EMS 1

pulsara®

10 THINGS YOU NEED TO KNOW TO

OPTIMIZE YOUR EMS OPERATIONS

Prepare your agency to better provide timely and appropriate response with the information and operational strategies in this guide.

Contents

Editor's Note

While it's critical that EMS providers stay on top of the latest clinical skills for saving lives, it's also important to look for ways to improve overall operations.

This eBook provides 10 things you need to know about key operational issues, including interagency cooperation and the expanding role of telehealth in EMS, as well as lessons learned from the COVID-19 pandemic. We also explore how elements in your EMS station can help prepare providers to deliver the best patient care possible, as well as promote their own safety and well-being.

Use the knowledge and strategies in this guide to better understand these issues, then share it with your colleagues. Discuss your policies and procedures, as well as your infrastructure, and consider how you can implement changes and monitor improvements.

– Kerri Hatt, EMS1.com Editor-in-Chief

About the Authors

Michael Fraley, BS, BA, NRP, has over 25 years of experience in EMS in a wide range of roles, including flight paramedic, EMS coordinator, service director and educator. Fraley began his career in EMS while earning a bachelor's degree at Texas A&M University. He also earned a BA in business administration from Lakeland College. When not working as a paramedic or the coordinator of a regional trauma advisory council, Michael serves as a public safety diver and SCUBA instructor in northern Wisconsin.

Sarah Calams previously served as associate editor of EMS1 and Lexipol. In addition to her regular editing duties, Sarah delved deep into the people and issues that make up the EMS industry to bring insights and lessons learned to EMS providers everywhere. Sarah graduated with a bachelor's degree in news/editorial journalism at the University of North Texas in Denton, Texas.

Marianne Meyers, BS, is a third-year medical student at the University of Washington School of Medicine interested in pursuing emergency medicine. Previously, she was a member of the Santa Clara University collegiate EMS squad where she received her B.S. in Public Health Science. Additionally, she has worked with the King County Public Health Department in Seattle, Washington, studying EMT naloxone administration.

Rachel Zoch is a branded content project lead for Lexipol, where she has written about public safety products and issues important to police, fire, EMS and corrections since 2015. A University of Texas journalism graduate, she previously worked the copy desk of a local daily newspaper and served as managing editor of a trade magazine for the multifamily housing industry.

About the Sponsor

Pulsara's communication platform is easy to adopt and simple to use, and connects EMS to the hospital with a tap, overlaying or replacing archaic technologies that slow critical care coordination. Our platform seamlessly coordinates communication between the field (EMTs and paramedics) and between hospital staff (RNs, MDs, techs, etc.) to improve the treatment times for critical care patients. Pulsara's feature-rich mobile platform uses video chat, audio clips, instant messages, images, data and benchmarks to help teams treat their patients faster.

10 THINGS YOU NEED TO KNOW TO INCREASE INTERAGENCY COOPERATION AND COLLABORATION

Work closely with local partners to provide better patient care, reduce response times and improve communication and quality

By Michael Fraley

It is probably safe to say that as long as humans have been sharing space with each other, there has always been some level of conflict. Struggles between coworkers can come from competition, innovation or a desire for improvement. Handled incorrectly, though, that conflict can also lead to inefficiencies, stagnation and harm to all parties involved.

But when public safety agencies work together successfully, they reap many rewards:

- Improved safety
- Greater efficiency
- Better public image
- Increased funding
- More successful recruitment and retention

The best part of moving toward more cooperative relationships with public safety partners is that the initial efforts can be small, local and inexpensive. You do not need big, extensively planned, budget-busting initiatives to make a difference and start changing the culture.

It is important to highlight the difference between the words *cooperation* and *collaboration*. The terms are often used interchangeably, but there is a difference:

- Lexico.com defines *cooperation* as "the process of working together to the same end."
- On the other hand, the Government Accountability Office defines *interagency collaboration* as "any joint activity by two or more organizations that is intended to produce more public value than could be produced when the organizations act alone."

You might think of successful interagency cooperation as simply getting along on scene and completing the immediate task without conflict. Crews know they should get along, and they do so case by case, without making the evening news for getting in fights or being arrested on scene.

Collaboration, though, reaches further and indicates that agencies are working together to develop plans and guidelines for decision-making

that will allow a swifter response that works well for everyone involved.

Whether your agency is just beginning to build better on-scene cooperation, or if you are ready to work toward a deeper level of collaboration, these 10 tips can help you along the way.

1 DEVELOP RELATIONSHIPS

A big but easily overlooked step is to take time to meet and get to know the people you will be working with before you need to work with them. There is a saying that goes something like, "The battlefield is no place for handshakes and business cards."

