



COVID-19 Impact:

10 Healthcare and Life Sciences Innovations



Introduction

Pandemic accelerates digital transformation

10 digital transformation innovations:

- Global disease management
- Data-driven emergency response
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- Transition to virtual care
- Clinical trials powered by data
- Overcoming social inequities
- Financial impact and patient mix
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- Effective contact tracing
- Modern vaccine management

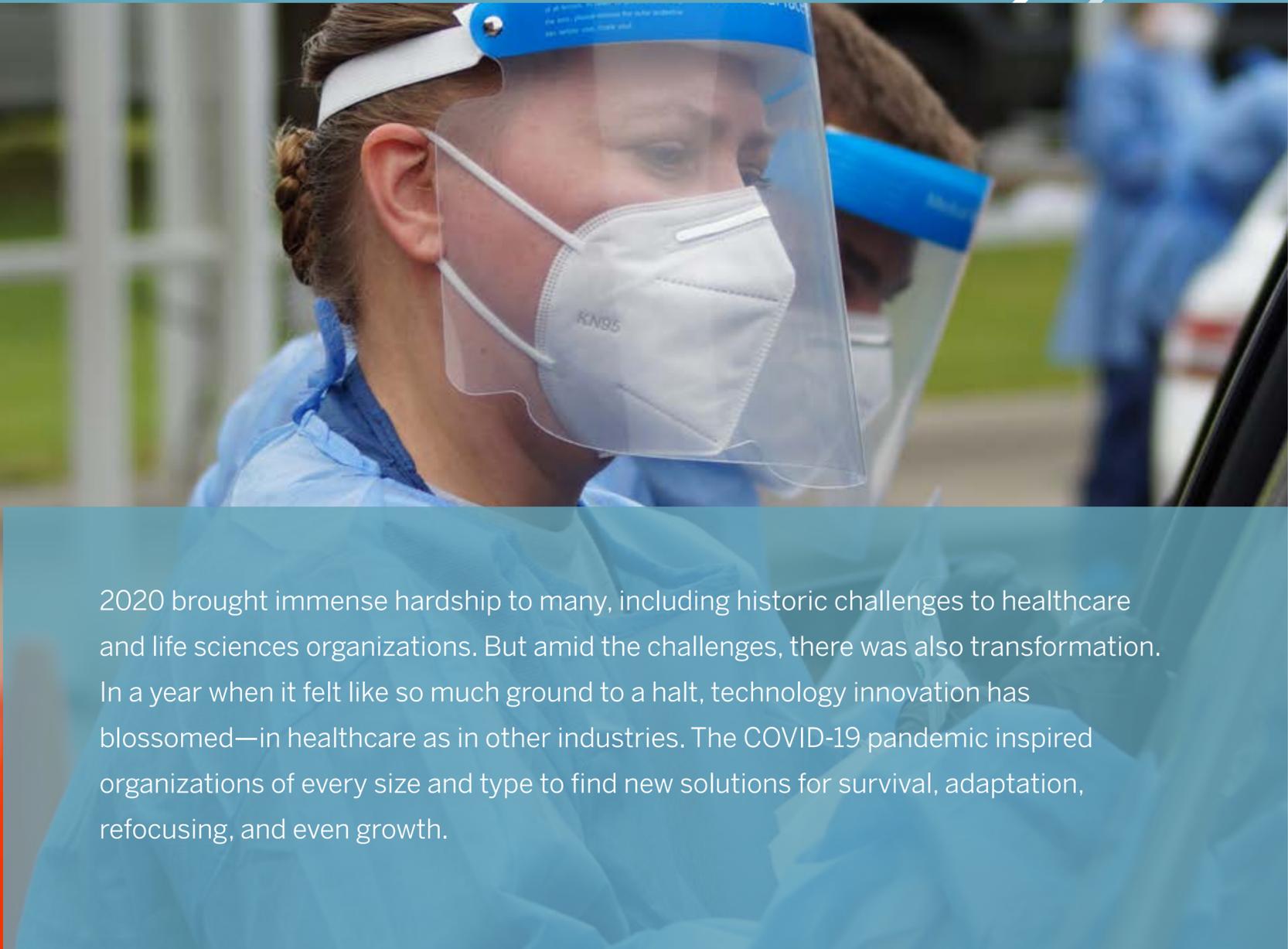
Conclusion

Visualizing the future of healthcare



Introduction

Pandemic accelerates digital transformation



2020 brought immense hardship to many, including historic challenges to healthcare and life sciences organizations. But amid the challenges, there was also transformation. In a year when it felt like so much ground to a halt, technology innovation has blossomed—in healthcare as in other industries. The COVID-19 pandemic inspired organizations of every size and type to find new solutions for survival, adaptation, refocusing, and even growth.



70%

Roughly 70% of CEOs report accelerating their company's digital transformation by months or years during the pandemic.

Source: **KPMG**

Through 2021 and beyond, the transformation will continue. In healthcare and life sciences, organizations already on the path to digitally evolving their operations have found ways to expedite their journeys. Doing so not only helps sustain their viability during shutdowns, but also enables life-saving solutions for the many patients requiring additional care. From disease management and emergency response to telemedicine and clinical trials, teams in every health industry function have embraced this pivotal moment by shifting to a data-driven mindset.

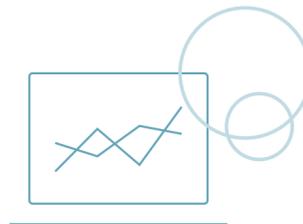
Introduction

Pandemic accelerates digital transformation

The result: healthcare and life sciences organizations are achieving new levels of collaboration, agility, and resilience by adopting technology solutions that help them see and understand their data. Hospitals, clinics, researchers, and manufacturers have discovered new ways to adjust their business using data-driven strategies and many are adopting a new understanding of how data analytics and technologies can help them improve patient care and service to their subscribers, with better outcomes.

85%

of health executives acknowledge that technology has become an inextricable part of the human experience.



70%

of consumers globally expect that their relationship with technology will be more prominent or significantly more in their lives over the next 3 years.

Read on to see how healthcare companies used data analytics and visualization in 2020 to adapt their operational models, make confident decisions, innovate new processes, recapture lost revenues, and save lives.

