9-1-1's AI OPPORTUNITY

From call notetaking to mental health, artificial intelligence can make a difference for public safety telecommunicators.

By Josh Keeler

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In early 2022 "ChatGPT" wasn't yet a part of our cultural lexicon. As 2025 kicks off, OpenAI's revolutionary large language model (LLM) sits alongside myriad innovative, AI-powered solutions that have changed how numerous industries operate. With staffing levels critically low for many agencies, next-generation technology increasing data inputs and call volumes steadily increasing, 9-1-1 has begun to ask how AI might be able to help.

In October 2023, fewer than 12 agencies nationwide had deployed AI in their operations.[1] It is clear from my work with agencies in the application of AI to emergency response that the number has risen dramatically over the past year. Even so, the vast majority of communities' emergency response processes remain untouched.

With so much growth still possible, the question remains: why should an emergency communications center (ECC) adopt AI-powered technology?

AI AND ITS LIMITATIONS

Fundamentally, AI is a machine's ability to perform cognitive functions traditionally associated with human minds. This is enabled by machine learning: algorithms that can detect patterns and learn how to make predictions independently.

Applied to 9-1-1, the potential applications for AI are endless. However, amidst myriad possibilities, one thing is evident: AI cannot replace the human. Telecommunicators are an essential element of the emergency response process. Their emotional intelligence and ability to channel past experiences render them invaluable.

So where can and where has AI made an impact?

Call taking telecommunicators rely on experience to appropriately get important information from a panicked caller to a dispatching telecommunicator, who in turn relies on experience to dispatch a measured, effective response. The faster we can diagnose an emergency in the ECC, the faster field responders can reach the scene. Incorporating AI into that process offers the opportunity to materially enhance key facets of emergency response.

AI is already being used in ECCs to assist in functions ranging from non-emergency calls to real-time notetaking. AI helps supervisors balance resources applied to quality assurance and training, and it performs real-time translation.

NON-EMERGENCY CALL-HANDLING

Among the first areas AI helped ECCs was non-emergency call-handling. According to the Stateline news service, agencies like South Carolina's Charleston County Consolidated ECC leverage Amazon Connect to answer and redirect the non-emergency caller to the appropriate resources, including a human if necessary. The result is a 36% reduction in the volume of calls to the administrative line, effectively freeing up human telecommunicators to handle urgent emergencies.

CALL TAKER NOTETAKING

Typing is a preeminent skill for telecommunicators. With multiple screens, technologies and calls to juggle, their ability to effectively process verbal information and convey it to CAD notes is essential. Often referred to as "dispatcher ear," it can take time to develop this skill to reach high-level proficiency. For some agencies, like Anoka County (Minnesota) Emergency Communications Center — 911, inexperienced and experienced telecommunicators are both able to rely on AI transcription and analysis of call audio as a backup to their own ears.

"We're trained to hear, but there's so much going on that you miss things sometimes. The transcript seems like it does a really good job of picking just [the caller's] conversation out. So now we're able to ask better clarifying questions," Director of Emergency Communications Kari Morrissey said, speaking on the efficacy of the technology.

In one case, a call taker had heard a caller state their location as a middle school, but the transcript caught that it was actually a high school of the same name, preventing responders from reporting to the incorrect location.

Director Morrissey concludes, "You might think the caller said gun, but think you might have misheard it because there's so much going on and your brain can't process all that. Now you have that extra tool to read [what the caller said]. ... It's doing a really good job and we're really happy with it."

REAL TIME QUALITY ASSURANCE, TRAINING

For an understaffed agency with high call volumes, quality assurance (QA) can be a gargantuan effort. Listening to calls takes time and a telecommunicator might not receive feedback on a given call until weeks after it occurs. In Tennessee, Hamilton County 9-1-1 uses AI to keep supervisors notified of critical calls so that they can monitor them in real-time. Using a keyword trigger from an AI-powered audio transcription, Executive Director Jeff Carney will watch a call unfold, give instruction as needed and provide feedback, especially positive feedback, upon conclusion of the call.

Of the program, Carney says, "Transcription allows us to do real-time QA with our supervisors so they can keep a check on multiple calls at the same time."

By catching errors before they are errors, Hamilton County has improved training and dispatch accuracy in real time.

NON-ENGLISH CALL PROCESSING

In a country as large and diverse as the United States, there will always be 9-1-1 callers for whom English is not the primary spoken language. Too often in these cases, callers are left to wait while ECCs get a third-party interpreter conferenced into the call,

wasting valuable seconds and minutes during an emergency.

In Pennsylvania, Delaware County Emergency Services have attacked the problem head-on for Spanish, which is the second-most spoken language in the U.S. Using an AI-powered, text-to-voice functionality, call takers read a Spanish translation of the caller's words and type a response in English, which is heard verbally by the caller in Spanish. Early estimates from Chief Anthony Mignogna are that the technology reduces his Spanish call-processing times by about 66%.

In 2019, U.S. regulators estimated that shaving a single minute from 9-1-1 calls could save up to 10,000 lives per year. Viewed through that lens, the AI-powered translation could prove to be a massive difference maker. In addition to the areas outlined above where AI is already making a significant impact, there are more ways AI might be able to help 9-1-1 in the future.

PROTOCOL EXECUTION

For 9-1-1, protocols form the backbone of the flow of every call for service. Protocols help ensure that every call comes within an accepted standard of practice, reducing telecommunicator stress by ensuring they have a set group of questions to ask, are able to execute pre-arrival instructions and aiding their instructions to field responders.

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AI offers the potential to optimize and enhance protocols. Rather than using a manual flow, what if AI suggested the next question or instruction to call takers, thereby assisting their adherence to protocols?

MENTAL HEALTH

Telecommunicator mental health is an increasing focus for an industry that has too often been left behind or forgotten when it comes to appropriate resource allocation for critical care. By using AI to analyze the calls that a telecommunicator has processed, supervisors and agency administrators can proactively approach their trauma load.

It's difficult to effectively monitor every call at every console. And it only grows more difficult in a world of staffing shortages. AI reduces the burden on the telecommunicator and allows supervisors to easily keep tabs on their entire team, creating a more holistically positive workplace environment.

CONCLUSION

AI is beginning to positively impact telecommunicators, administrators and the communities they serve. If the public safety communications industry can effectively harness the power of AI as an assistive element to our excellent human telecommunicators, there is great potential to continually improve the effectiveness of call taking and dispatching capabilities nationwide. ●

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REFERENCES

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