



the **JOURNAL**
of emergency dispatch

EYE ON THE FUTURE



DISPATCH INTO THE FUTURE

Journal Staff

The future of emergency dispatch is a hot topic for the Academy and its members, with conflicting information from various experts leaving plenty of room for debate around what impact automation technology like artificial intelligence (AI) and robotics will have on jobs, skills, and wages. These factors will inevitably change models for emergency dispatch, accelerating into conversations of human necessity in the communication center. Will people become secondary in the delivery of emergency services? When you have machines that are able to do pattern matching better than human beings, and machines that are able to discover novel solutions to problems, people start to worry about what's left for them to do.



Will there still be enough work, or will we create enough work to make up for what we're going to lose? The U.S. Department of Labor, Bureau of Labor Statistics forecasts a bright future in emergency dispatch or, at least, a job outlook on par with all occupations:

Employment of police, fire, and ambulance dispatchers is projected to grow 8 percent from 2016 to 2026, about as fast as the average for all occupations. Job prospects should be good because the stressful nature of the job results in many workers leaving this occupation. (Occupational Outlook Handbook 2017).

We don't have a sage telling us what will happen, but we do have experts who can give us an idea of what the future might hold for emergency dispatch. In this special edition of the Journal of Emergency Dispatch, we talk to people with the experience and foresight to start the discussion.

DRIVING FACTORS



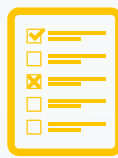
GREG SCOTT
Operations Research Analyst
International Academies of
Emergency Dispatch®

There are three fundamental drivers of change in the emergency dispatch profession: cost, technology, and public expectations for more and better service. How these three factors interact will determine where we are in the coming decades. As costs of both public safety and health care services continue to rise dramatically, so the pressure will be on emergency dispatch agencies to consolidate both geographically and by service delivery type; in other words, more services under one system, covering a larger area and population. Practically, this means consolidating several 911 agencies into one, with more,

and more diverse, training for emergency dispatchers, adding specialized services to the 911 center, such as clinicians for patient navigation, crisis counselors for mental health emergencies, and disaster management communications specialists.

Technology will make it possible to connect all of these specialized resources into a single emergency communications system—even when personnel and equipment are not all under one roof. The public will increasingly expect more services with higher quality and more efficiency from public safety and emergency dispatch agencies—further driving the training and education of emergency dispatch personnel. As the three driving factors for change exert more influence on the emergency dispatch field, the dispatch professional must be prepared to grow with the profession. The well-trained, adaptable emergency dispatcher will be in high demand for many years to come.

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The three fundamental drivers of change in the emergency dispatch profession are cost, technology, and public expectations.

PROTOCOL SYSTEMS



TY WOOTEN, ENP
Education Director
NENA: The 9-1-1
Association

We have already seen how the use of all three protocols can have a positive effect on all of emergency response. Eliciting the right answers from the people reporting any incident is and will remain the critical point of our role within emergency response. To me, the question for the future is how protocol systems will evolve to also take into consideration the different mechanisms of how emergencies may be reported in the future, whether it is sensors from machine to machine



communications, or artificial intelligence aggregating billions of points of information, processing it in near real time and providing the Emergency Response Operations Center with the data.



**CHRIS KNIGHT
DAVE WARNER**
Priority Dispatch System™
Program Administrators—
Law Enforcement
Priority Dispatch Corp.™



The protocol is always evolving. Police Protocol will have adaptability for each center. We'll give agencies what they want. EMD will continue to be based on research, but EPD will continue to be more about best practices.

The dispatching component will never leave the comm. center. You'll always have the human touch. Things change in EPD so rapidly that you need a person who can react immediately. There are things in police that artificial intelligence just couldn't do. Changes in the comm. center will depend on public expectations. In police calls, people just want to talk to an officer. Until that shift in culture and thinking changes, technology won't change as fast in the comm. center.

HUMAN EXPERIENCE



BRETT PATTERSON
Academics & Standards
Associate, Medical Council of
Standards Chair, International
Academies of Emergency Dispatch

While looking into the crystal ball of the future naturally includes speculation about technology, I believe the humanity of emergency dispatch is just as important, if not more so.

