DLAN

Pandemic Preparedness & Response

BCG
Buffalo Computer Graphics

911
Emergency

Introduction

The COVID-19 pandemic highlighted some of the shortcomings in current emergency management tools and processes. Specifically, it showed the need for modernizing the tools used to gather, process, and report on real-time situational awareness data. The speed at which the situation changed was overwhelming and new data needed to be processed quickly to save lives and keep healthcare systems operational. That is why it was crucial to not just have the best most up-to-date information, but to display it in a way that could be quickly digested and acted upon. In addition to accessing the right data, responders needed to be able to track information for both managing tasks and for after-action-reporting.
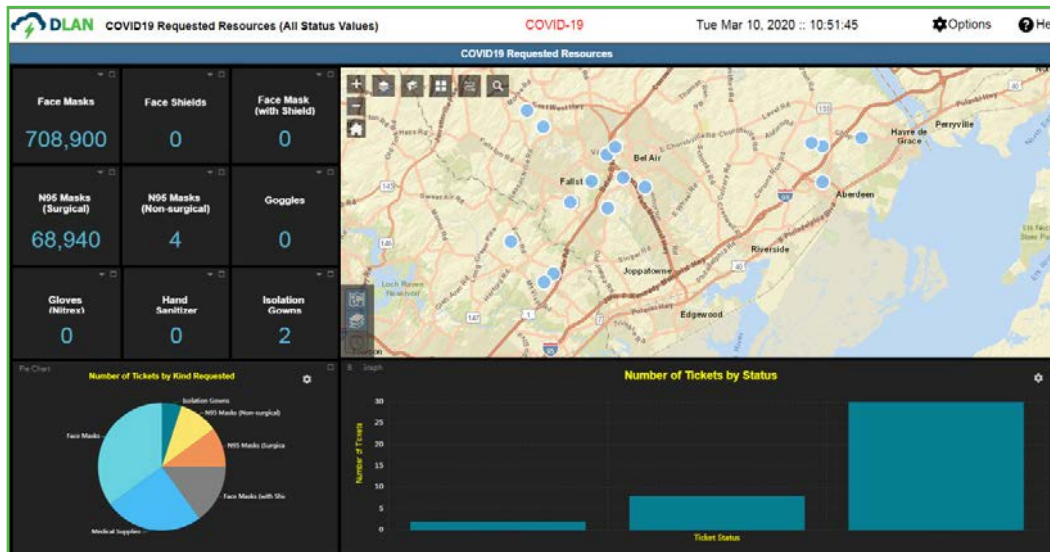

Figure 1: DLAN Custom Status Board

BCG recommends the following tools to ensure responders have all the information they need to successfully manage this pandemic and whatever comes next:

• Public Points of Distribution and Dispensing (PODs)

• Bed Tracking

• Quarantine Facilities Management

• Mortuary Tracking

• Common Operational Picture Map

• Situational Awareness Dashboards

• Mobile Functionality

• Asset Tracking

• Personal Protective Equipment (PPE) Tracking

• Financial Tracking

Recommendations for how these tools should function are described next.

Public Points of Distribution and Dispensing (PODs)