Getting the pleasantries out of the way before you come together to respond to an incident establishes a level of comfort with each other and allows responders and leaders to begin the work of their roles without having to establish who's who and who's doing what. Even just knowing how to identify officers or ranking personnel in another department will help you better integrate into the incident command system as you arrive on scene.

2 KNOW WHAT YOUR PARTNERS DO

The next logical step after developing relationships with key personnel from cooperating agencies is to become familiar with their side of the response. It can be as simple as understanding the role they play, or as complex as knowing the issues they face as a department. You might find that their challenges are similar to yours, and that could be a good place to begin collaborative efforts. Knowing how a department works and the resources or capabilities they have will make it easier to develop and implement plans.

3 GET IT IN WRITING

Any collaborative agreements or other plans to promote cooperation must be written and shared among agencies so that they can be included as attachments to policies and plans. These written documents can then be used to train members within the departments and help avoid miscommunications in the future. They are also a good way to preserve the institutional knowledge that is often lost when leaders move to other jobs or retire.

4 BUILD A CULTURE OF COOPERATION

Looking inside your own department is also an important step to improving cooperation. In order to be successful, your agency must have a culture of cooperation from top to bottom.

Unfortunately, we can all think of departments or agencies in our region that just never seem to get along with others. Expectations must be set by top administration. Those leaders must understand the benefits of cooperation and collaboration, and then set the example in both words and actions to make it clear that interagency cooperation is integral to every operation.

Cooperation and collaboration, especially between EMS agencies and hospitals, are critical to improving response times and providing safe, efficient and effective care.

5 TRAIN TOGETHER

Conducting training with other agencies has far-reaching benefits and is nothing new to public safety. Departments that train together do more than just go through the motions of procedures. They test communication systems, standardize equipment and formalize relationships.

6 PRACTICE REGULARLY

Don't wait for "the big one" to expect interagency cooperation to work. It must be practiced on the everyday, run-of-the-mill motor vehicle collisions and chest pain calls to become part of the culture and be second nature when it is needed most.

This applies equally to any software applications you or your partners might be using to promote regional communication or situational awareness.

Programs are available to make it easier to communicate about the availability of regional resources, including:

- Hospital beds
- Cardiac catheterization labs
- Trauma center status
- EMS helicopters

These tools must be incorporated into daily practice so that your agency's staff will be familiar with the products and how to use them.

7 COLLABORATE FOR QUALITY IMPROVEMENT

Agencies that use quality improvement programs to better understand and enhance their operations will also see the benefit of collaborating on case reviews.

Hospitals moved from department-centric to patient-centric quality improvement years ago through the use of multi-disciplinary quality committees. The same can be done in public safety by bringing all agencies together to review a case or evaluate a process. After action reviews are one way to do this.

It's a good idea to develop quality improvement steering committees and case review processes that include representation from all types and levels of providers that respond to emergencies in your municipality or region.

8 SHARE IDEAS THROUGH ADVISORY BOARD REPRESENTATION

Bringing representatives from multiple agencies together to serve on advisory councils or oversight boards is another effective way to foster collaboration. Through these committees, participants get a better understanding of how other services function and how collaborative efforts can help each organization reach similar goals.

9 SHARE RESOURCE PROCUREMENT

Providing physical resources, such as similar or standardized supplies, equipment and communication systems, makes it easier for responders to cooperate during emergencies. Purchasing these assets together may also make financial sense for getting group discounts or customizing orders.

10 WORK TOGETHER, PLAY TOGETHER

Last but certainly not least, providing opportunities to celebrate, socialize and relax together builds strong relationships that carry over into the field. Use agency-sanctioned and informal social gatherings to help service members get to know each other in a more relaxed and enjoyable setting.

For example, cardiac arrest survivor ceremonies bring law enforcement, first responders, dispatch and EMS personnel together to celebrate lives saved while

highlighting how multiple disciplines can work together to meet a common goal.

PROMOTE EMS AND HOSPITAL COOPERATION

Special mention must be given to the cooperation required between EMS agencies and the hospitals that receive their patients. To give patients the most efficient, effective and safe care possible, hospitals and EMS must cooperate in several operational areas, including:

- Medical direction
- Quality improvement
- Education and training
- Specialty clinical team activation (trauma, STEMI, stroke, etc.)
- Patient handoff

Hospital and EMS collaboration should be taking place many times every day – not only in terms of direct patient care, but also through the intentional development of systems of care and communication.

We all have a role to play in practicing cooperation and promoting collaboration between our organizations in order to save lives, protect property and make our communities better places to live. No matter which public safety agency you respond with or what kind of healthcare provider you are, cooperation and collaboration are critical for providing safe, efficient and effective care. [1]

10 THINGS EMS PROVIDERS NEED TO KNOW ABOUT TELEHEALTH

Find out how telehealth applications can help expand the role of community paramedics and mobile integrated health

By Sarah Calams

In light of the COVID-19 pandemic, healthcare and EMS providers have found themselves relying on technology more than ever before.

