

Lessons Learned from Moving to Virtual/ Hybrid EOCs in the COVID-19 Response

An [Emergency Operations Center](#) (EOC) is the strategic-response nucleus activated during significant events (e.g., natural disasters, terrorist attacks, or infectious disease outbreaks). During the COVID-19 pandemic, EOCs played a vital role where health department leaders implemented and coordinated response objectives, plans, and activities. While few state and territorial health agencies (S/THAs) included virtual emergency operations centers (VEOCs) in their response plans prior to the pandemic, many jurisdictions were able to fully pivot to VEOCs in a matter of months. Two years later, many EOCs across the nation remain operational in a virtual environment for the safety of public health staff.

Because of the compressed timeline and since many jurisdictions had not written VEOCs into their response plans, many S/THAs initially identified a number of needs and challenges specific to their new virtual environments. However, jurisdictions also found solutions to address these gaps through software and cloud- or internet-based platforms. They have built effective daily management processes incorporating new tools and learned to manage a large, complex response without the need for close physical proximity.

ASTHO's Directors of Public Health Preparedness (DPHP) Network reported a range of challenges that the DPHPs, as response leads, have learned to address, including inconsistent connectivity, greater need for remote capabilities, and improved software to facilitate operations management and reporting.

Enabling Remote/Hybrid Workspaces

To stand up virtual or hybrid EOCs, public health agencies first needed to enable remote work for their staff. The Texas Department of State Health Services (DSHS) and Mississippi Department of Health (MSDH) turned to web-based video conference platforms that gained global uptake in 2020. These platforms and email management were critical for managing the response while staying virtual. Other changes included replacing outdated Wi-Fi routers and implementing mobile device management software to strengthen staff connectivity and enable work-from-home environments. Both Texas and Mississippi reported increased efficiency after updating operation protocols to account for new technologies, and that they are likely to continue to work differently even after the pandemic response ramps down.

Upgrading IT Infrastructure and Creating New Key Positions

Many S/THAs also addressed gaps in their organization's IT infrastructure that they identified while standing up their VEOCs. For example, MSDH upgraded their servers to create a redundant failover location and is planning to replace antiquated phone systems across most of the state's health department locations.

"Technology is moving forward at all times so ensuring we have mature plans for updates, replacement, and procurements including budgeting will be key."

--Jim Craig, MPH, Senior Deputy and Director Health Protection, MSDH

In parallel to these updates, S/THAs also continue to update plans, procedures, processes, establish robust training and exercise programs, and fill new key positions necessitated by these changes (e.g., a Mobile Software Manager to manage field operations of Mississippi's 83 health department locations).

Improving Operations Through New, Multipurpose Tools

For many S/THAs, incorporating new tools addressed gaps and helped to further improve daily operations. Some are looking towards multi-purpose platforms to meet alert or notification requirements and document the necessary data elements to meet CDC ORR (Operational Readiness Review) call-down drill requirements.

The North Carolina Department of Health and Human Services (NCDHHS), for example, added a new platform that served as a single, flexible tool with multiple functions. This platform is designed for emergency management, with helpful features such as a visual management dashboard and cloud-based notifications. This new multipurpose emergency management platform will be a key component in several upcoming initiatives. One is the creation and maintenance of the Community Outreach Information Network (COIN), as part of their expansion and enhancement of preparedness and response messaging to Access and Functional Needs populations and servicers. The platform will also be utilized more broadly in fatality management, including creating tools for data tracking for mass fatalities or even when there are no active incidents.

A benefit of some of these newer tools is that their data “can be easily turned around and utilized more effectively than some other systems,” while meeting data and communications security levels that previous systems did not. However, even more key to ensuring many EOCs' successes virtually was establishing updated protocols centered around these tools, rather than focusing purely on the technologies themselves.

Looking Forward

The COVID-19 pandemic has undeniably challenged the traditional work environments of many organizations, including the historically in-person workplaces of public health agencies. In early 2020, S/THAs across the United States rapidly pivoted to unprecedented virtual or hybrid EOCs. They identified and addressed gaps, upgraded response infrastructures and protocols, and found new tools to serve them in and outside of the pandemic response. While seemingly simple, these upgrades were all foundational for further improving daily operations and the safety of public health staff. As one DPHP stated, however, even these changes were “not as robust as what was needed for this pandemic.”

For an effective future response, jurisdictions will need to continue building capacity for and updating VEOC operations for various types of response plans. The sustainment of financial resources and a skilled workforce will be vital towards these efforts' success. Even as the COVID-19 response ramps down, jurisdictions are already using these lessons learned to prepare for the next virtual-based public health response.

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This brief is part of ASTHO's Public Health Transformation series, which explores how state and territorial health departments have adapted during the COVID-19 pandemic.