



IJIS Institute

POST COVID-19: Successes, Challenges and Recommendations

Acknowledgments

This document is a product of the IJIS Institute, a non-profit alliance working to promote and enable technology in the public sector and expand the use of information to maximize safety, efficiency, and productivity.

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To drive public sector technology innovation and empower information sharing to promote safer and healthier communities.

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1 Introduction

The IJIS Institute's Technology and Architecture Committee (ITAC) is chartered with providing information to industry and practitioners regarding technologies, architectures, and standards that enable the successful adoption of the technology and sharing, or enterprise use of information. Technology adoption is a discipline that spans the criminal justice (Law Enforcement, Corrections, Courts), homeland security, and public safety (Fire, EMS, Emergency Management) domains. The ITAC has developed this information paper on COVID-19 related technology adoption and business change successes, gaps, and recommendations for the benefit of our practitioners in their respective domains.

1.1 Background and Impacts

The COVID-19 pandemic has brought unprecedented and rapidly shifting challenges to business, government, and our daily lives. Throughout this event, however, organizations and individuals have continually risen to meet these challenges, innovating and adopting new technologies in ways and at a pace never before imagined. By leveraging technology, reevaluating long-established business processes, and expanding inter-agency and public-private sector cooperation, the criminal justice, homeland security, and public safety domains have not only continued to operate, but realized long-term, structural improvements in efficiency, outcomes, and customer satisfaction.

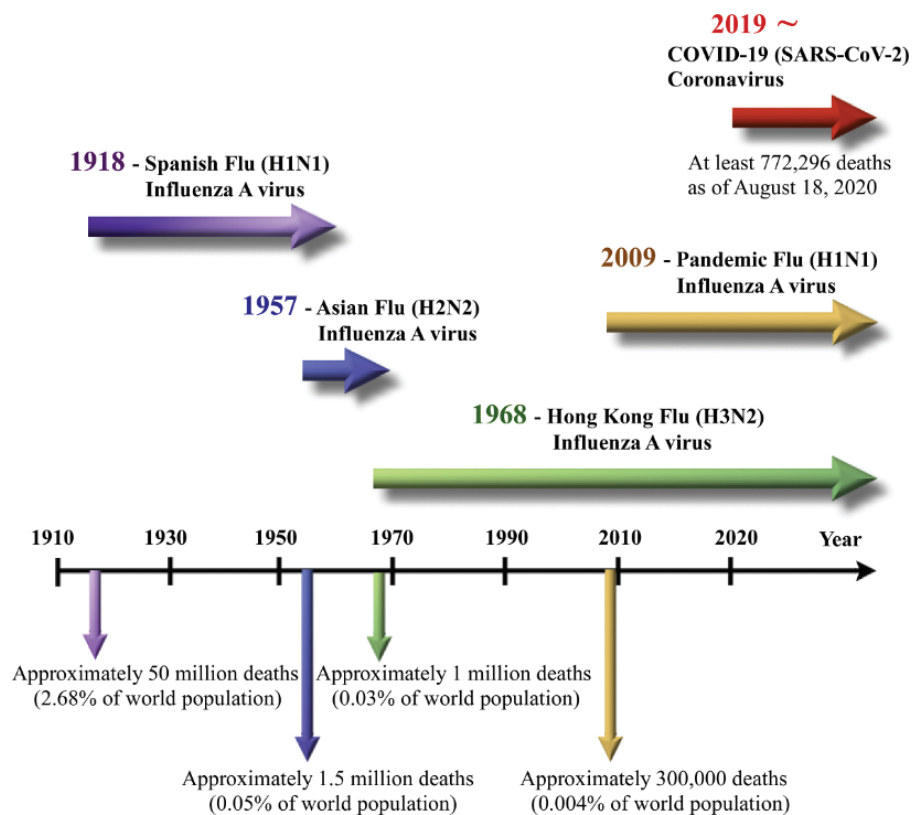


Exhibit 1. A Timeline of Five Pandemics Since 1918 (Liu, Kuo, & Shih, 2020)

As indicated in Exhibit 1 above, COVID-19 is not the first global pandemic we've faced, although the nature of modern life created new hurdles for our response and recovery. Unlike past pandemics, however, we have never been better equipped to overcome these obstacles. Instant, on-the-go access to information, practical video conferencing and communication tools, and enhanced remote access and physical security solutions have seen rapid adoption. Organizationally, businesses integrated these tools into their existing processes, and in many cases, reworked and improved those processes as a result. Although not every experience has been successful, the result helped redefine what is possible. It is hoped that this momentum continues in a post-COVID world. Exhibit 2 below highlights the timeline of events from the first known COVID-19 cases to the sequence of responses and significant results.