For instance, telehealth has been able to simplify and accelerate patient care via telecommunication technologies. This capability not only allows providers to reduce their exposure and preserve PPE, but also leads to better, more informed treatment decisions.

Seema Verma, an administrator for the Centers for Medicare and Medicaid Services, spoke in 2020 about the use of telehealth in response to COVID-19.

"I think the genie's out of the bottle on this one," Verma said. "I think it's fair to say that the advent of telehealth has been just completely accelerated, that it's taken this crisis to push us to a new frontier, but there's absolutely no going back."

To better understand how telehealth applications can help expand the reach of out-of-hospital care to save more lives, here are 10 things every EMS provider needs to know about telehealth.

1 UNDERSTAND THE DIFFERENCE BETWEEN TELEHEALTH AND TELEMEDICINE

According to the American Telemedicine Association, telemedicine is the "use of medical information exchanged from one site to another via electronic communications to improve a patient's clinical health status."

Meanwhile, the Agency for Healthcare Research and Quality defines telehealth as the "use of telecommunication technologies to deliver health-related services and information that supports patient care, administrative activities and health education."

In EMS, utilizing telemedicine technology typically translates to having a large, standalone piece of equipment with a video camera and other related items in one area of the ambulance. However, telemedicine can also be done via a patient's hospital room.

"The example would be stroke telemedicine, where we roll the carts with video equipment into the patient's room, because we're a rural hospital. And then you have the specialist, the neurologist, who's in a larger hospital, helping with the neuro exam," said Kris Kaull, chief marketing officer at Pulsara, a healthcare communication and telehealth platform, and co-founder of EMS1.com.

Now, with telehealth, providers can have the technology that is found in an ambulance in their back pocket – on their smartphone device.

"You can get a hold of a specialist that may be off that day and at home or in the office, because they can also use that same technology," Kaull said.

2 USING TELEHEALTH APPLICATIONS DOESN'T MEAN YOU DON'T KNOW HOW TO ASSESS A PATIENT

Instead of looking at telehealth applications from a "Mother, may I?" standpoint, Kaull says every EMS provider should look at it as getting additional information to back up their primary assessment or receive more specialized medical knowledge.

"In EMS, the question was, 'Why would we need to speak to the physician, expert, medical director or whoever is at the hospital for a 'Mother, may I?'" Kaull said.

This kind of mentality toward telehealth misses the point, he adds.

"If you look at other positions, instead of looking at EMS, any time there's a situation that isn't black and white, they reach out to get that extra piece of advice from others," he said.

3 TELEHEALTH BENEFITS EMS PROVIDERS

Austin-Travis County EMS in central Texas uses Pulsara to improve communication and keep crews safe while responding to the COVID-19 pandemic. As part of their new protocol, any time someone calls 911, a dispatcher asks the caller additional questions like:

- Have you had the flu, or do you have flu-like symptoms?
- Have you traveled internationally?
- Do you have a fever?

If the caller answers "yes" to any or all of these questions, an ambulance with extra PPE and testing materials is sent to the caller's location.

"When a crew gets there, it's one thing if they're a critical patient – that's business as usual – but if they're not, then EMS can actually do video conferencing with the medical director in their emergency operations center and walk through the case," Kaull said.

This can lead to one of three outcomes:

- Video conferencing with the public health specialist
- Following up to check on the patient each day for a week to 14 days
- Transport to a decontamination or isolation area

The third scenario, Kaull says, would mean bringing the patient to the ER, but ensuring that the hospital is given a heads-up about the patient and their initial assessment.

"It can just be, 'Here's the patient, their name, their photo, and they could be potential COVID-positive,' so the hospital can get them preregistered, get a room available and then take any precautions," he said.

4 TELEHEALTH PARTICULARLY BENEFITS EMS PROVIDERS IN RURAL AREAS

In rural areas, providers typically have fewer resources and less exposure to critical patients.

"The amount of times that I see a heart attack patient in a rural area versus how many times I see a heart attack in an urban area is lower," Kaull said, "but the amount of time I'm with that patient could be 30 minutes to five hours."

Telehealth applications, Kaull says, level the playing field for rural EMS providers:

"They'll have additional resources at their fingertips as they're working on a call."

5 TELEHEALTH BENEFITS PATIENTS

COVID-19 has placed an increased demand on healthcare and EMS providers to remotely assess and treat patients, but this isn't a negative change. On the contrary, use of telehealth applications has kept exposures between patients and providers to a minimum.

"You don't want that patient to come in and see a doctor unnecessarily," Kaull said. "There is this efficiency, opportunity and technology. And then there's this scope of practice and the need by medics to be thinking outside of, 'I can fix it. It's a bleed; I'll stop a bleed,' or, 'They're not breathing; I can breathe for them.' It's more about expanding clinics and medicine."