111,219



IAED-certified emergency dispatchers were on the books in 2018 compared to 95,583 in 2016, showcasing the trend for qualified comm. center employees.

This is because of the human nature of our business. There simply is no substitute for a well-trained, empathetic, and caring emergency dispatcher, and I suspect that as this value is better appreciated during the trying times ahead, more resources will be committed to the cause. Our goals and objectives are absolutely dependent on extracting information from frightened and emotional human beings and, once this is accomplished, we must then encourage and enable them to follow our directions.

While technology will certainly help us in doing this—imagine being able to see what the caller is actually doing to the patient while you are instructing—technology will never be able to relate to the caller at the same level a caring human being can. Technology will, however, help to free up time on task to do the most important part of our job—take good care of the people we serve.



ELIZABETH ELLCESSOR
Assistant Professor in Media
Studies Department
University of Virginia

Protocol is an amazing tool in terms of structuring emergency dispatcher and caller interactions and collecting relevant information, but the tool is one-sided—the dispatcher is aware of and following protocol, but callers (particularly first-time callers) are encountering a new conversation and do not have the benefits of protocols or expectations to guide them. Augmented reality, AI, and machine learning, and even tools as simple as smartphones, can move us toward systems in which protocol operates both ways. Prompts, on-screen visuals, and other forms of multimedia communication can help to inform callers about how a call is progressing, what to expect, how far through a given protocol they have



8



percent growth is projected from 2016–2026 for emergency dispatchers. There simply is no substitute for a well-trained, empathetic, and caring emergency dispatcher.

moved, at what point dispatch actually occurs, and more. The challenge, of course, remains how to inform and aid without overwhelming callers with new information systems. We want these tools to be both as familiar and as specific as possible.



RON MCDANIEL
President
Priority Dispatch Corp.

Priority Dispatch Corp. (PDC™) is now looking at quality assurance and call queue monitoring technology—artificial intelligence with a high enough confidence factor will find irregularities that, when reviewed by the ED-Q™, will pinpoint training needs, compliance, and protocol enhancements. Call queue monitoring technology will help you get to the cardiac arrest call sooner without putting any of the other callers at risk.

At the same time, PDC will work with countries that are still in the process of developing EMD and EMS technology. Technology is just part of the picture. PDC isn't envisioning a future world of human contact left behind. Technology's meteoric rise will never eclipse the human experience. Everything PDC is looking at involves human augmentation, focused on making the jobs of emergency dispatchers easier and safer. Emergency dispatchers will always make a difference in somebody's life now and into the future.

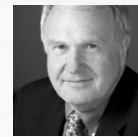


KATE DERNOCOEUR
Co-author of "Principles of EMD"

We need not jam mere mortals into superhuman roles that demand too much and drive them to the breaking

point. Just because technology is capable doesn't mean the humans can realistically be expected to keep up. We need to make the job manageable for the people in the hot seat, which might mean having something in reserve for mass casualty incidents or days that are simply super busy. We can't work them at "max" all the time.

LEADERSHIP



JAY FITCH, PH.D.
Founding Partner
Fitch & Associates

As far as emergency dispatch is concerned, we are also facing disruptive technology: Wearable devices, implanted technologies, and sophisticated biometric

diagnostic algorithms are on the horizon. Are we too comfortable that we will always be relevant or needed? The issue of becoming a victim to disruptive change is less about the larger industry as a whole and more about how agile your organization is in regard to planning for, and adapting to, disruptive technology and the other challenges ahead.

The question is not "is the emergency dispatch profession going to exist tomorrow?" Rather, "Is my agency putting ourselves in the best situation possible with the technology available in the market to meet and exceed the needs of our customers?" If you're not addressing this question ... look around you, look at leaders, look at agencies in the EMS profession that are attaining success, and break down their strategy. You don't have to reinvent the wheel.