Distributing medical counter measures (MCMs) and health care related items such as: vaccines, antibiotics, or other medical items is essential to responding to a large-scale health crisis. Opening and operating centralized locations where the public can pick up life sustaining commodities can be challenging, especially when resources are already stretched as they have been during the COVID-19 pandemic. DLAN has all the tools your team needs to address the issues of ordering and tracking POD supplies and collecting, aggregating, and displaying overall POD situational information.
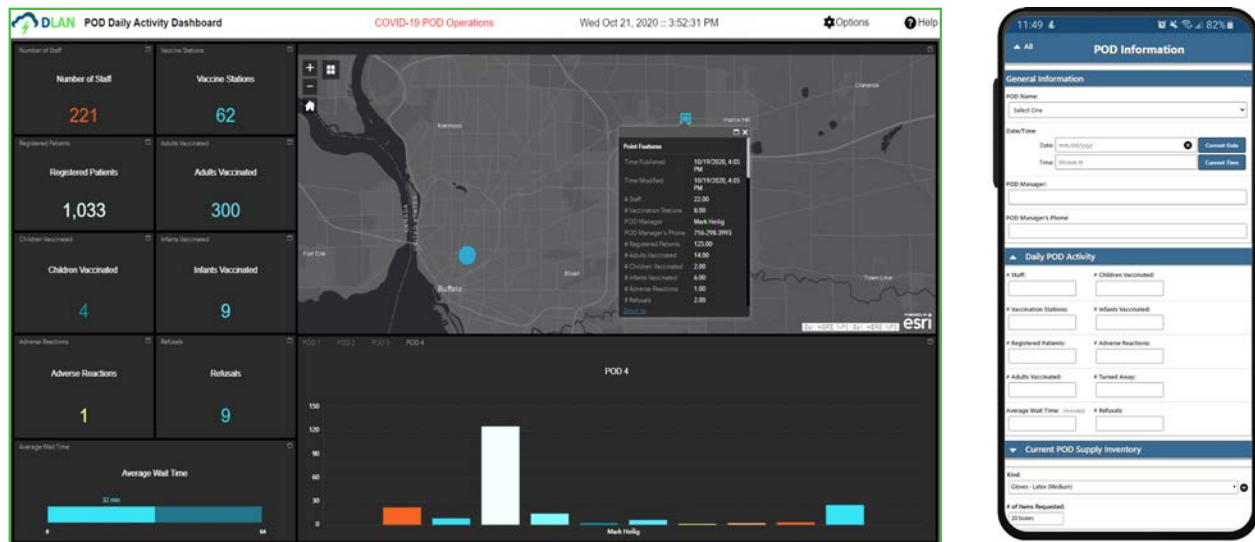

Figure 2: POD Management Dashboard and Mobile Forms

Using DLAN's Mobile Responder App, POD personnel can quickly order supplies and report on operations. DLAN offers preset POD forms for POD supply orders and POD daily activity reporting. Forms can also be customized by DLAN Administrators to meet local needs.

Once entered into the system, form data can be displayed in custom dashboards and task management reports. As an example, dashboards and reports can be created to facilitate management of POD orders and warehouse inventory. Dashboards and reports can also be created to display individual and aggregated POD activity benchmarks including number of patients treated, average wait time, staffing levels, and supply inventory levels. As with other areas of DLAN, all information is tracked to support post-event analysis and reporting.

DLAN's POD Management tools will allow you to track dynamically changing inventory levels, match supplies to demand, and manage POD warehouses. With DLAN's mobile toolset, information can be entered from almost any device or location to facilitate data sharing between multiple geographical locations. DLAN's POD Management tools will improve overall situational awareness as related to POD supplies and activities. They will also ensure supplies get to where they are needed for effective vaccination distribution.

Bed Tracking

Many healthcare systems were unprepared for the surge of hospitalizations during COVID-19 and became quickly overwhelmed. A bed tracking solution can help provide critical situational aware-ness to senior level emergency managers tasked with maintaining a functioning medical system.

Figure 3: Bed tracking

BCG's bed tracking solution is used to track and report on facility bed availability, services availability, and overall facility status. Data from numerous facilities can easily be entered/updated, and aggregated to provide a comprehensive overview of facility (patient) capacity, capabilities, limitations, and needs.
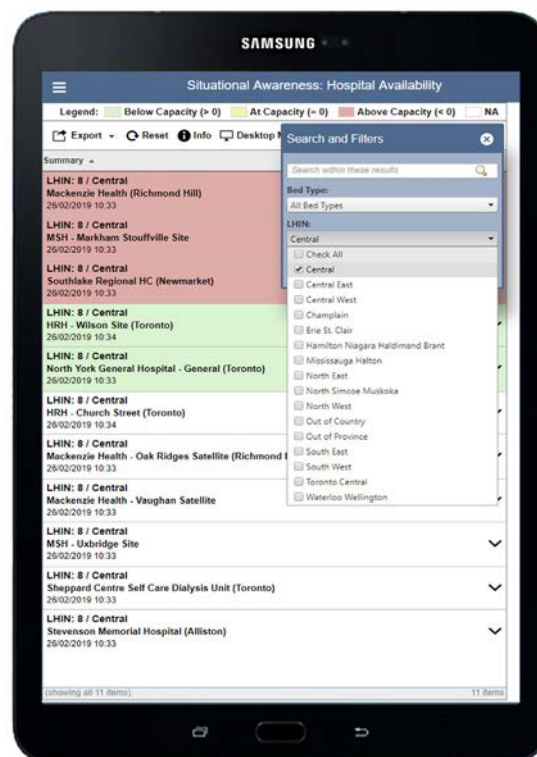
Figure 4: Mobile Bed Tracking Tools