6 TELEHEALTH CAN AID IN TIME-SENSITIVE CASES LIKE TRAUMA, STEMI AND STROKE

When time is especially critical, telehealth applications can shave precious seconds off the clock. For example, Kaull reflects on a past patient he transported to the hospital after a car crash:

"They looked fine, but then I showed the hospital pictures of the vehicle, and then all of a sudden they're like, 'No, we need to do a belly scan and a head scan."

After sharing the photo, it changed the way the hospital thought about the patient.

"This person had stable vital signs and didn't lose consciousness," Kaull said, "but there is a potential change in perspective when you see the amount of force and power of the car crash. There's something I may be missing."

Additionally, Kaull also looked back on a Pulsara case in Vancouver, Washington. The patient was having a heart attack, and EMS shared the ECG. A physician, who received a STEMI alert from the Pulsara app, as well as the ECG from the EMS crew, sent a note to "get to the hospital now."

"When you're bringing the physicians, nurses or critical care team out there with you, then they have that sudden heightened sense of urgency as well, because they get to see what you're seeing," he said.

EMS agencies can simplify and accelerate patient care via telecommunication technologies. This telehealth capability not only allows providers to reduce their exposure to infectious diseases like COVID-19, it also leads to better, more informed treatment decisions.

7 NO COMPLEX INFRASTRUCTURE IS NEEDED TO MAKE TELEHEALTH WORK RELIABLY

If you have internet, you can access your network with a phone, tablet or computer. The connection is smooth, secure and HIPAA-compliant.

"The hardware itself really is whatever everybody already has in their office or in their back pocket," Kaull said.

8 DO YOUR RESEARCH AND FIND OUT WHAT PLATFORMS ARE AVAILABLE AND BEST FOR YOUR AGENCY

Although telehealth can work on most any hardware, you need to find the applications that best meet your agency's needs and goals. For example, Pulsara allows communication outside of just one organization.

"There are a lot of other companies that might do HIPAA-compliant messaging and texting securely for their patient, and they do it well," Kaull said. "However, they only do it within their hospital system."

Pulsara, he says, crosses organizations and can be done simply and quickly, and as a case evolves, the app allows you to add people to the conversation.

"It's intuitive and available, with the ability to use whatever hardware you have with these smartphones connected to cell service or WiFi, and then a platform that allows you to connect securely," Kaull said. "And you can communicate how you want, whether that's texting, images, video, alerts or messaging."

9 YOU CAN DO TELEHEALTH AND STILL MAINTAIN HIPAA COMPLIANCE

Pulsara, which is encrypted at both ends, is HIPAA-compliant. For example, EMS personnel who respond to a car crash may take photos of the scene and the injuries using the Pulsara app, and then send those images to the hospital with the patient alert, requesting the trauma team.

The hospital then alerts all the hospital caregivers that are part of that trauma team on their smart devices. However, the data and photos are never stored on a user's personal device. Everything is stored within Pulsara, making the platform completely compliant with privacy regulations.

"It was all done within a HIPAA-compliant, securely encrypted app," said Kaull.

10 IF YOU NEED FINANCIAL HELP, THERE IS FUNDING AVAILABLE FOR TELEHEALTH

The Coronavirus Aid, Relief and Economic Security (CARES) Act, which was passed by Congress and signed into law on March 27, 2020, included a $200 million COVID-19 Telehealth Program. Providers receiving those funds can use them to purchase technology, such as:

- Telecommunication and broadband connectivity services (i.e., voice services for providers or patients)
- Information systems (i.e., internet connectivity services, remote patient monitoring platforms and patient-reported outcome platforms)
- Services and devices that are used to provide telehealth services (i.e., tablets, smartphones or connected devices to receive connected care services at home)

In December 2020, Congress passed a new stimulus package with $250 million allocated for telehealth in a similar program for 2021. Check EMS1 for the latest updates on these programs and to learn about funding determination, eligibility and approval. [1]

10 THINGS WE'VE LEARNED FROM THE COVID-19 PANDEMIC

Preparation, vigilance and taking care of your mental health will be key strategies as we move forward

By Marianne Meyers

As 2021 begins, COVID-19 vaccines have recently been approved, and it appears that the beginning of the pandemic's end is in sight. That said, we are still experiencing large spikes throughout the country, and hospitals and EMS systems are under immense strain.

We aren't quite on the other side, but we can now see the light at the end of the tunnel.
Here are 10 things we've learned from the pandemic that can help improve other areas of EMS response:

1 TELEMEDICINE IS THE FUTURE

Telemedicine was underutilized prior to COVID-19, and it is almost certain to become more common in the future. During the pandemic, physicians needed a way to continue to see patients while minimizing the risks of exposure to COVID-19. Telemedicine quickly became the clear solution. Virtual appointments allowed patients to get advice from physicians without exposing everyone in the waiting room.

