% in 2021**

Cancer is the second condition on the watch list for payers and providers in 2021, with a predicted 23% increase in patients with cancer diagnoses. Similar to cardiac screening trends, significant declines in cancer screenings in 2020 will be a key driver of this increase.

Overall, 46% fewer colonoscopies and 32% fewer mammograms were performed between March and August 2020 than during that same time period in 2019. The lowest utilization rates occurred April, when the number of colonoscopies dropped 93% compared to April 2019, and the number of mammograms fell 90%.

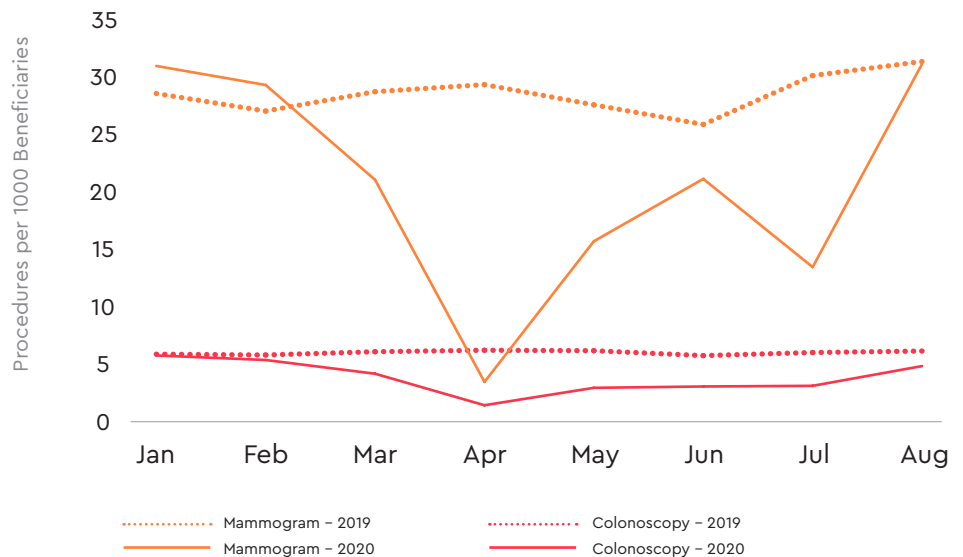
These findings align with recent research from the Dana Farber Cancer Institute, which found that diagnoses for the six most common cancer types dropped 46% between March 1 and April 18, 2020. The National Cancer Institute has also studied the impact of utilization declines, and predicts that the pandemic will result in nearly 10,000 additional breast cancer and colorectal cancer deaths over the next decade.

**Screening Shortfall**

**The number of colonoscopies dropped 93% in April 2020 compared to April 2019. The number of mammograms fell 90%.**

"Cancer doesn't stop developing or progressing because there's a pandemic," says Paulus. "In 2021, when patients who deferred care ultimately receive their diagnoses, their cancer sadly may be more advanced. In addition, an increase in newly diagnosed patients may make it harder for some patients to access care and specialists—particularly for those patients who are insured by Medicaid or lack insurance altogether."

**CANCER SCREENING PROCEDURES**



Prediction #3

Fractures will increase 112% in 2021

Payers and providers should also anticipate a significant increase (112%) in patients with fractures in 2021. This finding, based on combined analysis of osteoporosis risk and fall risk, is particularly troubling for the elderly patient population, says Paulus. "Fractures are a very risky event for seniors. They often lead to follow-on events, including very serious events like pulmonary embolism from lack of mobility."

In fact, the one-year mortality rate for patients ages 60 or older who have a hip fracture is 21%, according to a study published in Geriatric Orthopaedic Surgery & Rehabilitation.

Postponed elective orthopedic procedures in 2020, such as hip and knee replacements, will be a key driver of increased fractures in 2021. In April 2020 alone, the number of hip replacements and arthroscopies dropped 80% year-over-year. These procedural delays are likely to decrease mobility, and therefore, increase risk of fractures from falls.