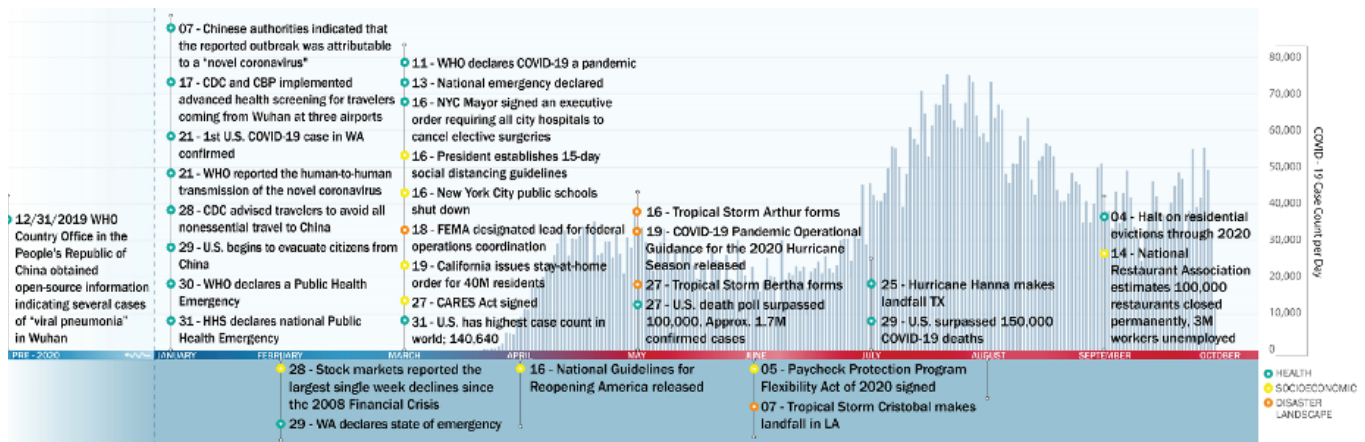


Exhibit 2. COVID-19 Pandemic Timeline in the United States (FEMA, 2021)

In the criminal justice domain specifically, the positive effects have been noteworthy. Corrections agencies have adopted electronic health record systems to track COVID spread, while private communications companies have greatly expanded access to free services for inmates and their families. Courts have routinely held virtual hearings, and law enforcement obtained warrant approvals from judges via video chat. This paper examines some of these accomplishments within the criminal justice and public safety domain, identifies some of the ongoing challenges, and provides areas for continued improvement.

1.2

Document Organization

The organization of this paper is as follows:

Section 2 discusses the success organizations have had and what it took to achieve those results.

Section 3 examines gaps, room for improvement, and more.

Section 4 provides recommendations and next steps.

2 Current COVID-19 Related Success in the Government Sector

The COVID-19 pandemic forced many changes in the criminal justice, homeland security, and public safety domains, the most notable of which are the changes to the ways business is conducted across all domains. Wherever possible, public sector organizations leveraged Information Technology (IT), especially video conferencing, in place of physical, face-to-face appearances. Additionally, changes in policies and procedures have been made to enable employees and contract support staff to work from home or other alternative locations. The requirements for remote work forced rapid adoption of advanced technologies to support this function.

2.1 Law Enforcement Success

Law enforcement agencies, many already suffering from recruiting and staffing shortages, budget cuts, and greater public demands, were challenged to keep continuous service in a COVID-19 pandemic. The public has increased concerns about close contact with unfamiliar persons, including emergency services personnel. This required agencies to implement policies to protect the public, themselves, and their co-workers. Agencies implemented new policies for physical operations such as personal distancing and infection prevention, however, there were also some impacts to information and communication systems. A few notable system impacts were:

1. **Officers potentially exposed to COVID-19 were required to file special “Possible Exposure to Communicable Disease” reports and possibly injury reports with great expediency. Quarantine protocols were updated frequently and many officers found themselves assigned to work remotely.**
2. **Intelligence gathering using facial recognition, either human or software-based, was detrimentally impacted due to face coverings being worn by persons of interest.**
3. **During the height of the pandemic, some agencies required employees to work from home and later had to show evidence of COVID-19 vaccination prior to returning to their normal workplace. Tracking vaccination status often required a special tracking system or data entry in human resource systems.**
4. **Sworn and civilian personnel who were assigned remote work were suddenly forced to install web conferencing software and telecommute using agency-issued or personally-owned devices.**

5. Some agencies tasked field officers working remotely to monitor electronic dispatch screens for calls being held for an excessive period. Officers were instructed to contact the reporting party on dispatch-delayed CAD calls to determine if an in-person response was required or if a report could be taken remotely. The officer would contact dispatch by radio to notify them that he/she was taking the call. Officers taking a report would request an incident report number from dispatchers via radio or telephone. Remote working officers connected to their records management system (RMS) by whatever means possible in order to submit an incident report.
6. Remote workers often found that their home internet connections had insufficient bandwidth for network-intensive content such as conference video. Some agencies issued personal Mi-Fi hotspot devices for workers. These devices depend on cell tower coverage so personnel in rural areas often suffered weak or intermittent connections.
7. Supervisors on remote work assignments connected to the RMS to review, and approve or reject reports.
8. In some cases, officers were required to provide a personal phone for use during remote work assignments.

COVID -19 has had a major impact on law enforcement operations and systems. Many of the polices developed for this emergency directed the modified use of information telecommunications systems and will be a model for future similar emergencies.

Reference: Tulsa Police Department COVID-19 Protocols version 2.0, February 14, 2021

2.2

Corrections Success

Of the numerous operational and technology-related successes, the following are highlighted for their effectiveness.

The initial challenge for jail and prison operations was to effectively test, identify, separate, and treat incarcerated offenders while protecting staff. Although agencies across the country adopted different methods to achieve these goals, one of the overlying requirements was to maintain a method of tracking the status of these offenders. As simple as this may sound, adopting a sound methodology for tracking offenders and their status would make a big difference in COVID-19 infection outcomes. Agencies either modified their existing Jail Management System (JMS) and Offender Management System (OMS) applications, or created ad hoc applications to track offenders as they were identified, transferred, housed, separated, quarantined, and treated. For those agencies utilizing an Electronic Health Record (EHR) application to manage offender health care, the systems were modified to track the testing, treatment, and ultimately, the inoculation records of their offenders.

In addition to the health of offenders and staff, a major potential health risk came from the thousands of visitors who regularly enter jails and prisons to visit offenders. In-person visitation is an important factor in offender behavior and reentry into society. However, in many agencies, on-site visitation was suspended quickly due to the risk to not only offenders and agency staff, but also to visitors. As agencies adapted to the new COVID-19 reality, solutions utilizing inmate tablets were adopted for video calls, smart phone visitor application screening processes were developed, and appointment driven in-person visitation with social distancing were enacted to reduce exposure.

In response to measures taken by jails and prisons to prevent the spread of COVID-19, prison communication providers began offering a suite of free communications services to help incarcerated individuals maintain these connections, while also easing the financial burdens their friends and families are facing amid the pandemic. Since March 2020, one communications company provided 40 million free phone calls, 6.4 million free video connections, and 23.8 million free e-messages to incarcerated individuals and their loved ones. The assistance programs were launched in partnership with correctional agencies across the country, resulting in more than 320 million minutes of free phone connections alone, ensuring loved ones stayed in contact during the pandemic.

In the supervision of probationers and parolees, agencies initially mitigated or suspended in-office visits and home visits to reduce exposure risks and travel risks for both offenders and staff. As agencies grappled with maintaining contact with community supervised offenders, solutions leveraging conference calls, social distanced contacts, and smart phone apps became the norm. Solutions included the deployment of specialized apps for both the supervising agents and supervised offenders. These apps allowed the agent to maintain contact with offenders via biometric validated video interaction and GIS location confirmation. The offender can keep up with financial obligations, substance abuse testing requirements, remote check-in appointments, and receive texts from the agency or supervising agent.