Telemedicine has historically been underutilized in EMS as well, and it's something we should take advantage of in the future. Companies like Pulsara have developed applications that allow EMS providers and patients to communicate directly with hospitals and physicians, helping them develop treatment plans and provide the best care for the patient.

2 PPE WORKS

As first responders, we are at higher risk of infection because of the nature of our work. But with the proper protection, we can help prevent transmission. One study from Seattle[1] showed that less than 0.5% of EMS providers tested positive for COVID-19 two weeks after exposure to a patient who'd been confirmed as COVID-positive. Other studies have shown that N95 respirators adequately protect the wearer[2] against viral particles.

Proper PPE will help protect you from the virus. At minimum, an N95 mask and eye protection should be worn with every suspected COVID patient.

3 MASKS AND PHYSICAL DISTANCING ARE KEY

Wearing masks and staying socially distanced from one another helps prevent the spread of the virus. Several studies have shown that there is a significant risk reduction of COVID-19 infection with even just a cloth mask or neck gaiter. Along with physical distancing, masks help cut down on virus transmission.

Telemedicine, adopted by many EMS agencies during the pandemic, is a strategy that can help improve other areas of EMS response.

4 MANY PEOPLE ARE STILL SKEPTICS

Many people still deny that COVID-19 is a problem, or even real to begin with. Many refuse to change their daily routine, wear masks or keep their distance. Many more are skeptical of the new vaccines.

As healthcare providers, we understand the science behind the recommendations and have seen firsthand how devastating this virus can be. Our job should not only be to help those in need, but to educate those about what we're facing and what tools we have to combat it.

---

[1] Murphy D et al. Occupational exposures and programmatic response to COVID-19 pandemic: an emergency medical services experience. *Emergency Medicine Journal: EMJ,* 2020. https://emj.bmj.com/content/37/11/707
[2] Lindsley W et al. Efficacy of face masks, neck gaiters and face shields for reducing the expulsion of simulated cough-generated aerosols. *Aerosol Science and Technology,* 2020. https://www.medrxiv.org/content/10.1101/2020.10.05.20207241v3

Answering questions and explaining practices to nonmedical personnel with patience and kindness can help turn skeptics into believers armed with information they can share with their friends and family.

5 THERE IS NO SINGLE, OBVIOUS COVID-19 PRESENTATION

Some COVID-19 presentations may be obvious, but others may not. The classic symptoms of fever, cough and shortness of breath may not be present in every patient. Other symptoms may be predominant. Headache, diarrhea, vomiting, body aches, fatigue, loss of taste or smell and congestion are all possible symptoms of the virus.

Whether or not it seems likely that you or someone you know has contracted COVID-19, don't rule it out based only on symptoms. It's still important to ask about possible sick contacts, travel and other potential risk factors for exposure.

6 TAKE CARE OF YOURSELF AND YOUR COLLEAGUES

First responders have always had stressful jobs, but now their jobs have become even more difficult. This is a stressful and scary time, especially for those in healthcare who are putting their lives – and their families' health – at risk.

It's important to be aware of the toll stress can take on your well-being. Take the time to take care of yourself and your mental health. Talk to others about how you're feeling. Go for a walk, read a book, debrief with peers about hard cases you've faced together and try to do something every day that makes you happy.

7 WE NEED TO PREPARE FOR THE NEXT PANDEMIC

COVID-19 showed us many areas we were not prepared to handle a pandemic. The lack of sufficient equipment is just one example. We all experienced feelings of fear and frustration when we realized that single-use masks were going to have to be reused – and worse, that there may not even be enough protective equipment to go around.

This shouldn't have happened. Our next step should be to learn from the experience. Hospitals, states and healthcare organizations – including EMS agencies – need to prioritize preparing and stockpiling protective equipment for the next big illness. The next pandemic isn't an if but a when, and we can use the COVID-19 pandemic as a learning experience to improve our response to the next one.

8 NEW VACCINE TECHNOLOGY HAS PROMISING POTENTIAL

Companies have managed to develop a COVID-19 vaccine in less than a year, shattering all previous vaccine timelines.

Traditional methods for developing vaccines use live or dead virus DNA to help the body recognize and attack the virus. These vaccines take longer to develop, and some carry the risk of infecting the patient with the bug they were attempting to protect them from.

Taking a brief trip back to college biology (sorry): DNA is translated into mRNA, then transcribed into proteins. In the case of the vaccine, these proteins are antigens that the body's immune cells react to.