Quarantine Facilities Management

Tracking the availability of quarantine facilities was another essential part of many areas of the COVID-19 response. Manual processes were insufficient for identifying potential sites and manage capacity levels.
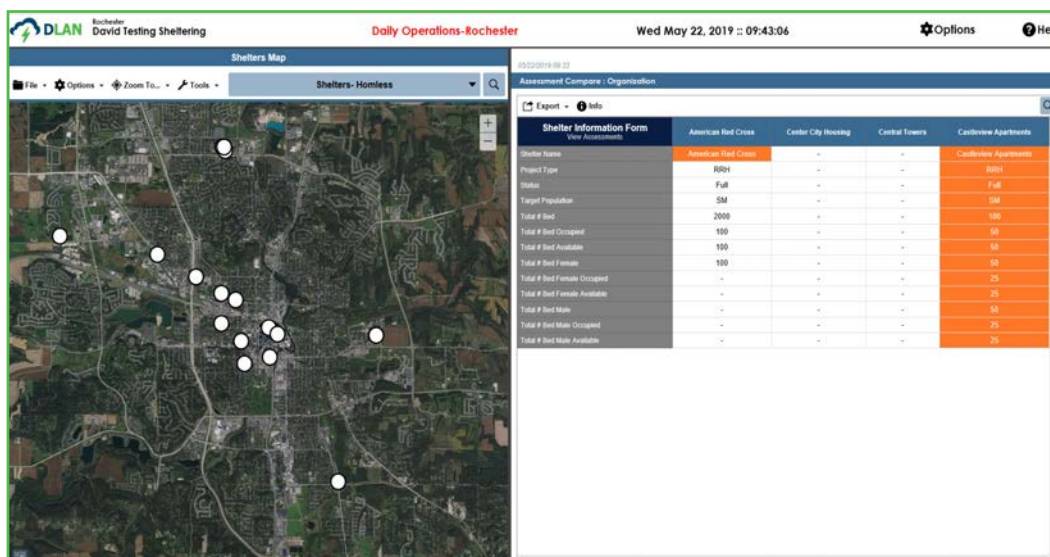
Figure 5: Quarantine Facilities Management

BCG's sheltering software can be utilized to track and manage quarantine facilities as well as the patient populations within them. Additionally, the software can be used to track the movement of people between facilities.
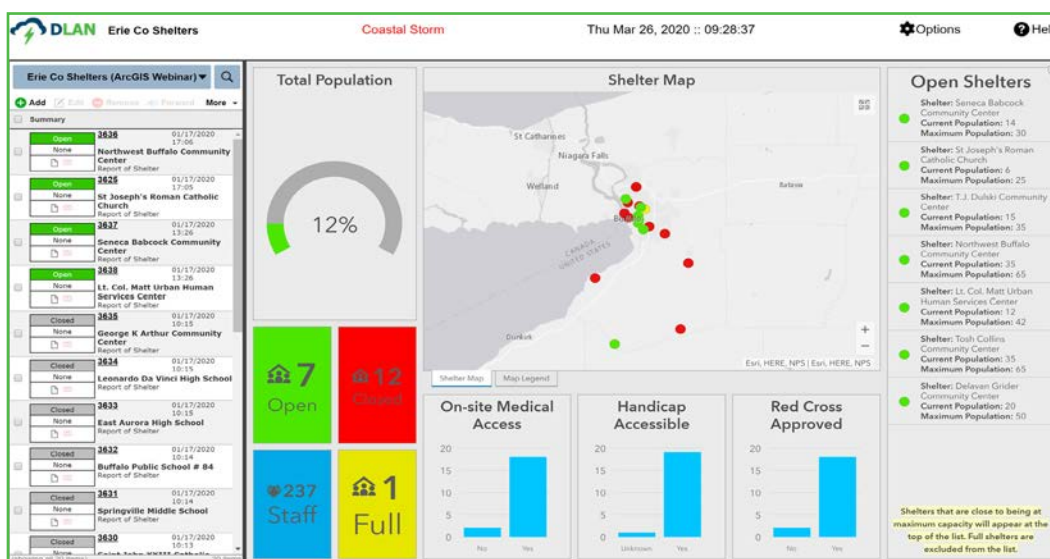
Figure 6: Custom ArcGIS Quarantine Facilities Dashboards