Courts Success

“The COVID-19 pandemic is not the disruption courts wanted, but it is the disruption that courts needed to re-imagine and embrace new ways of operating and to transform courts into a more accessible, transparent, efficient, and user-friendly branch of government,” according to the Council of Chief Justices (CCJ) and Conference of State Court Administrators (COSCA) Rapid Response Team (RRT) Technology workgroup in a recently released resource paper.

In the past, courts were reluctant to adopt remote procedures other than remote arraignments that limited the need to transport defendants from jails to court facilities. The culture of courts as “halls of justice”, with raised judicial platforms, gavels, and jury boxes has been, in the past, a barrier to innovation. But, with the current pandemic crisis, courts had to scramble for remote technologies such as laptops and cameras for Judges and court staff, and video consoles for court room viewing of participants and evidence.

Early in the pandemic, the National Center for State Courts (NCSC) stated that the 5 most common effects on courts included (NCSC, 2020):

- Restricting or ending jury trials.
- Generally suspending in-person proceedings.
- Restricting entrance into courthouses.
- Granting extensions for court deadlines, including deadlines to pay fines and fees.
- Encouraging or requiring teleconferences and video conferences in lieu of hearings.

The need to innovate accelerates as the length of the pandemic continues to grow, and the fear of case backlogs increases. While many restrictions remain in place for courts, some have begun admitting a limited number of participants to court proceedings with screening and social distancing in place. They are providing spaces such as small conference rooms equipped with laptops for self-represented litigants to use if they do not have technology at home.

The use of remote technology to conduct court proceedings had other positive effects beyond the need to innovate. The number of “failure to appear” warrants has been reported as lower in many courts because the participants do not need to travel to the courthouse. Remotely appearing in court lessens the intimidation some individuals may experience. Electronic payment of fines and costs has been reported to increase adherence to these penalties.

With court staff working remotely, there have been changes in human resources and IT within the courts. Courts had to double-back on tracking equipment being used at home and reconsider their security and approach to accessing critical software, such as case management systems, document stores, and administrative tools. While some

courts still have couriers transmitting documents to Judges for their signature, other courts increased their use of document management systems, electronic signatures, and other means of efficiently moving information and documents through the court system.

2.4

Homeland Security Success

The Department of Homeland Security's (DHS) efforts in preparedness and readiness facilitated a speedy, whole-of-government response in confronting COVID-19, keeping Americans safe, and helping detect and slow the spread of the virus. DHS Operational and Support Components, as part of the Department-wide effort and layered response, U.S. Customs and Border Protection (CBP), the DHS Countering Weapons of Mass Destruction Office (CWMD), U.S. Coast Guard (USCG), Transportation Security Administration (TSA), Federal Emergency Management Agency (FEMA), U.S. Immigration and Customs Enforcement (ICE), the Cybersecurity and Infrastructure Security Agency (CISA), and others are actively working to protect the nation. Chad F. Wolf, the Acting Secretary of DHS said:

"As you know, our Department is well prepared to respond to the array of present dangers and ever-emerging threats to our Homeland, including communicable diseases that threaten the safety and security of the American people. That is why DHS and its component agencies continue to support the Department of Health and Human Services (HHS), which is the lead federal agency in charge of the U.S. government's coronavirus response, in a whole-of-government effort while we remain focused on assisting travelers arriving at our air, land, and maritime ports of entry."

The Federal Emergency Management Agency (FEMA) component of DHS engages in a wide range of activities to prepare for and respond to disasters. As the scale and scope of the COVID-19 pandemic became clear, FEMA faced challenges at both the national and regional levels to collect data and information relevant to decision-making and the prioritization of resources. To maintain situational awareness, sharing essential information among response partners at all levels required FEMA to adapt conventional communication means, technologies, and platforms. FEMA's report, "Initial Assessment Report of Coronavirus", details many findings and recommendations (FEMA, 2021).

Despite the global challenges, FEMA distributed billions of dollars worth of PPE and other resources as shown on the following graph.