Compared to traditional vaccines, mRNA activates more of the body's immune response and can be manufactured faster. The new COVID-19 vaccines mark the first time mRNA vaccines have been used in a large-scale setting, and based on their trials, they are about to be a huge success. This means we will probably see more mRNA-based vaccines and therapies in the future.

9 DON'T BECOME COMPLACENT

Everyone is tired of dealing with COVID-19 – but that doesn't mean we can let our guard down. It is incredibly tempting to see friends and family outside your household, skip the mask and return to more normal living.

Unfortunately, we can't go back to the way things were just yet. Take the time to gear up correctly – every time – and think about every action you perform and how you may be putting yourself and others at risk.

10 HUMANS ARE INHERENTLY KIND AND RESILIENT

Throughout the year, there have been countless stories of courage, kindness and resilience from people around the world. Everyone has been stepping up to help their neighbors and do what they can to support healthcare workers. [1]

10 things you need to consider when it comes to YOUR EMS STATION

Be sure to include ample space for sleep, fitness and other critical activities whether you are making improvements or building a new facility

By Rachel Zoch

An EMS station needs to provide the comforts of home as well as the tools for work, from restful sleeping quarters to office space and equipment storage. Energy efficiency and safety should also be top of mind, whether you are making improvements to your current station or building a new facility.

To find out more about the elements needed for a modern station, EMS1 spoke with Austin-Travis County (Texas) EMS Chief Ernesto Rodriguez, who recently oversaw the design and construction of a new EMS station for his agency.

Here are 10 things to consider when upgrading your existing station or planning a new one:

1 PROVIDE SPACES TO PROMOTE REST WITH INDIVIDUAL DORMS, SAFE SLEEP ROOM

Traditionally, stations have had communal dormitories where everyone sleeps. Given different sleep schedules and habits – and snoring – those days are gone, and individual rooms are a must, says Rodriguez. This allows each crew member more control over their environment for better sleep.

"One of the things that oftentimes happens is the war of the air conditioner," he said, "so we're putting in smaller, independent heating and cooling units. That way, individuals can come in and adjust their temperature so they can sleep more comfortably."

This also saves money because those units can be turned off when not in use.

Quality sleep and rest are a challenge for any EMS agency, and poor sleep can be a safety hazard. To address this, Austin EMS has also added "safe sleep" rooms to several of its stations.

"Sometimes a person may get up at the end of their shift and decide that they're not ready to drive home and would prefer to sleep some more," said Rodriguez. "That's hard to do in a busy working station, so we've supplied several of our stations with sleep rooms. We provide a bed, linens and separate lighting for that space, and we painted them a blue color to make it a little bit more relaxing."

The comforts of home and tools for work are must-haves for EMS stations, but looking at energy efficiency and provider safety when making infrastructure decisions can improve agency readiness and performance.

2 LOOK FOR ENERGY EFFICIENCY WHEN CHOOSING APPLIANCES

The city of Austin requires new construction to meet certain environmental targets under the LEED green building standards. Check with the planning authorities in your area to make sure you choose wiring, appliances and other fixtures that will comply with local regulations.

"We have to buy appliances that are compliant with LEED requirements, said Rodriguez, "so we're using, for example, washers that use less water and don't require as much detergent. We're using dryers that are more economical on electricity, or that use natural gas."

Safety is also a critical factor. Rodriguez says their newest station features independent circuits that are easy to find in the circuit box so they can isolate each space as needed. Like the sleeping quarters, the utility area has its own heating and cooling so they can turn off the climate control for that space when it's not in use, or isolate the area during maintenance.

3 CARVE OUT SPECIFIC SPACES FOR SPECIFIC USES

Of course any EMS station needs adequate sleeping quarters, bathroom facilities and locker/changing rooms for both men and women – but consider what other activities happen at your station that you may not currently have a specific place for.

"What happens when someone knocks on your door and they've been involved in an accident or something, and they're all bloody and you've got to take care of them?" said Rodriguez.

Their newest station includes a small examination room right inside the front door. With this triage room, medics can assess and even treat a walk-in patient in a dedicated space separate from the living quarters, providing privacy for both the patient and the crew on duty.

You also need space to take care of business, such as filing medical records, studying or training. A dedicated area can also be useful during shift change, adds Rodriguez, because that involves a unique set of activities while regular station business has to go on.

"When our personnel are coming in and checking their medications and their logs, going through the inventory and all of that, they've got a space where they can put their things," he said. "They've got a space where they can talk as loudly as necessary or do whatever they need to do, and it doesn't disturb anybody else who's in the station."

4 RECONSIDER YOUR ALARMS AND LIGHTING, ESPECIALLY AT NIGHT

There's nothing like having a nice long evening without a call, then all of a sudden getting scared to death by your alarm system, says Rodriguez. So Austin-Travis County EMS is considering alarms that start at a low volume that increases gradually.

