



How Government Agencies Can Use Data to Manage Through a Crisis



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Introduction

Emergency preparation and response is a core function of government. From natural and man-made disasters to events such as public health outbreaks, government agencies at the federal, state, and local levels need internal and external data to understand the impacts, evaluate decisions, and to ultimately respond and recover. Organizations also need the capability to share relevant data with internal stakeholders, across agencies, and with the general public.

The pandemic has amplified the need for powerful data analytics. While some agencies had experience with natural disasters and even public health crises such as Ebola and H1N1, few could envision the information storm that struck with the COVID-19 pandemic. With such a vast amount of data and such a quickly evolving situation, agencies struggled to get a clear, consistent picture of what was happening, even within their own organizations.

Managing, analyzing, and sharing volumes of quickly-changing data in the middle of a crisis seemed impossible. But advanced analytics and data visualization models used by agencies across the country served as a critical aid to help communities stabilize and re-open.

This crisis has made it clear: without the right data at the right time, it's difficult to understand what's really happening, and make confident decisions. In a crisis, ad hoc decisionmaking isn't sustainable, or recommended. Government entities have learned that being data-driven is at the heart of being mission-driven.

Chapter 1

Stabilization: The need for an agile response

As the pandemic crisis continues to evolve, public officials are grappling with understanding and mitigating its impact. In order for communities to stabilize and begin the road to a new normal, governments and citizens need deep insights, and coordination and collaboration across jurisdictions to create an effective response that addresses critical public safety concerns.

At the state and local level, agencies need answers to wide-ranging questions: how quickly is the virus spreading? Where are the new hot spots? Are certain areas or populations at greater risk? Do medical facilities have enough PPE and capacity to handle current and projected needs? What information does the public need to stay safe? How can we trace spread in groups of people who have come into contact with the virus, and alert them?

Tableau's COVID-19 Data Hub

Early in the crisis, Tableau's data experts created the COVID-19 Global Data Tracker, to provide real-time updates on confirmed case and death tolls, the spread of the virus, and the most impacted places. Tableau also created a starter kit that organizations can download and customize by entering their own data into workbooks and spin up their own analyses.

The self-service dashboards can be used broadly to create visualizations to answer questions such as the local spread of the virus, areas most impacted, death totals, the availability of testing or hospital beds, or PPE supply inventories.

Using the starter kit, organizations can quickly pull in their own data sets, as well as publicly available data, and create visualizations that can be shared between team members, or the general public. Because the Tableau platform is self-service, it empowers users to explore and create unique visualizations on their own, reducing demands on IT teams to assist with data modeling.

At least 20 states and many local government organizations, including New York City, are using Tableau to provide important COVID-19 related data to more than 200 million US citizens in their regions. "Tableau's dynamic dashboards are powerful tools for analyzing, distilling, and visualizing data so that leadership can make informed and timely decisions," said Daniel Steinberg, deputy director, NYC Mayor's Office of Emergency Management.

At the federal level, agencies also need to understand the macro impacts of the virus on their own organizations—including staffing and operational factors—to continue to support their public missions. They also need to share and receive information with their partners in industry, academia, and at the state/local level to analyze the situation.

Sharing useful information

Government agencies using Tableau to improve their understanding of the pandemic learned how valuable dashboards are for conveying information quickly and concisely.

COVID-19 Government Transparency

Tableau is working with state and local governments around the world to provide health data transparency to citizens.

This visualization highlights some public-facing dashboards from US data sources.

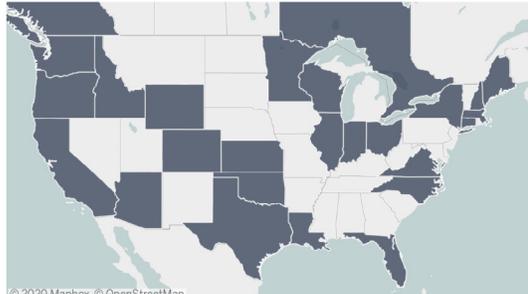
COVID-19 Government Transparency

Tableau Dashboards Across the Americas

INFORMATION

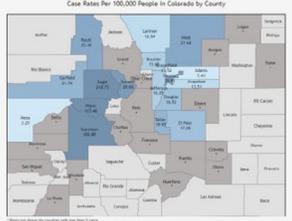
Click on a state/agency to view live dashboard

| | |
|-------------------------|--|
| Tableau Data Hub | <i>Tableau State and Local Government</i> |
| Arizona | <i>Department of Health</i> |
| Boston | <i>Mayor's Office</i> |
| California | <i>Department of Public Health</i> |
| California | <i>Health & Human Services</i> |
| Cherokee Nation | <i>Cherokee Nation</i> |
| Colorado | <i>Department of Public Health and Environment</i> |
| Connecticut | <i>CT Data Collaborative</i> |
| Florida | <i>Department of Economic Opportunity</i> |
| Idaho | <i>Department of Health and Welfare</i> |
| Idaho | <i>Department of Labor</i> |
| Illinois | <i>State Comptroller</i> |
| Kansas | <i>Johnson County</i> |
| Kansas | <i>Kansas Department of Health and Environme..</i> |
| Louisiana | <i>Department of Health</i> |
| Maine | <i>Maine Center for Disease Control and Preven..</i> |
| Massachusetts | |