Mortuary Tracking

When an incident such as the COVID-19 Pandemic results in a high volume of deaths, a multitude of unusual problems can occur. In many hard hit areas, temporary storage locations needed to be identified and refrigerated trucks were used to both store and transport bodies. This made it difficult to track the availability of storage areas and to locate specific bodies for burial release.

Figure 7: Mortuary Tracking Report

DLAN's Mortuary Tracking tools will allow you to properly process, track, and locate bodies, as well as manage storage facilities and trucks. For mortuary tracking, DLAN utilizes data collection forms, which can include photos, electronic signatures, and GPS tracking. Information on current and incoming bodies can be entered and tracked regardless of their location, using the Mobile Responder App.
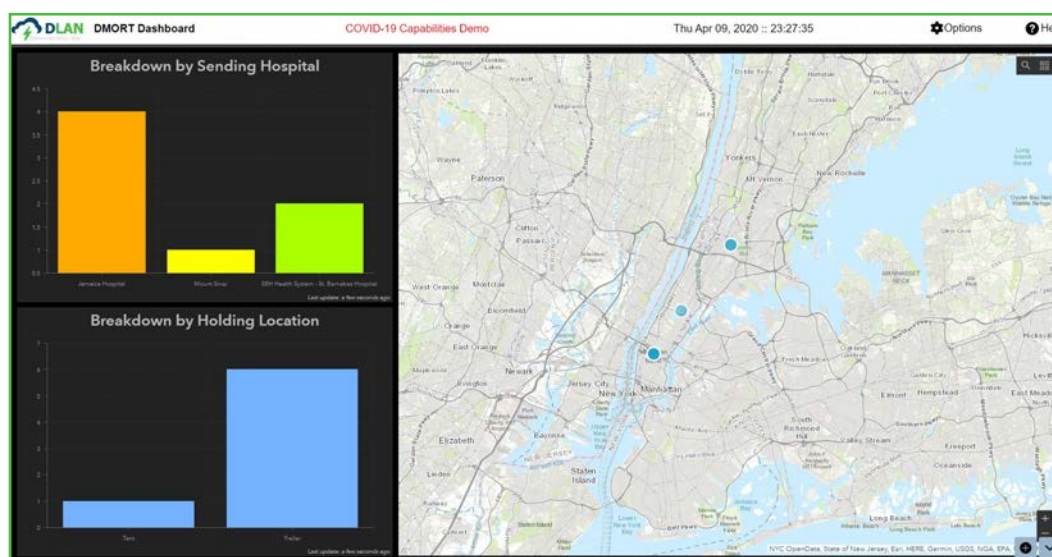

Figure 8: Mortuary Tracking Dashboard

All this information can be tracked on an individual basis to keep families informed and for burial release. It can also be tracked in aggregate to view which facilities/trucks are at capacity and which can accept new bodies. All information can be displayed in dashboards for improved situational awareness.

Common Operational Picture Map

Having a list of addresses isn't nearly as helpful as placing that information on a map. Maps allow users to take large amounts of disparate information and understand how it relates to each other geographically. The right mapping tools will allow responders to look at multiple different types of information simultaneously for improved situational awareness.