Their newest station features an alarm that provides audiovisual messaging from dispatch, giving verbal instructions as well as a screen readout. The text on the screens is red to avoid sudden, harsh light, and that same effect is applied in the engine bay at night to work with, not against, the responders' vision as they adjust from darkness to light.

"As you get into your vehicle and exit the building into the dark, your eyesight is better adjusted," said Rodriguez. "You're not blinded as you're pulling out of the station, which reduces the chances of not seeing something and running over someone or something because your eyesight isn't adjusted to the darkness."

5 MAKE PHYSICAL FITNESS A PRIORITY

Another special space your station should include is a place for providers to exercise. Consider the specific workouts and equipment your providers are most likely to need and use. Where a firefighter might need to lift heavy weights, an EMS provider may be better served by a rowing machine, says Rodriguez.

"All of our new stations have space for some workout equipment," he said. "Our latest station has a separate workout area that's equipped with the gear that you would need. It has a glass overhead garage door on one side of it that opens onto artificial turf, so you can walk in and out of the workout space and still be in a workout zone inside or outside, depending on what kind of workout you want to do and the temperature."

This extra step brings fresh air and sunshine, which have been linked to health benefits and stress reduction, right into the crew quarters to help boost wellness and morale.

6 PLAN AHEAD FOR YOUR POWER NEEDS

Be sure to include sufficient wiring and docking stations to handle all the equipment and devices your crews need, both now and in the future. Take an inventory of your current equipment and personnel to account for the number of USB connections and power sources you'll need for smartphones, tablets, etc., and include these outlets in your dormitories, as well as office workstations and storage areas.

But your power needs tomorrow will likely be greater than your power needs today. Plan ahead and include infrastructure that can accommodate growth.

"We've got additional wiring if we need to expand any of those spaces," said Rodriguez. "We have easy access to the wiring so that we can plug in additional wires and expand our network if we need to."

It's also important to build in backups and fail-safes, like solar panels or a backup generator, and to test them regularly.

"Each of our stations is equipped with a generator. As soon as it senses that there's a power loss, the generator comes on and provides power to the station," he said. "They run on separate fuel, and we test them every month. If we had a major power loss, our emergency stations would still be functional."

7 DESIGN AMBULANCE BAY DOORS FOR SAFETY AND SPEED

With recent advances in garage door technology, there are plenty of options to help boost speed and safety, from smart sensors to automatic doors that sync to alarms.

Austin-Travis County EMS doesn't use automatic doors or sensors, but they did make sure to place control buttons in each doorway from the station into the apparatus bay for easy access.

In its newer stations, the agency installed accordion-fold doors that open laterally when activated by a crew member. The door is suspended on a rail system along the top of the doorway, with the motor on the side.

The newest Austin-Travis County Fire & EMS station includes a well-ventilated ambulance bay with visibility enhancements and a vehicle exhaust removal system. (Austin-Travis County EMS)

Austin-Travis County EMS Chief Ernesto Rodriguez

Because pulling to the side takes less energy than pulling an overhead door up against gravity, Rodriguez says they expect the motors to last longer.

Another benefit of the side-folding door is that there is nothing overhead that might fall on a person or ambulance – or block the doorway and cause a delay.

The agency also added elements to enhance visibility and safety for ambulance ingress and egress.

"One of the problems that we've had in the past is some of our medics backing into a partially open overhead door. When you're looking at your mirror into the opening of a station in daylight, a lot of times all you see is a just a dark hole that you're trying to back into," said Rodriguez. "So we've lined all of our doors with high-visibility tape so that when your back-up lights come on, that entire opening looks like an aircraft landing zone and you can see all the edges of it."

8 VENTILATE THE AMBULANCE BAY

It's no secret that vehicle exhaust can leave some pretty nasty particulates in your ambulance bay. Be sure to ventilate these areas in each station to protect the health of your providers.

Leaving the door open isn't enough, and it's a safety risk to leave your station unsecured. But there are a number of exhaust removal systems available to help pump out the particulates.

Austin-Travis County uses a system with a hose hooked up to each vehicle using a magnetized connection. The system draws out the exhaust with fans and pumps it through a filter before releasing it out into the environment.

"That has been probably the best thing that we've done," said Rodriguez, "because all our vehicles are diesel, and diesel puts out stuff that coats the walls and everything."

9 BUILD IN DISINFECTION CAPABILITIES

COVID-19 has made infection prevention more important than ever. What are you doing to sanitize your facilities? EMS agencies across the country are applying a number of strategies, from frequent cleaning with appropriate disinfectants to UV appliances or HVAC filtering systems.

"We've had the capability of disinfecting stations with portable equipment for quite a few years, but now we're looking at systems that actually are built into the stations," said Rodriguez. "We really never thought about having to have passive disinfection systems installed in stations before, but now the pandemic has opened our eyes to the way that diseases spread and about different tools that we can use."