By The Numbers 2020

\$51.6B+ obligated in support of COVID-19 efforts

1K+

FEMA employees supported the pandemic response

\$44B

in financial assistance to Americans who lost wages due to the COVID-19 pandemic

Regional Response Coordination Centers have been active since **March 15**

The information on this graphic is updated as of Sept. 27

Critical Supplies Shipped

46.7M



FACE SHIELDS

1.1B



SURGICAL / PROCEDURAL MASKS

249M



N95 RESPIRATORS

432M



COVERALLS/GOWNS

28.6B



GLOVES

COVID-19 Response

Exhibit 3. FEMA Successfully Distributed Billions of Resources (FEMA, 2021)

FEMA coordinated with private sector partners to expand access to scarce resources, but lacked a consistent strategy across the operation for involving the private sector. FEMA used the Defense Production Act (DPA) to retain medical exports for domestic use, prioritize federal contracts with medical suppliers, and partner with the private sector to assess future needs and production capabilities.

2.5

Public Safety / Emergency Management Success

As presented by the IJIS Institute's Emergency Communications Center Evolution Working Group (IJIS Institute, 2021), the Coronavirus pandemic forced Emergency Communications Centers (ECC) to accelerate many remote and work-from-home programs. As reported by the National Emergency Number Association (NENA):

64% of ECCs had no capability for remote ECC operations.

30% can work remotely from a separate public-safety or government facility.

7% have the ability to work from home.

In response to this state of affairs, many ECCs had to develop new and untested approaches for working remotely. The pandemic has forced many ECC staff to take calls and dispatch resources from their homes. It forced the emergency management agencies to begin developing remote working scenarios. The IJIS working group termed this "Dynamically Distributed Operations (DDO)" where ECC personnel can essentially work from anywhere (IJIS Institute, 2021). A side benefit of the DDO concept is that it is applicable to a wide range of issues – not just pandemic response. The solution set expands to address other issues such as extreme weather, wildfires, and social unrest, to name a few.

3.1 Law Enforcement Challenges and Gaps

Despite the many successful mitigations, law enforcement agencies still face many challenges. Public and political scrutiny has never been higher than today. Agencies are struggling to recruit new officers and many officers are opting to retire early. The result is fewer officers to cover patrol shifts and fewer citizen contacts, reports, citations, and arrests. Fewer officers demand greater efficiencies including completing reports from the field instead of driving to the station. Field-based reporting is no longer an option which drives the need for greater connectivity and access to systems. Legacy application systems may need to be provisioned for remote access by remote workers.

Work-from-home policies require improved connectivity while maintaining required CJIS security levels. Secure VPNs must be available and able to handle heavier traffic loads during the pandemic. Mobile and fixed devices must be secured which may require encrypting local device storage, additional authentication factors, and other security measures.

The many COVID-19 challenges to law enforcement agencies are stretching information technologies to their limits, demanding advanced solutions and updated policies.

3.2 Corrections Challenges and Gaps

As with other criminal justice, homeland security, and public safety domains, the corrections arena also faced a myriad of new challenges arising from the COVID-19 pandemic. From protecting staff and the community, managing jail and prison populations, managing inmate and offender visitors, and managing supervised probationers and parolees, the challenges affected every aspect of correctional operations.

At the start of the pandemic, many jurisdictions inside and outside the U.S. took major efforts to reduce their jail and prison populations, decrease the number of prisoners and staff who could be exposed within facilities, and improve the possibility for social distancing inside. This imposed significant operational challenges in both prisons and the community corrections agencies, assuming responsibility for the increased numbers of early releases. Since that time, jail and prison populations tended to return to pre-pandemic levels.

Courts Challenges and Gaps

There have been many challenges the courts faced in reacting to the pandemic. Examples include:

- **Considerations for staff and public safety.**
- **Adapting to a remote workforce and remote security requirements.**
- **Litigant issues such as language access/interpreters, ADA requirements for remote tools such as online payments, online dispute resolution (ODR), and case access.**
- **Providing for individuals that do not have access to remote technology for service, notification, and court participation.**
- **The need to quickly update rules and statutes to accommodate remote practice and replace emergency orders.**

The list of adaptations that will need to be made moving forward was considered by the CCJ/COSCA Pandemic Rapid Response Team (RRT), a group of chief justices and state court administrators established in March, that has been working for months to give state courts information to help them operate more efficiently during and after the coronavirus pandemic. (Hecht, et al., 2020)

In addition to adapting to changes in process, courts are anticipating a backlog of some case types. This is due to many factors. One factor is the CDC Eviction Moratorium. It is anticipated that once this is lifted, a large number of eviction cases will be filed in courts. In addition, as families are confined together at home, some resources anticipate an increase in family law cases such as domestic violence, child protection, and elder and disabled care or abuse. Civil cases may also rise in the area of foreclosures, for example. (@the Center, 2020)