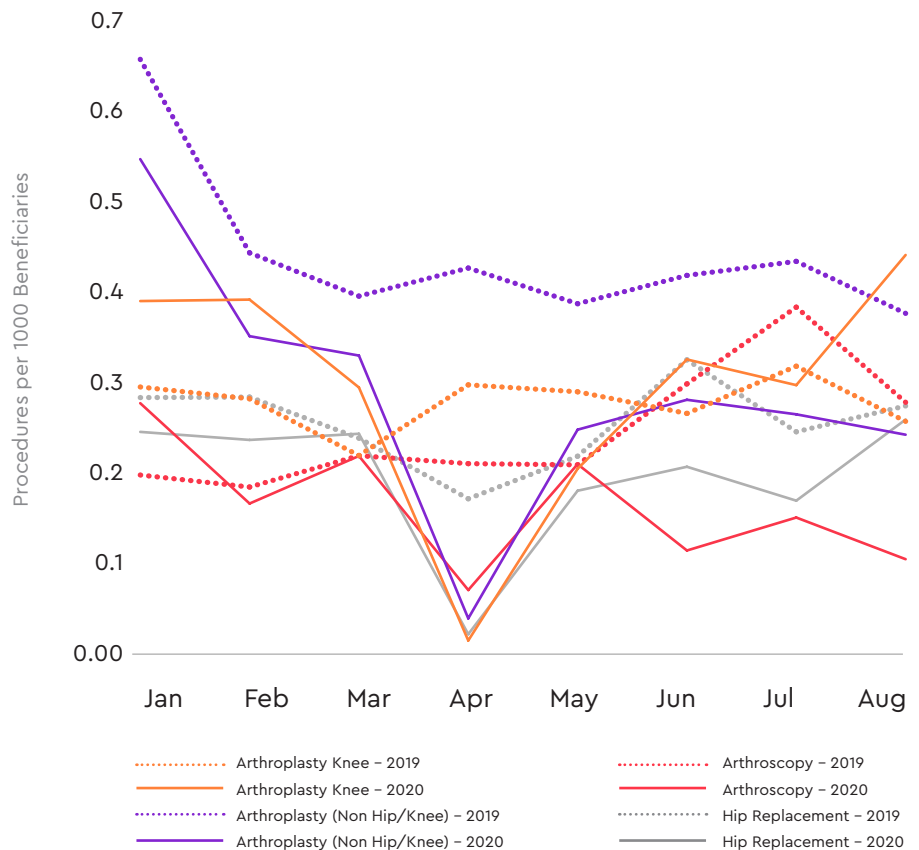
In addition, many patients adopted more sedentary lifestyles during the 2020 pandemic, which raises red flags for fractures in 2021, says Paulus. "When patients engage in fewer weight-bearing activities and less movement, that increases their risk of falling."

Troubling Implications

Patients ages 65 or older with a hip fracture have a 3-fold higher risk of mortality.

Source: BMC Musculoskeletal Disorders

ORTHOPEDIC PROCEDURES





## The Way Forward

### Critical Takeaway

#### Effective technology can help:

- Identify at-risk members
- Personalize engagement
- Recommend the next best action

## How payers and providers can mitigate these challenges

Payers and providers recognize that COVID-19-related utilization declines will create new healthcare problems for many patients in 2021, but many aren't utilizing technology that can help them identify patients most at risk due to deferred care. That prevents them from making earlier interventions that can reduce overall risk.

Kristin Torres Mowat, a healthcare technology and services advisor and investor, says payers and providers must move more quickly to embrace a proactive, personalized approach to patient care and engagement. "They need tools to segment their patient populations at greater risk and find the best way to engage them," she says. "Those who can gain patient trust and improve outcomes by reaching out in ways that show they care will be much more successful in the long term."

Ryan Panchadsaram, Technical Advisor to the Chairman at Kleiner Perkins, and former U.S. Deputy Chief Technology Officer, agrees, noting that long-term success for payers and providers will come down to whether they can find technology that helps them identify patients at risk and successfully intervene with preventive measures. "Our healthcare system is stretched thin, technology can help identify the places where there are gaps, inequities, and where there's the greatest need," he says.

The good news for payers and providers is that healthcare AI and predictive analytics technologies have made significant gains in recent years, says Dr. Nigam Shah, MBBS, PHD, Professor of Medicine and Biomedical Data Science at Stanford University, and Cofounder of Prealize Health.

**"Those who can gain patient trust and improve outcomes by reaching out in ways that show they care will be much more successful in the long term."**

– Kristin Torres Mowat

"I see two synergistic developments that are extremely exciting," he says. "Data liquidity is increasingly making complete longitudinal patient records available for analysis, and methodological advances are enabling us to go beyond black-box predictions to include explanations as well as attribution for each prediction. These developments will dramatically increase the usefulness of predictive analytics."