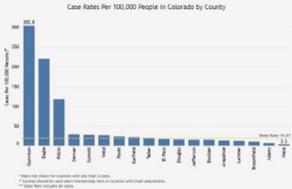


© 2020 Mapbox © OpenStreetMap

Case Rates Per 100,000 People in Colorado by County



Case Rates Per 100,000 People in Colorado by County



*Snapshots are not live

COVID-19 Data Hub
+ a b l e a u
Submit a Dashboard

“Dashboards can be designed to be shared internally across an organization or externally to provide key information to the public. The public facing dashboards are built securely to share the right levels of data and have the ability to scale to provide interactive information to broad audiences,” according to Tableau’s Senior Director of Solutions Engineering for State and Local, Dave Kopniske. “Both internal and external dashboards can be viewed on mobile devices to put right level of data in the hands of the people on the front lines of fighting this pandemic.”

Flattening the curve

One aspect of stabilization is “flattening of the curve,” which describes the leveling off of new COVID-19 cases, followed by declining cases. The concept can be hard to explain—until it is seen in a visualization.

“The flattening of the curve speaks to data visualization. You don’t even need to read anything to understand what you’re seeing,” said Srinivas Kosaraju, senior director of public sector solutions engineering at Tableau. With that image, he said, public officials can see at a glance if they are nearing the time when it may be safe to consider the next step in the process or if the infection rate remains too high.

Chapter 2

Recover with data-driven insight

Once government agencies are able to stabilize, the focus turns to recovery, and re-opening. Data visualizations can help government officials as they sift through many variables to determine how to mitigate public health risks and reopen safely. Data analytics can help public officials understand and communicate to constituents where the virus is moving, who is at highest risk, and how specific localities may be impacted by the policies of surrounding states.

FEMA gains insights with Tableau

FEMA leverages Tableau across the agency to help the people who are on the front lines of a crisis in the preparation, response, stabilization and recovery stages of a crisis. Specifically, they use analytics to focus on:

- **Delivering** preparedness grants, training, and pre-disaster mitigation
- **Coordinating** federal response & managing resources
- **Providing** long-term recovery and incorporating mitigation practices into recovery

Hear more about their story from [Tableau's 2020 Government Summit](#).

Launching a safe re-opening

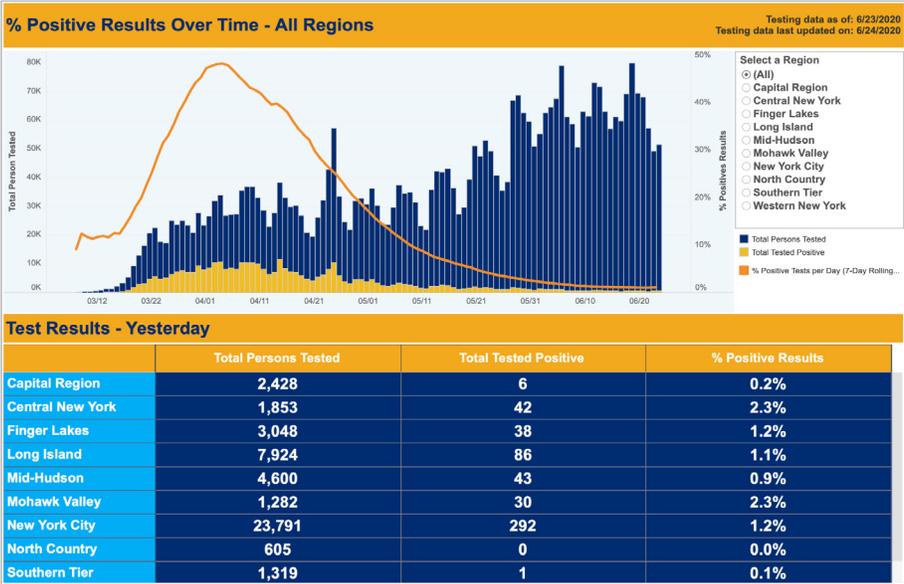
A robust data visualization platform can help government officials determine when and how to launch a safe re-opening. Organizations can also use data visualization platforms to get deeper insights for determining if they meet CDC guidelines for re-opening offices safely. For example, leaders can use visualizations to better understand the impact of re-opening, including:

- **How** many employees or constituents live in pandemic “hot spots?”
- **How** many employees are at high-risk for becoming sick in certain areas?
- **Where** is childcare most available?
- **Where** and when will schools reopen?
- **Where** and when is public transportation available?
- **What** are state-by-state or country-by-country travel restrictions?