From a technology perspective, many courts struggle with the tension between some staff and judicial desire to “return to normal” versus the push from others to move forward. Courts are behind non-government agencies in security staffing and technology maintenance, evaluation, and implementation. In some areas of technology such as remote appearance, security loopholes were hastily discovered and closed, for example. Court technology staff have had to expand their skills rapidly and for some there are even greater bottlenecks to achieving long-term goals. Many business leaders want to accelerate technology implementation without critical resource evaluation. It will be important for courts to form business/technologist governance and partnerships to continue to avoid the pitfalls moving forward.

3.4 Homeland Security Challenges and Gaps

COVID-19 operations revealed areas in which the agency can improve resource management, planning, and information sharing to inform future operations. Below are FEMA findings and recommended improvements:

Exhibit 4. FEMA Key Findings and Recommendations (FEMA, 2021)

KEY FINDINGS	RECOMMENDATIONS
1. Federal pandemic planning did not account for the large-scale inter-agency operations, resource shortages, and integrated federal approach to supporting SLTT partners required to respond to this pandemic.	Establish an interagency planning working group to review the COVID-19 incident and update the PanCAP for a whole-of-government response. The plan should build on the 2020 COVID-19 operations, with updated modeling and simulation to build out the scenario, develop assumptions, and identify the courses of action for operational requirements.
2. Federal plans did not envision FEMA leading the federal response for national pandemic operations, and neither headquarters nor the regions had current, comprehensive plans for a leading role, limiting the efficiency of applying the agency's operational capability.	Based on the role Congress and the Administration direct FEMA to play in pandemic operations, and the authorities granted, the agency should review, revise, and develop plans for HQ and the regions, commensurate to their roles, that account for learning from the COVID-19 operations.
3. FEMA's ability to anticipate SLTT requirements was affected by insufficient understanding of SLTT projected consequences and capabilities.	<p>Institutionalize an integrated and coordinated approach to the development and maintenance of pandemic plans at all levels of government with SLTTs, public health partners, emergency management agencies, and the private sector, and exercises to validate those plans.</p> <p>Improve consequence analyses at all levels of government and in coordination with non-governmental partners. There is a shared responsibility to conduct consistent and comprehensive modeling and simulation of data that realistically assess risk and response capabilities in order to better develop realistic planning and understanding of the effects of a catastrophe and the resulting critical resources demands. These data enhance the effectiveness of locally executed, state-managed, federally supported operations. FEMA should update guidance to ensure planning and data from other federally-funded efforts are incorporated into FEMA requirements like the THIRA/SPR.</p>

KEY FINDINGS	RECOMMENDATIONS
4. Although current pandemic plans identify information requirements, they lack the specificity and guidance to establish data collection and reporting mechanisms for effective decision-making.	Update national and regional pandemic plans with the data points decision-makers require to make informed decisions. These plans should identify the sources of those data points and the partners who maintain those data and should include information collection plans that incorporate the data sources (both government and non-government). Federal interagency data sources should be considered and pursued for integration across the whole of government. FEMA should, where appropriate, establish memorandums of understanding and data sharing agreements with these partners to increase operational readiness for future disaster operations.
5. Without refined data requirements, independent approaches to data collection and analysis increased the number of requests to FEMA regions and SLTT and private sector partners.	Develop an implementation plan for improved data application to disaster operations that considers non-governmental data management and applications and allocate resources to pursue identified courses of action to improve data-driven operations. Examine the planning approach to data management and analytics based on preparedness-driven requirements and lessons learned from past disasters. FEMA should assess existing data systems, analysis, and products for their usability and effectiveness in informing and guiding senior leadership decision-making before, during, and after disasters.
6. FEMA's current situational awareness products limit data sharing and data-driven decision making.	Develop an agency intelligence unit that works across the enterprise at HQ and in the regions in preparedness and operations to gather data, analyze information, build tools, and advise leadership. FEMA should develop a strategy, commit resources, and implement a plan to build this capability that can inform policy and planning, understand threats and risk, assess vulnerabilities, and enhance operations. This would include the following steps: (1) evaluate the situational awareness processes for data collection, analysis, and reporting, and the systems used to manage the information; (2) identify reporting requirements from leadership at HQ and the regions; (3) collect insight from HQ efforts and regional data analytics to inform updates; and (4) consider dynamic collection, reporting, and presentation methods to reduce the time it takes to enter the data and the timeliness and validity of information being reported.
7. The lack of a shared common operating picture (COP) limited situational awareness and stakeholder collaboration on mission objectives.	Evaluate the ability of existing systems to serve as a comprehensive COP for situational awareness at all levels and invest resources in developing WebEOC or a similar platform to provide real-time data insight, customizable across the levels of operations based on common datasets, and that can integrate additional data from other federal agencies and other partners. Provide the staff and resources to maintain and update WebEOC, and to educate, train, and equip the workforce at all levels of government.