UV has become a popular approach, and the new Austin-Travis County EMS station is equipped with a UV system that filters and cleans the air. Rodriguez says the agency is considering additional options, both to retrofit older stations and to build into new stations.

10 PROVIDE SECURE DRUG STORAGE & INVENTORY MANAGEMENT

Inventory management, especially when it comes to controlled substances like narcotics, is a critical function for any EMS facility. It's important to provide secure storage for drugs and equipment, as well as a way to track their use. Available solutions range from a locked closet with a paper log to a vending machine-style system to barcodes or RFID tags.

Austin-Travis County EMS has been using a paper log and the honor system, says Rodriguez, but he admits there are imperfections in the manual system, especially when medics rushing to a call might not have time to log the supplies they grab.

The agency has been testing an RFID system – radio-frequency identification tags – to help with inventory management. RFID tags or smart labels are affixed to each item at the central warehouse, logged in a database and captured by a reader via radio waves (as opposed to scanned like a barcode) when they are sent to stations, and read again when they are pulled for use on an ambulance.

"We're trying to make it as automatic as possible so that it requires the least amount of human interface," said Rodriguez, "and so it will help us track everything."

A LITTLE SOMETHING EXTRA

Beyond the key elements listed above, you can add a little something extra to make the station more homey if your budget allows. Rodriguez credits the agency's leadership with making sure crews have a say in station design.

"Our division chief, Wesley Hopkins, is passionate about station design and spends tons of time listening to our medics to get input," he said. "He is at every station build to directly oversee implementation of these cool ideas."

For example, one of the Austin-Travis County stations features an outdoor gas grill so crew members can cook outside when the weather is pleasant.

"That's just a little added feature that didn't cost too much," said Rodriguez. "It's not real fancy, but it's functional."

Your EMS providers likely spend most of their waking hours (and many sleeping hours, too!) at the station. Providing a comfortable, functional space is an important way to equip them to better serve the community. 1

All images in this article courtesy of Austin-Travis County EMS.

pulsara®

10 Things Your Telehealth and Communication Solution Should Do for You

10 Provide a secure, simple, and HIPAA-compliant way to communicate.

09 Be easily fundable. Our team created a funding guide that helps you find and secure funding for COVID-19 recovery.

08 Ensure EMS is a true part of every patient case from start to finish, even if you change destinations en route or hand off to other EMS crews.

07 Reduce burnout by making your job easier through streamlined workflows and communications.

06 Enable your teams to operate in an expanded role including Community Paramedicine and Mobile Integrated Health.

05 Connect you to ANY clinician, anywhere, at any time, whether you're working for a rural or urban EMS agency.

04 Save your EMS agency money by not wasting it on hardware upgrades by transmitting ECGs within the platform — no modem required!

03 Reduce time to treatment for all patient types — an average of nearly 30% — by uniting every member of the care team in a single patient channel.

02 Handle the care coordination for every patient type, whether you're treating a pediatric or burn patient, responding to a time-sensitive emergency, or transporting a COVID-19 patient.

01 Replace the radio report with a solution that allows you to better tell a patient story using alerts, audio clips, live video, sharing images, and more.

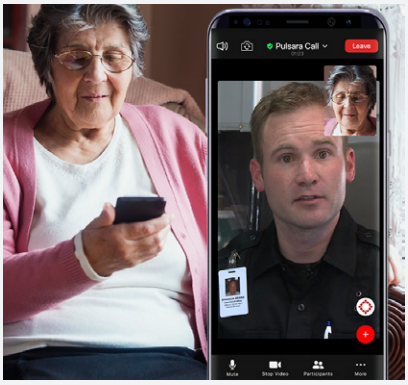
You can do this and more with
Pulsara **ONE** and Pulsara **UNITED**

LEARN MORE

join us on:

IT'S ABOUT PEOPLE

RESOURCES

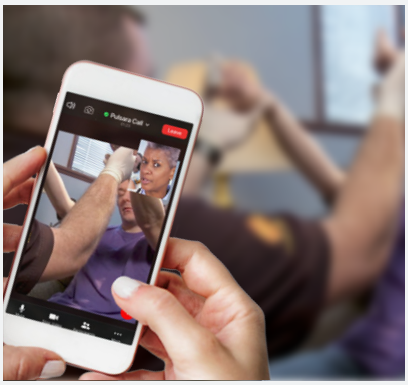


How video streaming benefits everyone involved in an EMS call

How can EMS agencies leverage technology for growth and evolution?

EMS1.com: Coronavirus (COVID-19)

EMS1.com: Community Paramedicine



Pulsara on EMS1.com

Pulsara

EMS1

pulsara®