Source: **Accenture, July 2020**

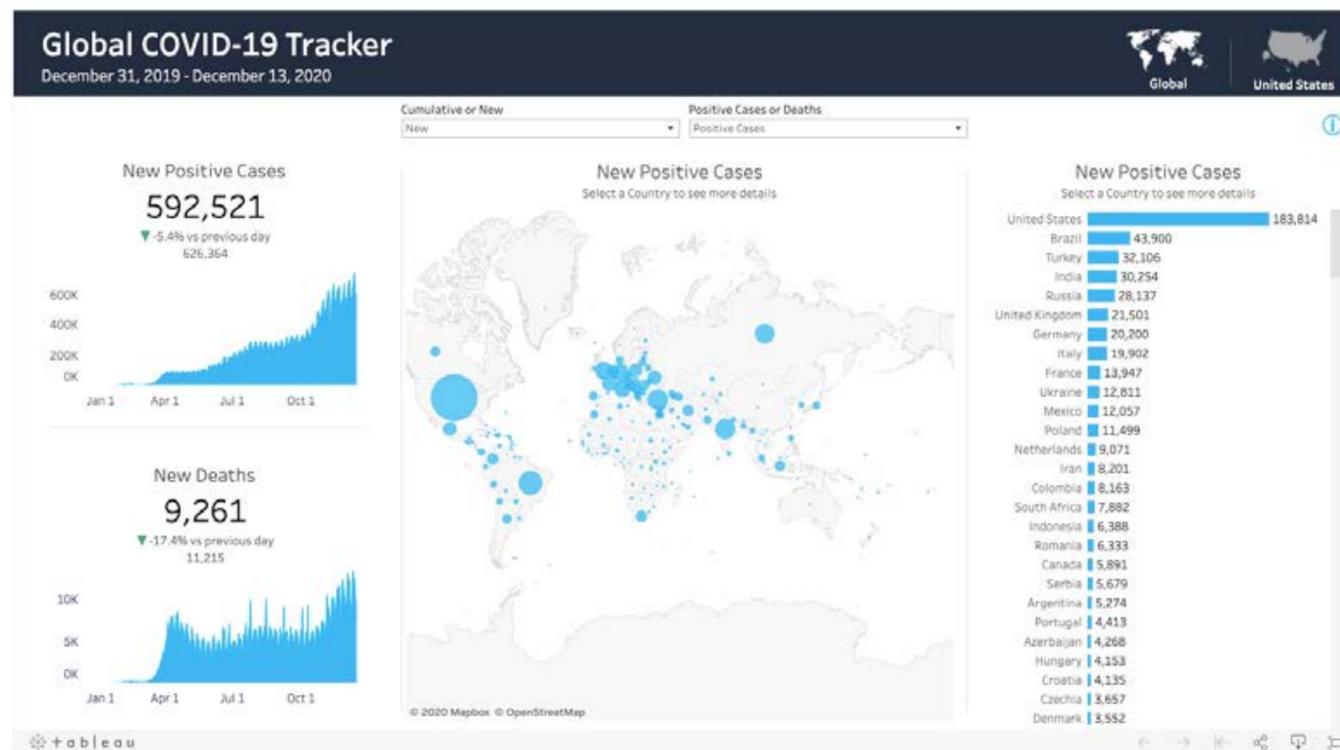


Healthcare and life sciences companies are harnessing the power of data during the pandemic to save lives, adapt operational models, make confident decisions, innovate new processes, and recapture lost revenue. From disease management to clinical trials, this ebook highlights some of the most notable data-centric healthcare and life sciences solutions and trends that we've seen in 2020, resulting from the coronavirus pandemic.

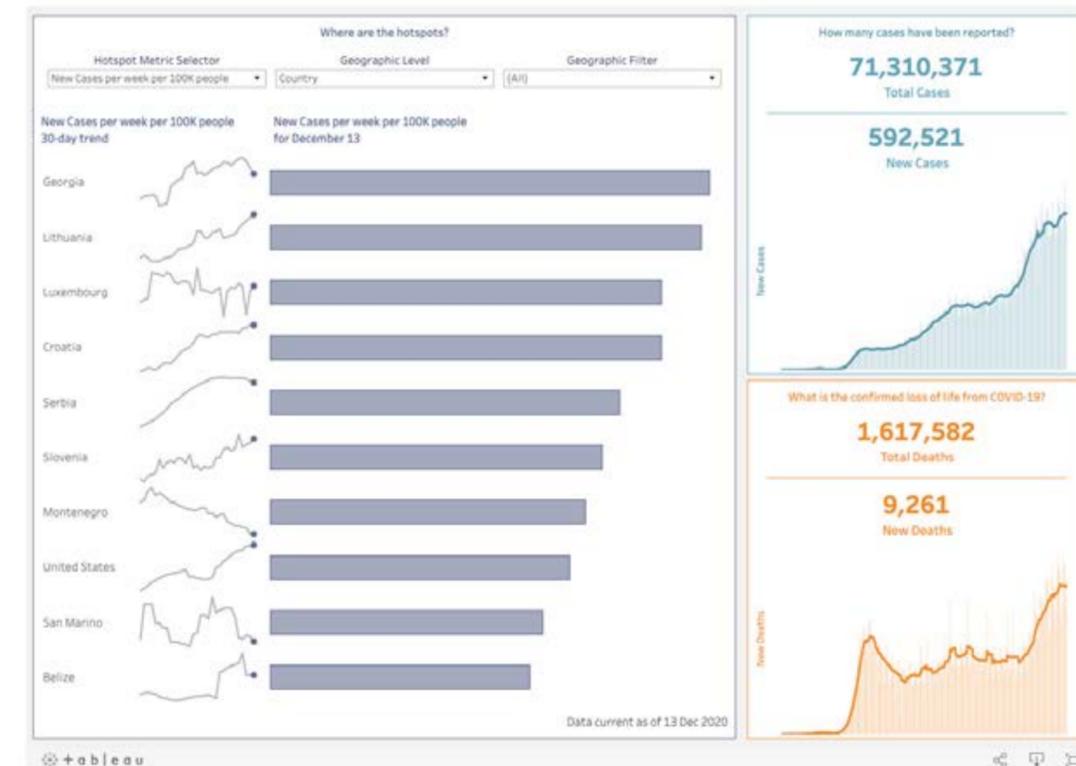
Global disease management

Digital transformation innovations

Recent reports from [KPMG](#) and others confirm that with a renewed push for digital transformation during the pandemic, companies are putting data at the center of their COVID-19 response. Many health systems, payers, and life scientists use the [Tableau COVID-19 Data Hub](#) to stay informed with up-to-date information, perform their own analyses using starter kits and prepared data, and learn how other businesses, industries, and communities are responding to the crisis.



Covid-19 Data Tracker centralizes new cases and mortality data into a heat map display, showing relative surges and enabling users to click into any geography for more details.



Covid-19 Data Hub includes dynamic resources for global disease management that health systems and others can use in their own dashboards to track both high-level and detailed pandemic data.

