



# NECP SPOTLIGHT: INCORPORATING TELEMEDICINE TO ENHANCE EMS COMMUNICATIONS



## INTRODUCTION

The time a patient spends in an ambulance with emergency medical technicians (EMTs) and paramedics can be critical to their recovery. As a result, some states are incorporating telemedicine technology, which connects through cellular technology, to provide a secure network to bring doctors and nurses into the ambulance via voice and video. This technology supports EMTs with audio and visual medical treatment plans that can be used during ambulance transport to the hospital. The ability to share information between emergency medical services (EMS) and hospitals can save lives.

The National Emergency Communications Plan (NECP) highlights the need to leverage information sharing technologies to meet mission-critical needs and increase situational awareness for first responders. This spotlight highlights how telemedicine has helped improve communications between EMS and hospitals, enabling better outcomes for patients.

## AN IN-DEPTH LOOK

The faster life-saving measures can be administered, the higher chance for survival and the lower chance of long-term medical impacts. Incorporating telemedicine during ambulance transport allows both the EMS providers and hospitals to share information and provide better overall care for the patient. The use of telemedicine is especially important for rural communities where ambulance rides can last up to 45 minutes or more – time that can now be spent sharing key information. During transport, doctors and nurses can check medications, prepare hospital rooms, or help triage patients. EMS providers in the ambulance are taking vitals, discussing treatment with the doctors and nurses, and providing immediate care. These critical steps allow for faster specialized care for patients. Many localities across the nation are using telemedicine to bolster information sharing and communications coordination to save lives.

In 2022, South Dakota launched a Telemedicine in Motion program to virtually connect EMTs and paramedics with doctors and nurses during patient transport to provide immediate doctor and nurse-led medical care. This program allows participating agencies to install an iPad in the ambulance to deliver the telemedicine technology connecting the hospital's providers to the ambulance team. South Dakota invested \$20 million to help fund audio and video equipment for the ambulances.<sup>1</sup> With the increased connectivity between hospitals and ambulances, situational awareness for first responders increases, and medical care and decision-making can happen immediately for patients in transit.<sup>2</sup>

In 2023, the University of Virginia Health System also launched their own ambulance telemedicine system using a three-year \$1.5 million grant from the Virginia Health Resources & Services Administration to serve seven counties in central Virginia. This ambulance telemedicine service connects EMTs with stroke neurologists and other physicians through voice and video technology. This technology increases communications coordination between EMS and hospitals and allows physicians to provide faster diagnoses, which can drastically decrease the risk of long-term disability or death.

The 2020 global pandemic prompted medical services to use telemedicine more widely for medical care to adhere to social distancing recommendations.<sup>3</sup> While some localities are making great advancements in telemedicine, some rural areas still need the funding and public safety infrastructure to implement telemedicine services in ambulances. An ambulance's telemedicine technology can provide immense value to rural areas that may lack access to primary care and emergency care services.<sup>4</sup> Overall, telemedicine's ability to enhance information sharing, voice and video data, first responder situational awareness, and communications coordination directly aligns with the goals of the NECP.

<sup>1</sup> McKay, Jim. "Telemedicine Gets a Doctor's Eyes in the Ambulance in S.D." *GovTech*, 10 Jan. 2023, <https://www.govtech.com/em/safety/telemedicine-gets-a-doctors-eyes-in-the-ambulance-in-s-d#:~:text=South%20Dakota's%20new%20telemedicine%20in,the%20back%20of%20the%20ambulance>.

<sup>2</sup> South Dakota Department of Health. "Exciting New EMS Initiatives." *EMS Initiatives - SD Dept. of Health*, 2022, [doh.sd.gov/providers/ruralhealth/EMS/initiatives/](https://doh.sd.gov/providers/ruralhealth/EMS/initiatives/).

<sup>3</sup> HIMSS TV. "Emergency Medicine Physicians Get Key Help from Telehealth." *Healthcare IT News*, 13 Apr. 2023, <https://www.healthcareitnews.com/video/emergency-medicine-physicians-get-key-help-telehealth>

<sup>4</sup> Gaiter, Diana, and Woody Sandy. "EMS and Telehealth Interview." 30 May 2023.