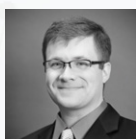


JERRY OVERTON
President
International Academies of
Emergency Dispatch

Emergency dispatch's role in leadership won't change. Everything will continue to begin at dispatch, particularly as the profession and its role in EMS become more sophisticated. There will be more apps, videos, and drone delivery of medical supplies (AEDs and naloxone, for example). EMDs will position even more closely with the rest of the health care system. EMDs want to know more about what they do. They want more information to understand the basics behind what they're doing (medication administration, etc.). They are highly trained professionals and the more we

learn at the Academy, the more we can help EMDs. Leaders in EMS need to recognize that they are dealing with professionals and provide the necessary tools to keep up with the changes and opportunities for advancement in their careers.

TECHNOLOGY



NICK NUDELL
Chief Data Officer
Paramedic Foundation

If artificial intelligence can review millions of 911 calls and see patterns that are too rare or dispersed for humans to see and if it can learn to listen and

comprehend what's being said over the phone, what's keeping AI from replacing human emergency dispatchers altogether? Doctors worried the same thing during the rise of Google. If people could simply Google their symptoms and find out how to treat whatever illness they had, why would they need doctors? As anyone who has Googled "sore throat" and came away convinced that they were dying of the plague can attest, there's something to be said about utilizing a human professional who can understand context. AI is a tool to support the human emergency dispatcher in making good decisions.



HEIDI DIGENNARO
Public Safety Shift Manager
Harford County 911, Maryland

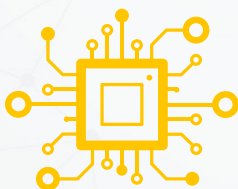
"911, what's the location of your emergency?"

"321 Main Street, there's been a bad accident." The camera bounces and jostles to turn and show a two-car collision. Smoke pours from one engine compartment, and the sounds of crying, shouting, and a car horn come through the line.

The telecommunicator sees two people with blood on their faces and spent air bags in one car, and another person with a gash across his forehead in the other. She chooses the button for "Injury Accident" to get to the next submenu of choices for protocol instructions.

This could be the future of 911 in the year 2025, 2030, or even sooner. Emergency dispatchers will have live shots of what's happened and be required to do an on-scene assessment from their communication center.

01011



Ask, "Is my agency putting ourselves in the best situation possible with the technology available in the market to meet and exceed the needs of our customers?"



They will be exposed to the rawest form of the emergency, usually moments after it has happened or while it is in progress.

Our industry is changing and needs to leap forward. This is our moment to plan, prepare, and shine.

EMS CONNECTIVITY



HEINZ NOVOSAD

Instructor
Implementer
Reviewer
International Academies of
Emergency Dispatch

The communication center must link to callers, first responders, community-based programs, professionals involved in the patient's care, and agencies that can offer potentially necessary services (medical, police, and fire). The connectivity requires internet-based subsystems, including an automated call distribution system, interactive voice response (to give automated options), and software tools to manage emergency resources and organize information collected during the call.

How well emergency dispatchers respond also depends on the human-computer interaction (HCI). HCI creates an open-ended dialog between the user and the computer that (ideally) results in reducing errors and increases efficiency, situational awareness, and user satisfaction. Finally, emergency dispatchers will require the training and tools the IAED™ provides to guide them into the future and the systems on-site to diminish stress and enhance the environment in which they work. There is awesome potential in high-tech infrastructure and I, for one, am glad that I will be around to implement and experience the future of emergency communications.

500



adults out of 1,000 in the U.S. were significantly less willing to ride in a driverless ambulance, even when they would receive care from two paramedics instead of one.



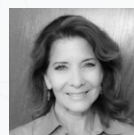
LOUISE TODD

Clinical Support Officer
Priority Dispatch Corp.

The amount of lives that have been saved and touched by Dr. Jeff Clawson's vision has to be one of the most amazing visions of modern-day medicine in the Dispatch Life Support field. For the future, we must provide emergency dispatchers with as many tools as we can to assist them to undertake their role effectively, empathetically, and compassionately. We need to identify the ever-increasing demands and assist emergency dispatchers in meeting those demands.