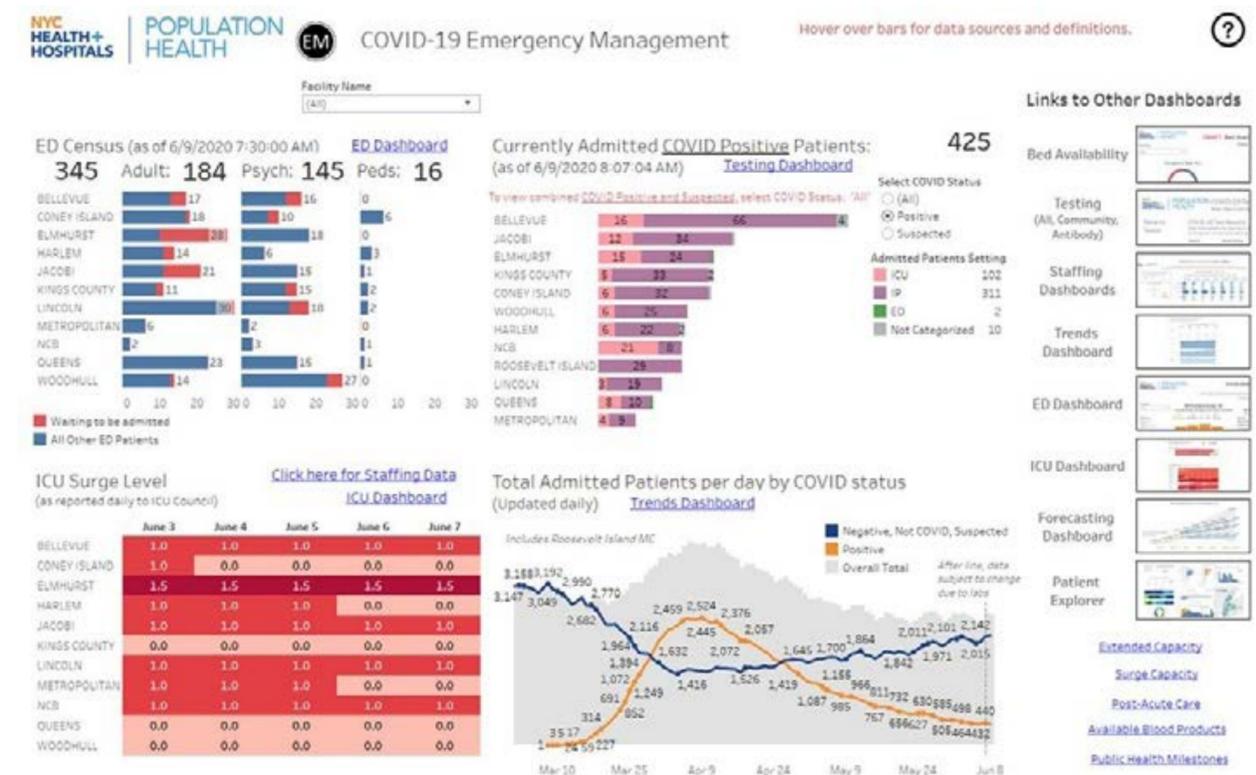
Data-driven emergency response

Digital transformation innovations

A fast-moving virus requires an agile response. Early in the crisis, New York City Health + Hospitals (NYC H+H) built an ad hoc leadership team to make data-driven decisions to help save lives throughout the city's deadly surges in cases. With access to public and private data sets, NYC H+H used Tableau to create a series of dashboards and visualizations that provides leaders the information they need to make critical decisions quickly. "We think of it as 'epidemic intelligence'," says Jenny Smolen, Tableau manager at the NYC H+H Office of Population Health.



NYC H+H emergency staff members in the hospital's COVID-19 command center. Background monitors display the team's Emergency Management dashboard, built using Tableau. Source: New York Times

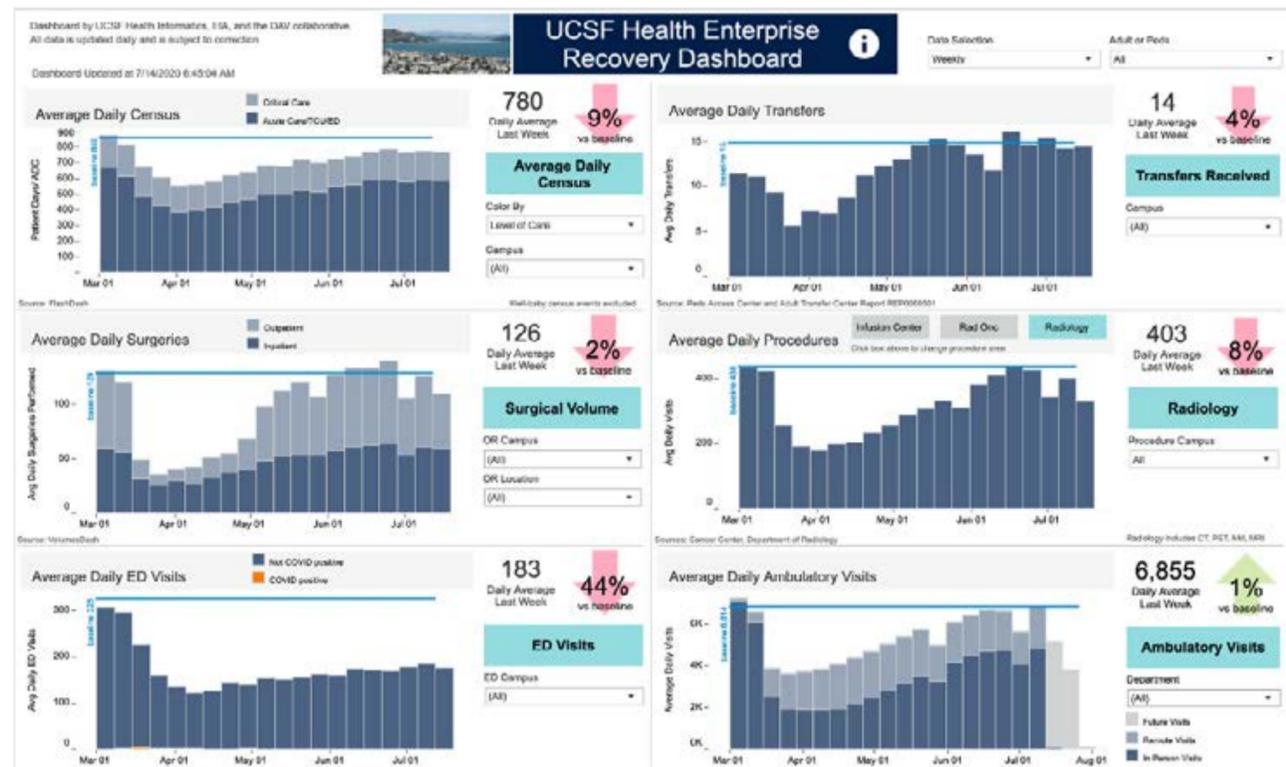


The NYC H+H dashboard displays live, interactive graphs and tables of pandemic response information, including COVID-19 admitted daily census numbers and ICU surge levels. [Read the case study](#)

Accelerate elective care

Digital transformation innovations

Amid intermittent restrictions on elective procedures throughout the pandemic, hospitals and clinics have lost significant revenues. As health systems begin reopening and scheduling patients again, the ability to prioritize procedures and integrate data-driven tools into their clinical workflows is critically important—both to clinicians and managers analyzing the bottom line.



\$ **202.6** billion
over 4-months

American hospitals and health systems saw an estimated \$202.6 billion in losses over a 4-month period in 2020.

\$ **50.7** billion
per month

or an average of \$50.7 billion in losses per month.