Figure 9: Common Operational Picture Map

BCG's GIS tools allow users to fuse together geospatial information from virtually any external or internal source onto one common display. User-friendly tools allow users to interact with underlying data. For example, these tools can be used to track COVID-19 resource stockpiles.
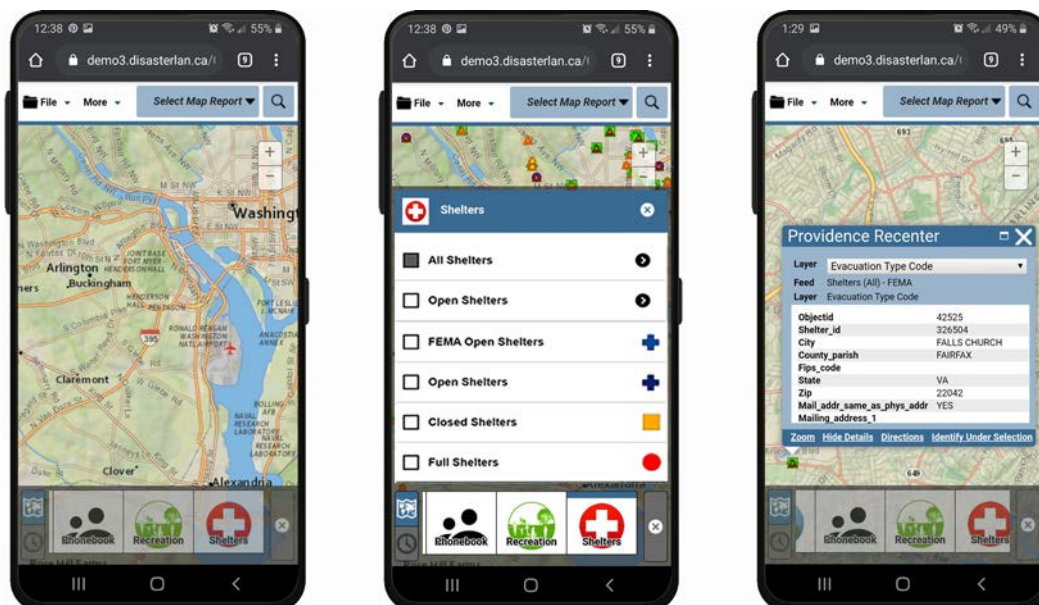

Figure 10: COP Map - Full Mobile Functionality

Situational Awareness Dashboards

Like maps, dashboards make it easier to quickly understand changing information by turning it into a more visual format. Custom dashboards can be created for specific roles, incidents, and stakeholder groups. This ensures that everyone can easily view the information pertinent to them and efficiently perform their response roles.
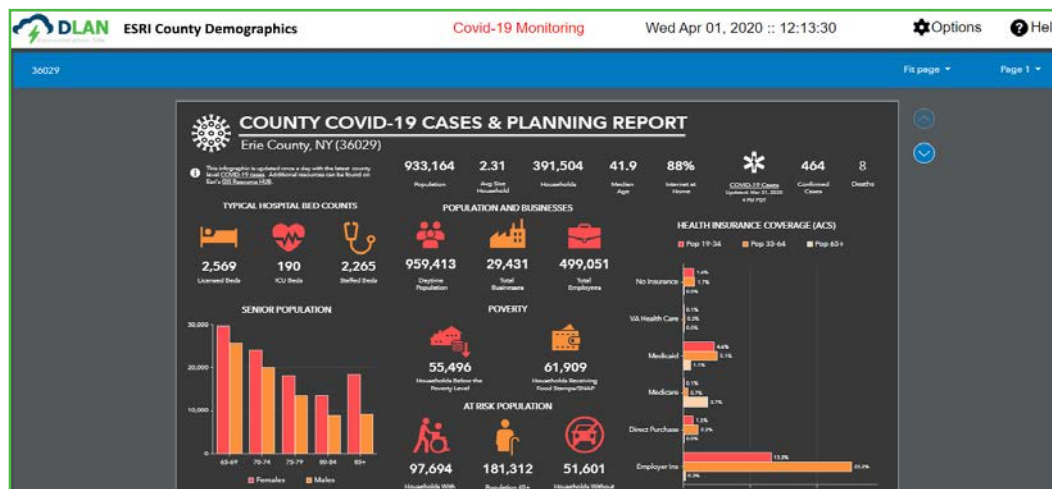