Public Safety / Emergency Management Challenges and Gaps

While the threat of COVID-19 was a major concern for Emergency Communications Centers, first responders, including emergency communications staff, generally were unable to work remotely given the unique requirements of their jobs. Per the IJIS Institute's Emergency Communications and Response Advisory Committee's (ECR-AC) whitepaper on ECCs & Pandemic Planning, only seven percent of respondents to a NENA survey indicated their agencies had the ability to work from home. Due to such drastically low numbers, many ECCS nationwide had to develop new and untested approaches in response to the pandemic.

Recommendations and Next Steps

The COVID-19 pandemic proved that agencies could react quickly to a crisis. While many agencies had Continuity Of Operations Plans (COOP), the pandemic emphasized the need to further develop and test these under variable circumstances. The length of the crisis proved to be unexpected and difficult for all.

Many agencies resisted quick advancement of technology in the past, but the pandemic proved that they could indeed adapt quickly to change. Agencies continue to look for ways to improve operations using technology to be more adaptable. Most agencies were able to leverage remote work technologies effectively, but the pandemic also revealed flaws and the need to advance these capabilities in the future.

Some of the common themes revealed deficiencies in remote technologies including the lack of adequate connectivity for remote workers and limitations in the remote software being used. The identification of these dependencies will undoubtedly open many possibilities to business and industry since it is unlikely there will be a rapid return to in-office work. Many workers have realized the advantages of working from home and this benefit will set many positions apart in a very tight hiring market. In addition, there continue to be challenges identifying people exposed to the virus, and its variants, and promoting a less crowded work environment.

Advancement in the ability for clients to connect and communicate remotely also provided opportunities for more participation and less non-compliance for courts, law enforcement, probation/parole agencies, and others. Additional software for client tracking, remote payment of fines and costs, evidence tracking, and the like was quickly put into place by many agencies. These revealed gaps in language-access coverage and workflow.

VPN access to critical applications was often quickly implemented and some agencies moved rapidly to Software as a Service (SaaS) or other vendor-hosted applications.

Remote work renewed concern about tenuous security infrastructure, especially for law enforcement agencies that require Criminal Justice Information Services (CJIS) certification. Information system security will undoubtedly require increased scrutiny, and since it is very costly to already-stretched government agencies, it will also require assistance from the federal government.

The changes in public sector use of technology during the pandemic were revolutionary with lasting impact. In some cases, business process / strategy has not kept up with these changes well. The long-term effect of these changes will only better serve the public, but there is much work to be done to ensure they are safe, secure, and accessible.

Government agencies should not abandon the successes, improved operating models, flexible work schedules, and/or locations resulting from the pandemic. Indeed, we recommend that government agencies:

- **Assess both the technologies and process changes imposed by the pandemic and adopt those that were effective in their standard operating environments. Part of this assessment should also include contributions to “mission agility” as many changes forced by the pandemic enabled organizations to be more responsive, agile, and effective.**
- **Build upon the successful adoption of technologies and ensure that both future operations and budgets account for these successes, as well as provide the necessary support to review and assess other technologies for adoption.**
- **Review and update policies regarding work locations to include more flexibility with respect to work-from-home or work-from-alternate-location. The pandemic has clearly shown that many positions can be effectively worked and supervised from different work locations.**
- **Update employee performance metrics to consider flexible work locations. Face-to-face or in-person specific metrics, if any, should be assessed for effectiveness given the new realities.**
- **Proactively reach out to their sister agencies and organizations such as the IJIS Institute and see what practices would be effective in their environments. This outreach activity should also include those processes that did not work well – perhaps their peers solved the problem in a more effective manner.**

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