The Tableau dashboard built by University of California San Francisco Health gives all personnel a central place to look for critical metrics, informing decisions that help coordinate care and manage profitability. [Watch the video](#)

Source: [American Hospital Association](#)

Transition to virtual care

Digital transformation innovations

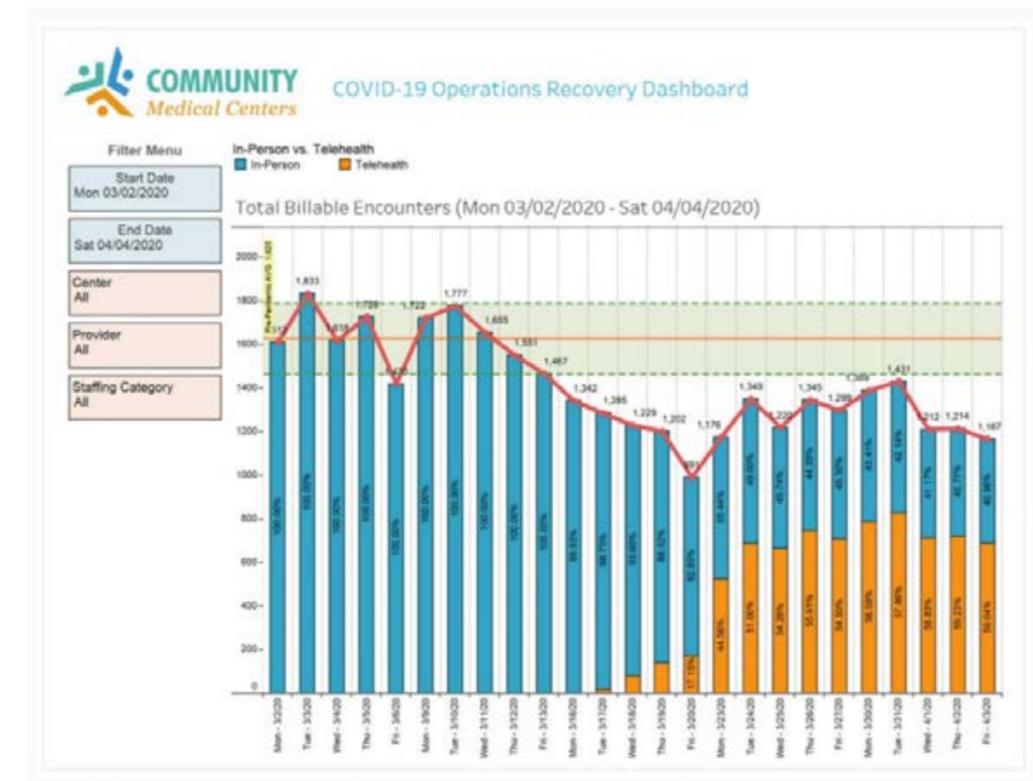
Many health systems just starting their digital transformation in 2020 found themselves needing to go all in with virtual care in a hurry. The organizations best positioned for success at scale were those that had adopted visual analytics.

Today, operational dashboards help them plan and manage their telehealth businesses effectively, recapture revenues, and set new expectations for care with clinicians and patients alike. And the trend won't slow down once the pandemic is over—[Frost & Sullivan](#) predicts a 38.2% annual growth rate in telehealth between 2020 and 2025, representing a sevenfold expansion.



The dramatic increase in telehealth that started in early March of 2020 is a level of ramp-up we've never seen before, for any service. After we built a dashboard in Tableau showing the impact of telehealth on our revenue cycle, we could realize a significant amount of telehealth billing that we didn't see before the pandemic.”

— Chris Paolini, Health Systems BI Analyst at UNC Health [Read the case study](#)



Community Medical Centers, a network of community health providers in northern California, is was one of many Tableau customers that tracked telehealth operations using visual analytics while providing virtual care for virus-related and non-virus cases. [Read the case study](#)