Figure 11: Situational Awareness Dashboards

Similar to our mapping tools, BCG's status boards can display information from a variety of internal and external sources, including both user-generated content and automated feeds. Information can be displayed as text, interactive reports, images, maps, charts, graphs, and other display types.
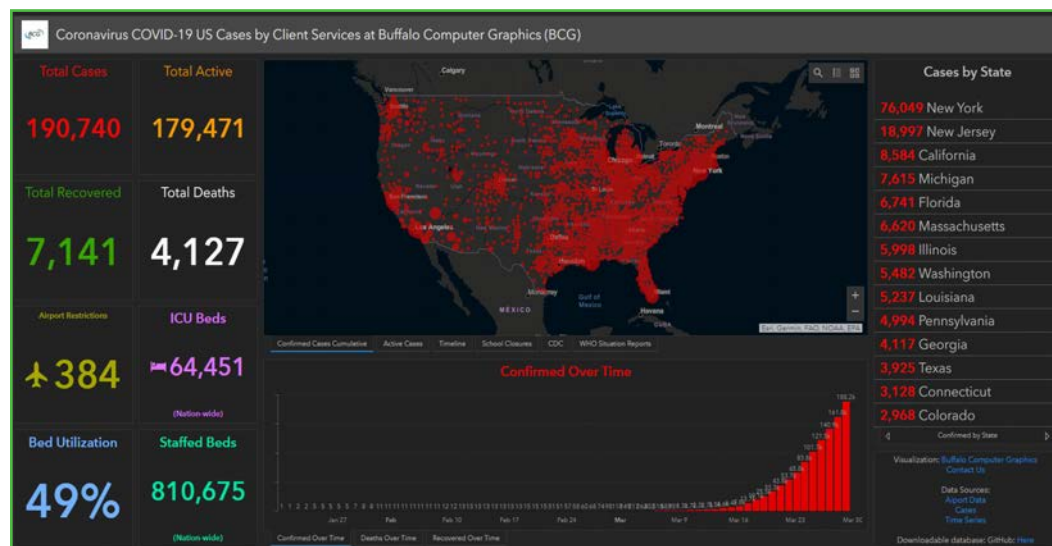

Figure 12: COVID-19 Situational Awareness Dashboard

In addition to user created custom dashboards, BCG also creates boards that can be used by any customer. For example, BCG has put together different ArcGIS based boards specifically for COVID-19 response efforts. Each board is based upon publicly available CDC/WHO data that is currently being updated on an ongoing basis. In this way users can leverage both organization specific custom dashboards and boards created by experts in the field.

Mobile Functionality

Now more than ever, the ability to work from anywhere on any device is critical. Working from mobile devices means responders don't need to gather in a centralized location in order to work on a response. This saves time and adheres to social distancing policies. In addition to performing a variety of response tasks, mobile apps are specifically well suited for collecting patient data at homes or within clinics and collecting facility information as needed.

Figure 13: Mobile Functionality

BCG's Incident Management Systems are designed to allow the system to be accessed from any mobile device. It includes a specific mobile responder app designed for disaster area use, which can function regardless of connectivity. Mobile forms can be rapidly created and deployed to field workers. Forms can be filled in offline and then published to the system when connectivity is restored. Field data can be aggregated and displayed on dashboards to provide critical situational awareness.

Asset Tracking

In the frenzy of an ongoing response, it is easy to lose track of equipment and other assets. Without proper tracking, precious time can be lost trying to locate lifesaving resources in warehouses during a response and after a response it may be difficult to retrieve expensive equipment from multiple locations. Accurate asset tracking saves time and money.
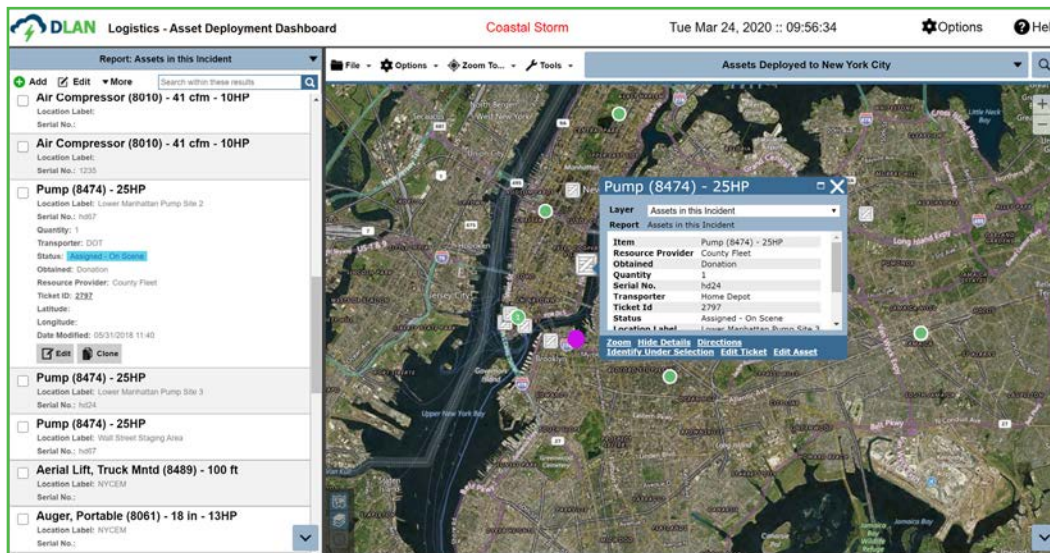