This is where the Priority Dispatch System comes into its own, by providing an effective, scientific-based product that they can use and trust. In the U.K., demand is far outstripping EMS resources. There has to be a shift in the way the public accesses health care to decrease the demand on the emergency services—that may be through self-

care, other care facilities such as nurse/paramedic practitioner, pharmacist, walk-in center, etc. This then frees up the emergency vehicles to attend those who need them and can be achieved through the use of the MPDS® and ECNS™.



GIGI MARSHALL, RN
Emergency Communication
Nurse System™ Program
Administrator



CONRAD FIVAZ, M.D.
Clinical Director
Priority Solutions™

In the years to come, the Emergency Communication Nurse System™ (ECNS) will further embrace evidence-based medicine (EBM) and continue to grow clinically through patient outcome data, ECNS Standards Committee oversight, and establishing new evidence to incorporate into EMS health care operations beginning at the communication center.

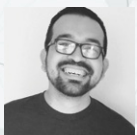


From a technology standpoint, we anticipate more dynamic, intuitive, and sophisticated software and analytical capabilities. The development and inclusion of video within the ECNS assessment process is one such tool we are keen to explore. Video capabilities will be an adjunctive module to enhance the telephonic triage process and reduce the uncertainty in the decision-making process. Electronic health records are becoming mainstream and, in the ECNS setting, can alert the ECN to the patient's pre-existing conditions and treatment history. We are currently looking at patient access to updated care instructions (response, referral, transport, and at-home care advice) through his or her smartphone.

In addition, electronic health records in the ECNS setting can alert the ECN to the patient's pre-existing conditions and treatment history to assist in case management capabilities. We are also exploring a methodology and capacity that allows patients to complete their individual personal profile information electronically at the time they place the call or even before.

It is an exciting time to be working in EMS and exploring the possibilities of improving health care for communities. We will continue to be leaders in our industry with our forward-thinking leadership and time-tested protocols.

INTO THE FUTURE



RICARDO MARTINEZ
Creator/Host of *Within the Trenches* podcast

It's 2050, and the role of an emergency dispatcher has become even more vital. The 911 dispatcher of yesterday has evolved into an Emergency Communications Specialist (ECS) working in an Emergency

Communication Center (ECC). Today's technology is far more superior than that of 2016–2018. During that time, location accuracy was on the rise and the race to save lives through apps on smartphones and technology baked into a service provider's network were a hot topic. But as technology began to ramp up and public safety began to catch up with the times, we lost something. We lost the human touch. Dispatching is made up of common sense and being human. We lost that back then.

An ECS can post EMS in a hot spot and have a response time within a couple minutes versus 10 to 15 in cases back then. This link between the ECC and EMS responders has become a vital link in the chain of survival.


Now, an ECS knows everything and can pretty much see all of what is going on. It was not welcomed in the beginning.

People fought against it because of the mental health aspect of it, but what happened was that they felt better. Despite the harsh aspect that is 911 and that anything can happen at a moment's notice, it was having closure that made it all better. This was the missing piece to mental health and wellness: knowing. Technology has allowed for an ECS to monitor public safety during an emergency incident, and it has also taken the ECS into account where his or her level of stress can be monitored by a supervisor. After a hard call, an ECS may take a break to decompress in a number of ways. See, once public safety put dispatchers first back then, they were able to secure funds to pay more, focus on their health, and turn this into more of a career than it once was. Turnover rates dropped, excessive overtime was gone, and dispatch was finally taken care of. ●

35



People younger than 35 have never seen a world without the internet. IP connectivity is being introduced into almost every device (IoT) and will provide information that is useful to emergency dispatch.



For years emergency dispatchers have been on the sidelines. They were often forgotten, but now, they are the most vital piece of public safety. Truth be told, they always have been, but it took us a long time to get here.

— RICARDO MARTINEZ





110 South Regent Street, 8th Floor
Salt Lake City, UT 84111 USA
USA/Canada toll-free: 800-960-6236
Intl/Local: 801-359-6916
editor@emergencydispatch.org
iaedjournal.org

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