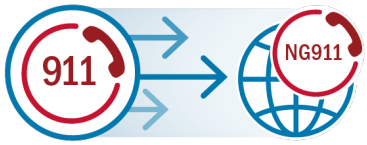
Next Generation 911 Incident-Related Imagery Impacts 101

911 Multimedia Exchange

New technologies are enabling 911 callers to exchange multimedia (e.g., photos, videos, text messages) with 911 centers.[1] Images and videos from incidents, such as property damage or motor vehicle accidents, can improve situational awareness and inform emergency response efforts. There are a multitude of factors 911 officials will need to consider before implementing multimedia capabilities. The influx of data can impact 911 operations and resources. Enhanced technology solutions may be needed to guide information flow, and employees will require training and resources to prepare them for using new technologies. In addition, administrative policies and budgets will need to be reviewed to account for increased technology and staffing costs associated with implementing and maintaining new capabilities (e.g., purchasing equipment or software, hiring additional staff, or collective bargaining agreements). This document provides public safety and emergency communications leadership with considerations for addressing incident-related imagery. Public safety agencies and 911 centers will need to develop plans, policies, and procedures to prepare for new technologies and ensure interoperability across systems.

Technology Evolution



For decades 911 centers relied on voice calls and other Enhanced 911 capabilities to serve the public. As a part of the Next Generation 911 (NG911) transition, these centers are now taking steps to update their systems to receive pictures, download videos, and accept text messages. 911 centers may need to analyze multimedia during voice calls, as well as communicate using nonverbal communication through text messaging. New technologies will also support the receipt of live streaming video and enable two-way video calls from the public.[2] While most 911 centers do not have video capabilities, a few centers are currently piloting live stream videos or picture and video uploads. As these new capabilities are implemented in different parts of the country, the public may expect to have them available in their jurisdiction. Public safety and emergency communications leadership will need to collaborate across agencies to prepare for NG911 and ensure successful implementation of new technologies across systems.

Planning for Imagery in a 911 Center

To plan for incident-related imagery implementation, 911 officials should consider the following four topic areas:

[1] These centers include emergency communications centers, public safety answering points, public safety communications centers, emergency operations centers, and other public service communications centers.
[2] NENA, Non-Voice-Centric Emergency Services, January 2011.

Establish Data Management Policies and Procedures

911 centers will have to process large volumes of data. Some of the data being shared may be sensitive in nature. It is recommended that 911 centers develop policies and procedures to outline requirements for handling and sharing information internally and externally (e.g., vetting data for accuracy, sharing data with first responders, and responding to information requests from media outlets), storing (e.g., retention policies), and safeguarding data.[3]

The sharing of multimedia also introduces privacy considerations. Some of the media sent by 911 callers, whether solicited or unsolicited, may contain images of other individuals that were not directly involved in an incident, or they may send images of victims in distress. 911 officials will need to account for such technology evolution and engage with leadership, staff, and the public to raise awareness about new capabilities, set expectations, and address concerns.

911 centers can consider establishing standard operating procedures (SOPs)/standard operating guidelines (SOGs) to ensure the right information is shared with the right people at the right time.[4] SOPs/SOGs can ensure content is received and reviewed by individuals with the appropriate training. For example, some states have established SOPs/SOGs that outline processes for receiving and transferring data to a sworn officer. Agencies may also consider establishing mechanisms to proactively assess data and share pertinent information with the Incident Commander and other first responders, whether sharing materials in real-time or storing images and videos for first responders to access at their convenience.

Various scenarios will need to be addressed based on data type and intended distribution. Some events may require event notification to 911 center personnel with most of the information going to responders responsible for interpreting it.[5] These processes need to be planned for in coordination with response agencies and providers of the monitoring systems. For example, some 911 centers have designated tactical lines for calls or events requiring additional capabilities, such as mapping resources. This helps keep lines open and allows dispatchers to respond to other calls. With the increase in multimedia sharing, 911 centers may look at ways they can incorporate other software and technologies, such as artificial intelligence (AI) analytics, to reduce the burden of staff and assess videos in real-time.