Within these organizations, the human resources function can also benefit from data visualizations. As organizations plan for a safe re-opening, visualizations can show the trends for gauging staff readiness and workplace preparedness. Salesforce and Tableau have created an online [Workplace Command Center](#) to help organizations through the transition. Organizations can use data visualizations to make decisions on how to keep employees safe and for keeping operations running as efficiently as possible. HR managers can see at-a-glance trends of positive cases in their area, and the availability of testing. They can manage employee wellness and attendance data, shift scheduling, and create models for assistance in things like childcare or transportation. They also can visualize how to maintain social distancing in the office and track employee exposure to the virus.

New York State dashboard provides comprehensive view into COVID-19 impacts

As coronavirus continues to spread, some states are deploying dashboards to convey critical data to the public, and to internal stakeholders. [See the dashboard.](#)



A closer look at contact tracing

Data visualization dashboards are especially important as states and localities set up contact tracing to better understand the spread of the virus and inform those who might become infected.

These visualizations show important insights about geographic hot spots of gatherings and dates, as well as the numbers of people who have tested positive. Besides tracking the virus, the dashboards also can include operational metrics, such as call center staffing and the numbers of successful calls each day.

Like other pandemic mitigation strategies, contact tracing can be scaled up or down, according to how many people are impacted, assuming that public officials have access to analyses that provide actionable insights.

Tracking stimulus funding

In addition to analyzing metrics related to reopening, public officials will want to track COVID-19 stimulus funding. With data visualization, they can see the distribution and uses of federal grants, such as the \$2 trillion distributed through the CARES Act and more than \$512 billion in loans through the Paycheck Protection Program (PPP), which is administered through the Small Business Administration (SBA). Data visualization helps SBA and others can see how money is being spent, in the same way data visualization is used to track integrity in federal grant programs as well as gain insights into how best to allocate the funds and to protect against fraud, waste, and abuse.

Chapter 3

Growing into the next normal

Even now as government agencies move through the COVID-19 crisis, they must leverage data to understand the past, inform the present, and prepare for the future. Some may take it as an opportunity to make positive changes in their organizations.

“As we move into this new digital normal, there is an opportunity to think differently,” Kosaraju said. “Organizations are saying let’s not build our recovery on what existed before, but let’s reimagine.”

To be successful, agencies will have to plan for the next normal. As government agencies look ahead, they need options for how to staff departments to meet citizen needs. Data visualizations can allow managers to see at a glance where employees are located and if operations can continue with a specific amount of staff absences, as well as where problems exist in supply chains. Visualizations can also be created to track emerging trends and predict future scenarios, which allows team members to plan with more confidence and accuracy.

The importance of data culture

While it’s too soon to know exactly what the challenges of the next normal will include, the current crisis has shown us that a comprehensive data strategy, supported by a flexible and scalable data analytics platform, is essential for the kinds of insights and understanding needed for crisis management.

The COVID-19 pandemic has inadvertently propelled government agencies farther along in their digital transformations and has shown the importance of operating within a data culture. This includes data transparency, data-driven decision-making, and self-service analytics. The awareness of the need for data-centric operations compliments, and has fast-tracked, government’s ongoing digital transformation plans.

“In every digital transformation, people discover it’s a data transformation,” Kosaraju said. “Government agencies have been forced to change, and now they know what’s possible.”

Conclusion

COVID-19 has shown public sector organizations how important it is to embrace a culture of data analytics, and foster teams that are empowered to use data for exploration and understanding.

Organizations using a platform like Tableau have the ability to create analyses, dashboards, and visualizations to get critical information. For agencies, the true power of visual analytics lies in the speed with which complex information is transformed into actionable insights. With enhanced time-to-insight, agencies—and the public—are able to see and understand what is happening around them and make informed decisions during every stage of a crisis. With a data-first mindset, and a commitment to building a data culture, agencies can manage crises with more clarity and speed, knowing that their teams are fully leveraging the power of data-driven decision-making.

About Tableau

Tableau helps government organizations see and understand their data by enabling self-service analytics, allowing collaboration, and swift insight-to-action. [Try Tableau](#) for free today.

Additional resources

[COVID-19 Data Resource Forum](#)

[Tableau + Government Analytics](#)

[COVID-19 Government Viz Gallery](#)

[COVID-19 Data Hub – Government Track](#)

[Leading Through Change in Government Webinar Series](#)

[Public Facing Dashboards](#)