Clinical trials powered by data

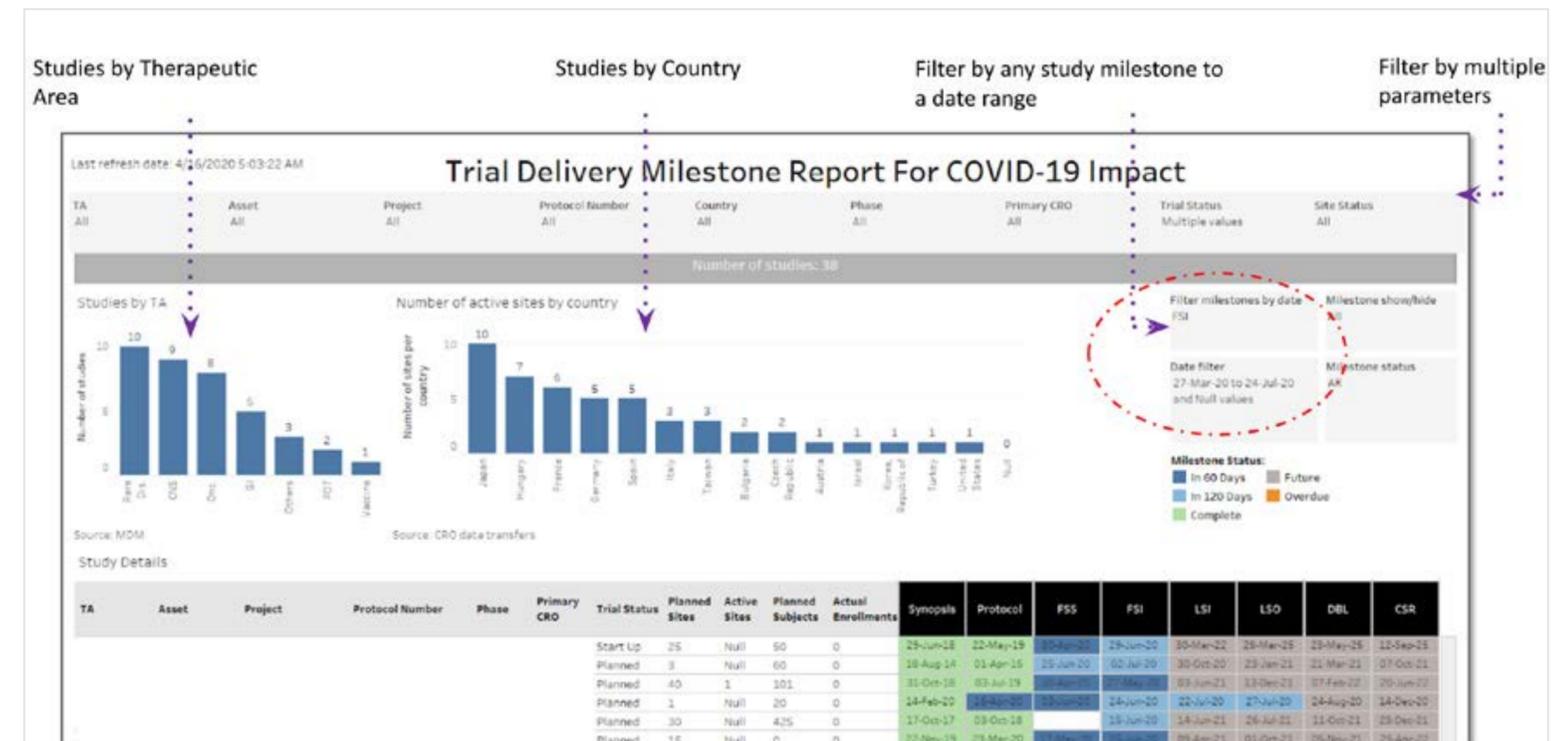
Digital transformation innovations

The race to produce a vaccine began as soon as the novel coronavirus was discovered. The time and financial pressure typically felt by life sciences companies to develop a drug were massively intensified by the rapid acceleration and lethality of the pandemic. Conducting effective clinical trials was a critical step, and the closure of research and clinical sites made it challenging to coordinate new and existing studies. With help from platforms like Tableau, pharmaceutical companies can focus on patient recruitment and retention strategies that keep them ahead of the curve.

80%

80% of US clinical trials fail to meet patient enrollment deadlines.

Source: [Outsourcing-Pharma](#)



Takeda developed its COVID-19 Trial Delivery Milestone dashboard to help prioritize studies and track them at critical points in time, as well as get study progress data, filtered by country, date range, therapy area, and other criteria.

[Watch the webinar](#)

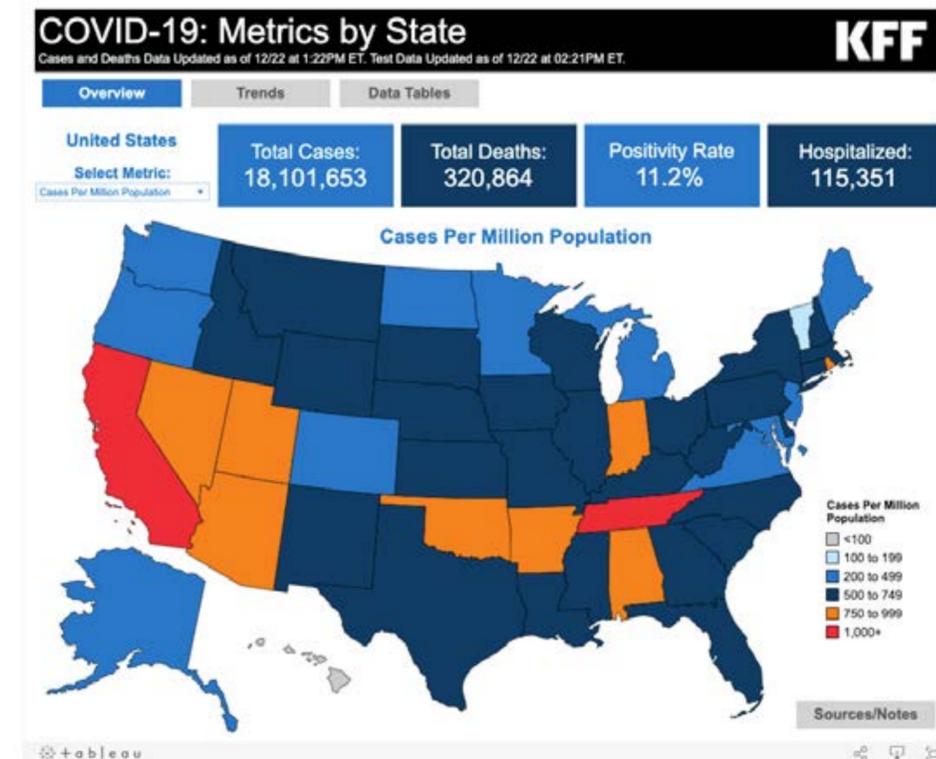
Overcoming social inequities

Digital transformation innovations

Continuity of care for health systems includes understanding the impacts of COVID-19 on minority and underserved communities, and developing strategies to overcome inequities. As [Harvard researchers](#) have emphasized, “ramp-up strategies that do not prioritize equitable access may inadvertently favor patients with socioeconomic privilege, reinforcing existing disparities in access and quality.” Analyzing data from sources like the [Kaiser Family Foundation](#) helps health systems and public health organizations plan for care access, health education, and targeted outreach in new ways that address social inequity.



The [State of California COVID-19 case tracker](#) uses a Tableau visualization that reports demographic case load and mortality data in comparison to each group's population percentage, guiding public health policy decisions that target hard-hit communities.



A popular dashboard on Tableau Public uses dynamic data from the [Kaiser Family Foundation](#) to provide current metrics by US state that healthcare organizations can use in their own visualizations.

Financial impact and patient mix

Digital transformation innovations

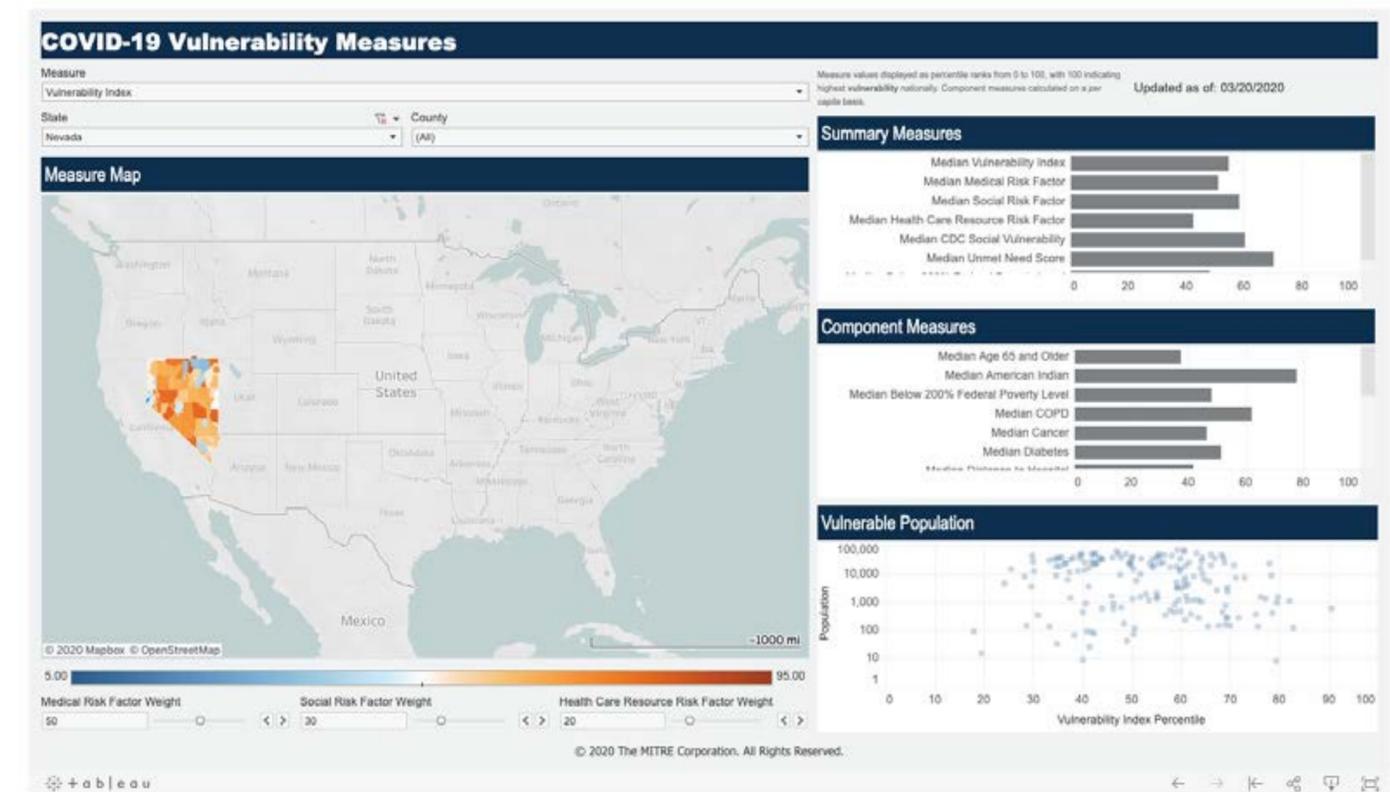
Since the pandemic began, millions of workers have lost their jobs and their employer-sponsored health insurance benefits. Many of these same workers now qualify for public assistance programs like Medicaid. With these sudden changes, payer organizations are scrambling to account for the shift in risk. What types of patients are now uninsured? What are their care needs and vulnerability risks? How has their access to care changed, and how are their health outcomes likely to differ? Using visual analytics, payers can see and understand vital population health issues and plan for patients' needs.