Assess Training and Educational Requirements

Over the last decade, job descriptions for telecommunicators have changed to address their evolving roles and responsibilities. The exchange of incident-related imagery may require additional and specialized training for telecommunicators. It is recommended that 911 centers consider establishing training requirements for personnel receiving and reviewing data. 911 centers may also consider establishing specific imagery-based protocols and training for personnel conducting

[3] Local data retention policies may differ from state policies. 911 center officials should consider reviewing state and local statutes and data retention policies that govern 911 data. This may include policies and legislation that address misuse of systems and technology (e.g., sending false or obscene images and videos).
[4] When developing SOPs/SOGs, public safety and emergency communications leadership should consider coordinating with neighboring jurisdictions, statewide interoperability coordinators (SWICs), and overarching 911 advisory bodies, and including available standards and best practices.
[5] For example, some data, such as automatic crash notifications and health monitors, may require only analytics and routing in the background, avoiding hands-on management by 911 center personnel.

interactive videos and analyzing photos and live-stream videos. This will ensure staff are properly prepared to analyze data and conduct interactive videos, while ensuring the safety and identity of personnel. For example, it is important to ensure that personnel name badges and locations are obscured during video-based interactions.

Support Staff Wellness

911 telecommunicators are trained to gather valuable information from the public in stressful and challenging circumstances via voice calls, already exposing 911 center personnel to traumatic situations. While multimedia may provide valuable information for dispatching personnel, it can expose staff to graphic images and videos. Consumption of these images can induce additional stress and vicarious trauma on 911 center personnel. These additional elements should be taken into consideration when implementing new capabilities and assessing policies and resources available to support staff wellness. As 911 centers plan for implementing multimedia technologies, officials and managers can engage with employees to assess their needs and concerns. They can also consider innovative use of additional technologies to protect staff (e.g., capabilities to pause incoming imagery or functions to record videos).

Assess Recruitment and Retention Policies

Emerging capabilities will continue to expand the role of 911 center personnel. Additional staff support may be needed to manage multimedia technologies. It is recommended that 911 officials and managers assess staffing needs and recruitment and retention policies, and update as needed, to reflect the evolving roles and responsibilities of dispatchers and other 911 center personnel. 911 centers will need to train current staff, as well as new employees, on how to use these new technologies and address the potential physical and psychological impacts from receiving and reviewing incident-related imagery. Officials and managers will also need to take into consideration the potential impact of imagery on employee retention.

For more information on this and other NG911 initiatives, contact ng911wg@cisa.dhs.gov or visit cisa.gov/safecom/next-generation-911.

Table 1: Resources

Organization	Resource Name	Description and Link
Association of Public-Safety Communications Officials (APCO) - International	APCO ANS 1.115.1-2018: APCO Core Competencies, Operational Factors, and Training for Next Generation Technologies in Public Safety Communications	This document provides guidance for 911 telecommunicators on managing and processing NG911 data. apcointl.org/download/11151-ng911/?wpdmdl=19791
D. Jeremy DeMar	Next Generation 911: Policy Implications of Incident-Related Imagery on the Public Safety Answering Point	This document examines NG911 capabilities and impacts of Incident-Related Imagery (IRI) on 911 center personnel. The document also discusses staffing, training, and stress management considerations for 911 centers. hsdl.org/?view&did=800954
Cybersecurity and Infrastructure Security Agency	National Emergency Communications Plan (NECP)	The NECP is the Nation's strategic plan to strengthen and enhance emergency communications capabilities. cisa.gov/necp
Fairfax County Police Department	2019 Virginia Public Safety Mental Health Pilot Survey	This document highlights findings from Fairfax County's Mental Health Pilot Survey. fcpdnews.wordpress.com/2019/09/24/public-safety-mental-health-survey-illustrates-need-for-suicide-awareness-and-prevention/
National Emergency Number Association (NENA)	NENA Standard on 911 Acute/Traumatic and Chronic Stress Management	This document discusses work-related mental and physical health risks to 911 center personnel and provides best practices for employee stress management programs. ymaws.com/www.nena.org/resource/resmgr/Standards/NENA-STA-002.1-2013_9-1-1_Ac.pdf
NENA	Non-Voice-Centric (NVC) Emergency Services	This document provides suggested requirements for next generation emergency services supporting non-voice communication between users and emergency authorities using real-time text and multimedia. nena.org/page/NG_NonVoiceEmergSvc?&hhsearchterms=%22multimedia%22
Pierce, Heather and Michelle M. Lilly	Duty-related trauma exposure in 911 telecommunicators: Considering the risk for posttraumatic stress	This document examines work-related trauma on 911 telecommunicators. onlinelibrary.wiley.com/doi/abs/10.1002/jts.21687