Figure 14: Asset Tracking

BCG's asset tracking provides a way for users to track deployed assets and resources for a particular incident and quickly view the status, quantity, and location of all deployed assets in the asset ledger. It integrates with most asset tracking devices for quick and easy tracking of personnel and equipment.

Figure 15: Asset Ledger

PPE Tracking

Lack of Personal Protective Equipment (PPE) was another big challenge facing medical person-nel during the first stages of the pandemic. Knowing current stockpile levels, current need, and which outside partners have resources available are critical to keeping first responders safe.

Figure 16: PPE Tracking

BCG has a number of tools to help track, distribute, and account for PPE. Inventory counts can be filled in from the mobile responder app from stockpile warehouses and hospitals, or automatically updated through integrations with current stockpile software. This information can then be aggregated and displayed in PPE tracking dashboards. Dashboards can be used to monitor incoming and stockpiled supplies across multiple facilities, identify areas of need, and match them up to available resources. As current stockpiles are depleted and new resources received, the dashboards update counts in real-time for improved situational awareness and decision making.

Figure 17 Mobile PPE Tracking Forms

Financial Tracking

Though financial concerns may not be the top priority when working to save lives and contain the spread of the virus, eventually bills will need to be paid. FEMA has very specific reporting requirements and if expenses are not properly tracked, time will be lost after the event trying to gather the appropriate information or worse, claims may be denied.

Figure 18: Financial Tracking

BCG's finance module provides the necessary tools to track costs for missions, tasks, and resources and assist with properly reporting them to FEMA for reimbursement. Current resource cost codes are available for all default resource types based upon FEMA cost codes and custom resource codes can be added by DLAN system administrator. Information about the item, delivery info, wage info, and invoicing are all recorded by the system.

Figure 19: Financial Ledger

Conclusion

As the vaccine is rolled out and we start to be able to turn lessons learned from COVID-19 into preparedness tactics for the next crisis, the need for modern, digital tools to share real-time information, visualize data, and track everything becomes apparent. Tools for POD, bed, patient, PPE, and facility management are necessary to evaluate the state of healthcare services. Maps and dashboards help responders maintain complete situational awareness and make informed decisions. Mobile tools keep staff working regardless of location. Asset and financial tracking assist responders both during the response and during demobilization and after-actions.

BCG's Incident Management products offer all of these functions and much more. BCG's flagship solution, DLAN, has been helping emergency managers stay on top of disasters since 2002. This proven solution will help your team respond to COVID-19 and prepare for what comes next. BCG's team has the experience necessary to advise you on best practices as you move into a virtual EOC environment to support COVID-19.

Improve your Pandemic Preparedness and Response with DLAN!

About BCG

DLAN is engineered by Buffalo Computer Graphics, Inc. (BCG), a veteran owned small business that has over 35 years of experience in software, hardware, and systems engineering. We have earned a reputation for providing superior products and excellent service to both our private sector and government customers. All of our engineering is done in house by our experienced and talented team. In addition to working closely with our customers to determine their exact needs, BCG prides itself on our ability to provide quick and expert support on all systems we have installed. Our core belief in developing relationships, not just selling products, sets us apart from our competitors.

BCG has recently been recognized by Inc. 5000 and the Deloitte Technology Fast 500 as one of North America's fastest growing companies. BCG was also named as one of govCIO Outlook's Top 10 Emergency Management Solution Providers.

Our Mission:
To engineer superior products and offer outstanding service tailored to our customer's needs.