The key for payers and providers, says Shah, is finding an analytics solution that drills down to the individual member level and provides information regarding the next best action. "A prediction that does not change actions is useless," he says. "Payers and providers that become more proactive will replace those that remain reactive. As a result, there will be more preventive care and less use of unnecessary, expensive procedures."

## Expert Insight: COVID-19 Vaccine Predictions

### Vaccine Adoption

Jason Bae, MD, Prealize Health's Medical Director, believes that most Americans will choose to get the COVID-19 vaccine. "While there may be some initial hesitancy, ultimate vaccine acceptance will likely be high," says Bae. "As millions get vaccinated in the U.S, U.K., and other countries, the vaccine safety and efficacy demonstrated in clinical trials will be affirmed. Willingness of public figures, such as former presidents and celebrities, to get vaccinated publicly, will further build the public's confidence."



— Jason Bae, MD,  
Medical Director  
for Prealize Health

### Vaccine Distribution

The CDC is focused on distributing the COVID-19 vaccine to critical populations first. These populations include healthcare personnel and essential workers, those at increased risk for severe illness, those at higher risk of acquiring or transmitting the virus, and those with limited access to routine vaccination services. "Predictive analytics models can play a key role in ensuring rapid and targeted vaccine deployment," says Linda Hand, CEO of Prealize Health. "The best technology will help payers and providers identify which patients, even within these broad categories, should receive the vaccine first, determine which of those patients will need more targeted and additional outreach, and understand how to engage them most effectively to drive utilization."



— Linda Hand,  
CEO, Prealize Health

## 2021 Trends to Watch

### More Efficient Approaches

"The pandemic has pushed our health system beyond the edge. We've been forced to figure out how to deliver care at home, how to digitize, and how to streamline healthcare delivery processes. We re-thought everything, and we're not going to go backwards."



— Ryan Panchadsaram, Technical Advisor to the Chairman, Kleiner Perkins, and former U.S. Deputy Chief Technology Officer

### Shifting Membership Risks

"As unemployment rises and people move between employer-provided coverage to government-supported options, a lot of deferred care will end up on the books of a different payer. Payers must gain insight into the population risk on their hands."



— Dr. Nigam Shah, MBBS, PHD, Professor of Medicine and Biomedical Data Science at Stanford University and Cofounder of Prealize Health

### Prioritization of Care

"A surge in demand in the second half of 2021 among patients seeking to address pandemic-related deferred care will stress all health systems, just as many are recovering from COVID-19 utilization. Many providers, especially primary care physicians, may be forced to prioritize their appointment hours for patients who are at greatest risk of morbidity from further delays in care."



— Gordon Norman, MD, Chief Medical Officer for Prealize Health

### Virtual Health

"The pandemic has given people a vision of what's possible if we unleash the full capacity of virtual care. Old style, in-person healthcare is never going away, but we've also had a taste of what's possible with telemedicine. The task now will be to match the right channel to the right patient for the right condition."



— Mark Smith, MD, Professor of Clinical Medicine at the University of California at San Francisco and Former President and CEO of the California HealthCare Foundation

### Targeted Engagement

"We'll start seeing more payers and providers meeting people where they are and proactively engaging them in the way they prefer. There will be some movement, but it's going to be a slow process over the next three to five years."



— Kristin Torres Mowat, Healthcare technology and services advisor and investor

### Increased Emphasis on Behavioral Health

"Behavioral health has been a focus for Premera in 2020 and will continue to be throughout 2021. It is critical, now more than ever, that we remove any barriers our members might face in seeking help for behavioral health issues, including substance and alcohol use disorders."



— Rick Abbott, Vice President of Product and Market Solutions, Premera Blue Cross

### Social Determinants of Health (SDOH)

"SDOH are major drivers of health status, health outcomes, and cost, as well as healthcare inequities. Fortunately, some payers are beginning to address SDOH by, for example, ensuring members have electricity that enables them to refrigerate their insulin. I anticipate slow movement but absolutely hope for ongoing improvement."



— Ronald A. Paulus, MD, President and CEO, RAPMD Strategic Advisors



## **About Prealize**

Prealize Health is a predictive analytics company that helps payers and providers improve health outcomes, improve healthcare experience, reduce avoidable cost and generate more revenue. Prealize uses machine learning to transform healthcare from reactive to proactive, so that more people can live healthier lives.

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Learn more about how Prealize's AI-powered solutions can help transform your business.

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