\$ **7.7** million
by June

By June 2020, the pandemic-induced recession led to 7.7 million workers losing jobs with employer-sponsored insurance

\$ **14.6** million
workers and dependents

affecting 14.6 million workers and dependents.



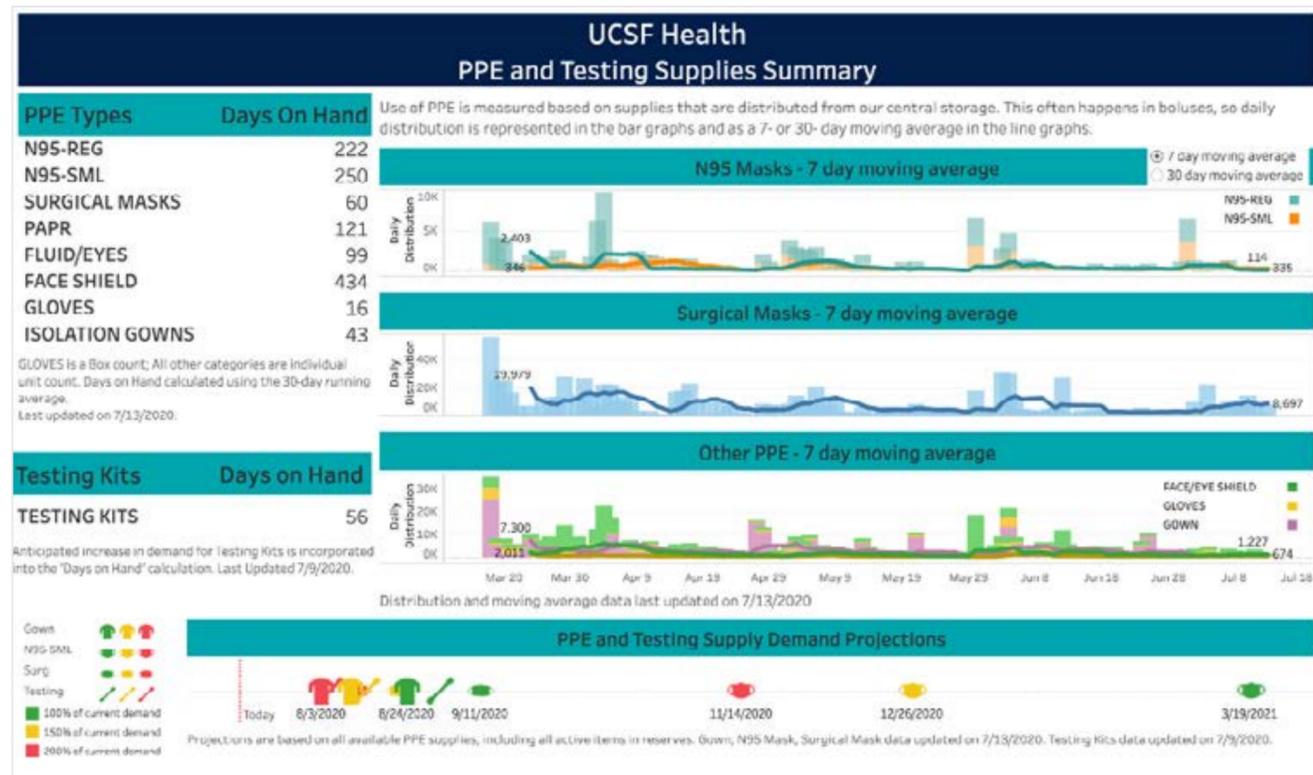
Source: [The Commonwealth Fund](#)

This visualization and others from the [Tableau COVID-19 Healthcare Coalition](#) display geographic heat maps showing the range of vulnerability to economic impacts, with the ability to drill down into details for each region.

Global supply chain management

Digital transformation innovations

Disruptions in manufacturing, logistics, training, and other supply chain challenges have affected the availability of goods and services for consumers and businesses alike throughout the pandemic. Hospitals and clinics use visual analytics to better manage and predict their inventory of medical devices, surgical equipment, testing supplies, and PPE to help minimize bottlenecks and save more lives. Likewise, life science companies can visually analyze critical supplier and inventory data to help identify and mitigate vaccine and supply chain vulnerabilities.



“Tableau is being used by the New York City Mayor’s Office and agency partners to track and manage the crucial components of the city’s pandemic response operations, including the capacity of health systems and the distribution of PPE supplies. Tableau’s dynamic dashboards are powerful for analyzing, distilling, and visualizing data so that leadership can make informed and timely decisions. The city is grateful for the expert support Tableau has provided along the way.”