## NECP ALIGNMENT

Implementing telemedicine devices in ambulances increases first responder situational awareness by sharing information and video data about patients during transport. In alignment with the NECP, using telemedicine during ambulance transport demonstrates innovation in the following NECP goals: Governance and Leadership, Training, Exercises, and Evaluation, Communications Coordination, and Technology and Infrastructure. This chart outlines how ambulance telemedicine that is being used across the country aligns with the NECP.

NECP Goal	Objective	Objective Description	Real World Example
Goal 1: Governance and Leadership	1.1	Formalize governance through policy, documentation, and adequate funding	In 2014, the City of Houston, Texas, government created the Emergency Telehealth and Navigation program allowing paramedics to provide telehealth services at the site of an incident. EMTs use mobile technology to communicate with emergency doctors and nurses to give immediate care without going to the hospital for non-critical care. This program highlights the importance of formalizing policy to support technology and infrastructure expansion. <sup>5</sup>
Goal 3: Training, Exercises, and Evaluation	3.3	Ensure training addresses information sharing (e.g., voice, video, and data) for multi-agency responses	The University of Virginia Health System is targeting their telehealth for stroke care. This program prioritizes training for paramedics to use a private program to share patient data with stroke neurologists and emergency medicine physicians through video during ambulance transport. The training focuses on integrating information sharing into care plans for community health workers and EMTs. <sup>6</sup>
Goal 4: Communications Coordination	4.4	Strengthen resilience and continuity of communications throughout operations	In mid-2023, the University of Florida Health implemented its first fleet of ambulances for stroke care. EMTs in the ambulance can consult with a stroke neurologist on a video call to prepare medications and the hospital room for immediate care. During this critical time, continuity of communications with doctors and nurses can be maintained to ensure immediate continuous care. <sup>7</sup>
Goal 5: Technology and Infrastructure	5.2	Ensure communications and information sharing systems meet public safety's mission-critical needs	New technologies such as 5G, virtual reality, augmented reality, and the Internet of Things allow more information such as a patient's vitals and current status to be communicated to hospitals quickly. This new technology and infrastructure increase collaboration between EMTs and hospitals to meet public safety's mission-critical needs, which is particularly important in rural areas. <sup>8</sup>

## RESOURCES

Telemedicine technology prioritizes information sharing, helps support rural communities, increases first responder situational awareness, and saves lives.

For more information about NECP emergency communications capabilities and resources, visit: [www.cisa.gov/necp](http://www.cisa.gov/necp). Want to share your organization's success and alignment to the NECP? Email us at [necp@cisa.dhs.gov](mailto:necp@cisa.dhs.gov).

<sup>5</sup> Houston Tx Government. "City of Houston: ETHAN Telehealth Program Supported By the 1115 Waiver." *Houston TX Government*, 10.1.2020-ETHAN.pdf (houstontx.gov). Accessed 14 June 2023.

<sup>6</sup> Vaidya, Anuja. "UVA Health Strikes Telestroke Partnership in Central Virginia." *mHealth Intelligence*, 14 Feb. 2023, <https://mhealthintelligence.com/news/uva-health-strikes-telestroke-partnership-in-central-virginia>.

<sup>7</sup> Taylor, Todd. "UF Health to Launch Florida's First Fleet of Specialized Ambulances to Improve Stroke Care." *University of Florida Health*, 16 Feb. 2023, [https://ufhealth.org/news/2023/uf-health-launch-florida-s-first-fleet-specialized-ambulances-improve-stroke-care#:~:text=Close\\_UF%20Health%20to%20launch%20Florida's%20first%20fleet,ambulances%20to%20improve%20stroke%20care&text=To%20improve%20stroke%20outcomes%20for,to%20speed%20diagnosis%20and%20treatment](https://ufhealth.org/news/2023/uf-health-launch-florida-s-first-fleet-specialized-ambulances-improve-stroke-care#:~:text=Close_UF%20Health%20to%20launch%20Florida's%20first%20fleet,ambulances%20to%20improve%20stroke%20care&text=To%20improve%20stroke%20outcomes%20for,to%20speed%20diagnosis%20and%20treatment).

<sup>8</sup> "Remote Emergency Care with IOT & 5G-Connected Ambulances." *Verizon Enterprise*, 20 Sept. 2021, <https://www.verizon.com/business/resources/articles/s/transforming-remote-emergency-care-with-iot-and-5g/>.