This Tableau dashboard at University of San Francisco Health tracks PPE inventory status and usage trends so its hospitals can predict and ward off any shortages in supply. [Watch the video](#)

— Daniel Steinberg, Deputy Director of the NYC Mayor’s Office of Emergency Management

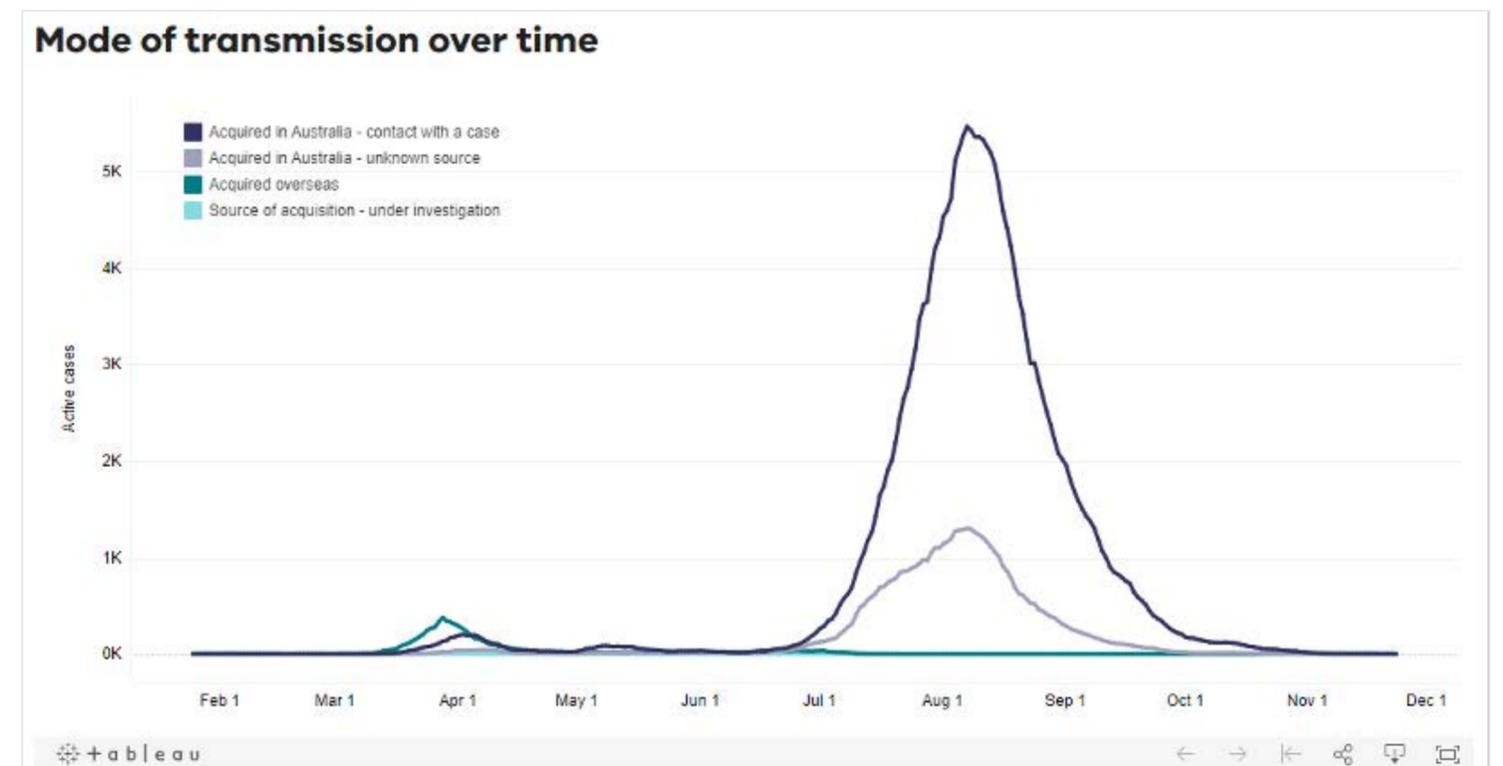
Effective contact tracing

Digital transformation innovations

Effective contact tracing for health systems starts with tracking the movements and status of each patient from the moment they arrive at a hospital or clinic. Using mobility and location data from patients' smart phones, it's possible to determine the likely sources of transmission. Along with clinical data, triage personnel can make informed decisions about the patient's care, including isolating them or taking other measures to prevent further exposure. The more efficient a health system is at gathering and visualizing this information up front, the better they are positioned to achieve favorable health outcomes and contain further spread of the disease.



Royal Perth Hospital in Western Australia uses Tableau visual analytics to rigorously track every COVID-19 patient, starting with ambulance pickup and continuing through discharge. Read about [The Data Mindset](#) for more examples of how healthcare and life sciences organizations are leveraging data to drive change.



The **Department of Health and Human Services in Victoria, Australia** built a variety of visualizations in Tableau to help with contact tracing, including this one that tracks the different locations where patients were infected with SARS-CoV-2.

Modern vaccine management

Digital transformation innovations

A series of breakthroughs in the last months of 2020 made the world hopeful that approved COVID-19 vaccines were on the near horizon. As these new drugs become available, governments and healthcare organizations need powerful analytics and technology platforms to ensure efficient management across the vaccine supply chain, including inventory and distribution management, population prioritization, transportation and logistics, and monitoring. Most countries, regions, and US states currently lack the large-scale operational capabilities that a successful COVID-19 vaccination and immunization strategy will require.



As part of its partnership across 43 US states and additional public sector agencies worldwide, Tableau developed this **dashboard prototype** for helping states, countries, regions, and local governments manage performance for key vaccine-related indicators.

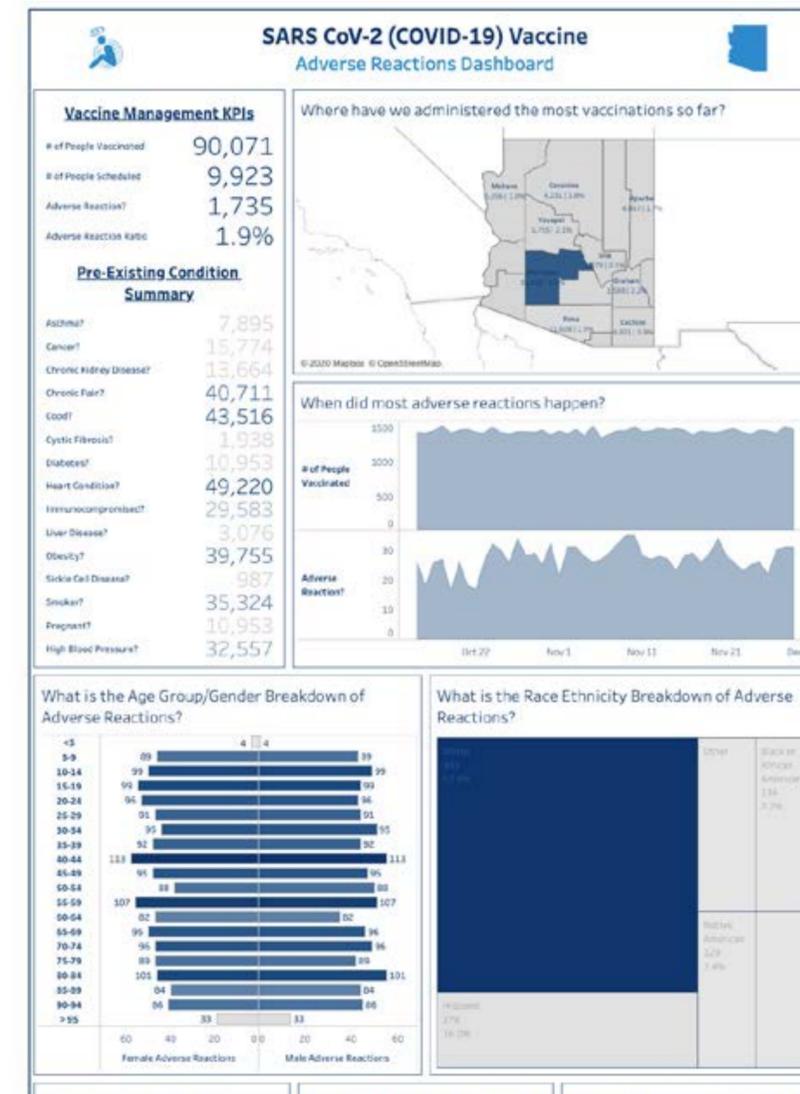
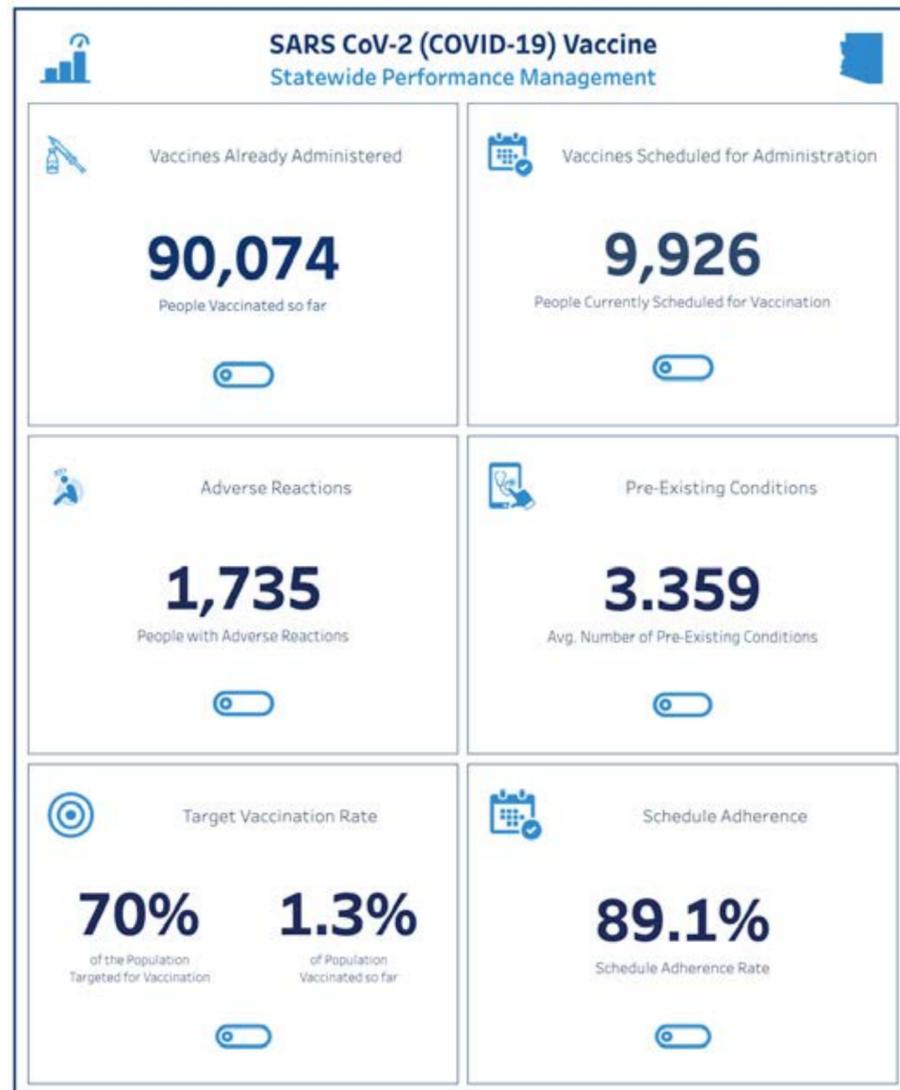
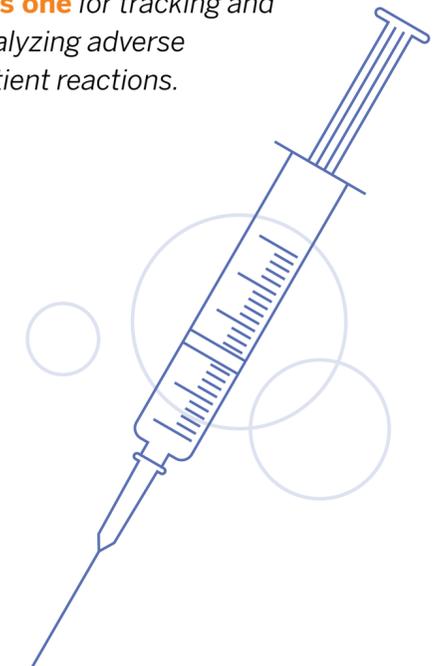


Tableau also developed detailed dashboard prototypes for managing a variety of downstream logistics in the vaccine distribution and administration processes, such as **this one** for tracking and analyzing adverse patient reactions.



Conclusion

Visualizing the future of healthcare

With COVID-19, digital transformation has shifted into high gear. Hospitals, clinics, payers, and labs are increasing their use of technology to gain more precise insights into their states of operation, with data as the foundation for evolving their business. And the easier it is to gain key insights using visual analytics, the better their chances of improving patient care outcomes and becoming more resilient for the future.

The rapid evolution of healthcare makes it clear that the future depends on data, and the rich insights made possible with visual analytics. Championing Data Culture across every level of an organization, and adopting a data-first mindset is the first step. Every day, around the world, companies and agencies across the healthcare and life sciences spectrum use Tableau for the critical insights they need to make data-driven decisions that help save lives and maintain business viability— through the pandemic and beyond.

The virus presents new challenges and constraints on healthcare, but opportunities to innovate remain limitless. Together, all of us—technologists and practitioners, researchers and suppliers, executives and front-line workers—can continue to build on what we've learned, harnessing technology, deepening our digital capabilities, and using data analytics to influence better outcomes in an ever-changing world.

This content was written in December 2020, and the impacts covered here continue to evolve. We invite you to visit the [Tableau COVID-19 Data Hub](#) to stay up-to-date with current thought leadership on these topics.



About Tableau

Tableau helps healthcare and life science organizations become more data-driven. Our enterprise platform makes visual analytics intuitive and easy to use, empowering all leaders, business users, and clinicians to deliver optimal patient experiences and care outcomes.

Resources

[Healthcare Analytics Solutions Page](#)

[Life Sciences Analytics Solutions Page](#)

[Blog: Data Accelerates COVID-19 Insights and Action](#)

[Explore The Data Mindset](#)

[Learn More about Tableau](#)

