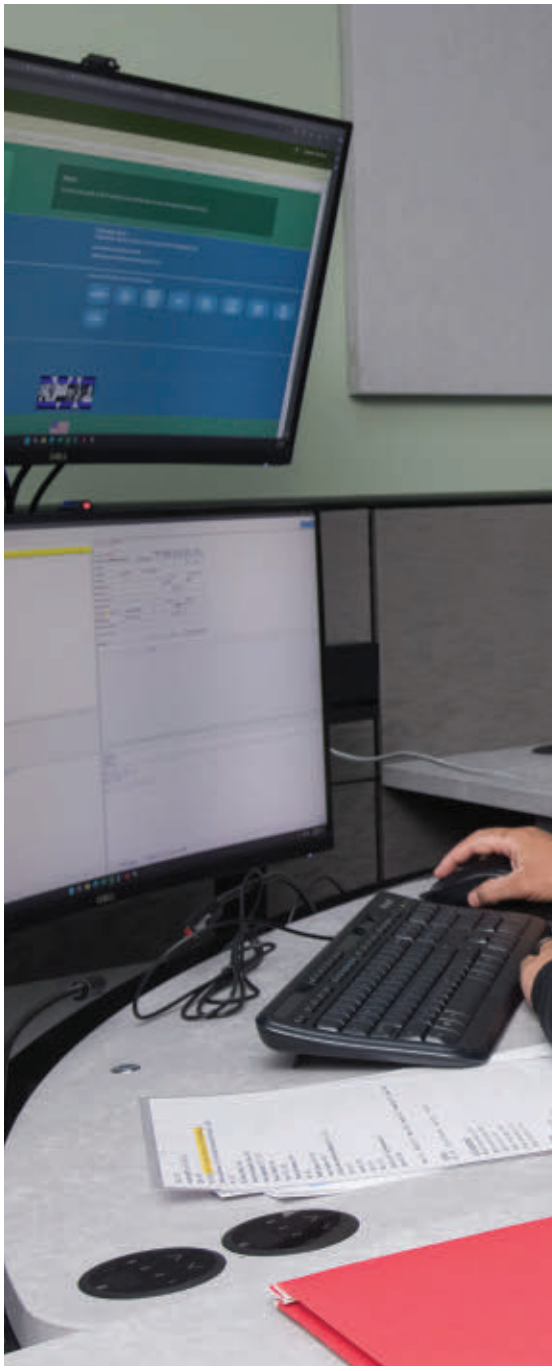
CDE #73785

CHARTING THE COURSE

How APCO's 2019 study shaped the 2024 incident handling standard.

By Jessica "Jae" Lohr



Emergency communications centers (ECCs) serve as the frontline of public safety response, but until recently there was limited empirical data on how call handling and incident processing times varied across agencies. The question has always been multifaceted: Do larger agencies have faster processing times because they have the budget and technological wherewithal to handle calls quickly, or do smaller agencies have an edge with more direct management and training focused on local risks? There has always been a difference in agencies' approach to operations and training due to size, budget and locality, but it hasn't been quantified previously. APCO International, in collaboration with George Mason University's Center for Social Science Research (CSSR), conducted a landmark study in 2019 to analyze ECC performance nationwide. Five years later, the insights from this study were incorporated into the 2024 revision of APCO's American National Standard (ANS) 1.113.2. (www.apcointl.org/standards/report-call-handling-and-incident-processing-at-eccs) This refined previously established industry benchmarks for public safety communications in establishing, implementing and maintaining effective practices for managing service requests.

In 2019, APCO and CSSR surveyed 772 ECC professionals to gather real-world data on incident handling processes. The goal was to evaluate key performance indicators, including call answering times, incident processing efficiency and external factors. The three most critical areas identified for improvement were standardized training and call processing; technological integration and automation; and performance tracking and metrics.

Some ECCs processed calls efficiently, while others experienced delays of up to several minutes; processing times were affected by ECC size, staffing levels and call complexity. These substantial inconsistencies were due to some ECCs lacking a structured approach to gathering information from callers, leading to variability in response efficiency and — in some cases — delays in dispatching appropriate resources. Language barriers (74.5%), distressed callers (78.5%) and location identification (72%) were reported to be significant factors contributing to slower processing times. Callers in crisis understandably required longer engagement times. No standardized call interrogation models were present across respondent ECCs, and training opportunities and ability depended upon agency resources. Some agencies relied on memorized scripts rather

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than structured emergency medical dispatch (EMD) protocols or frameworks.

The use of computer aided dispatch (CAD) with integrated call handling and NG9-1-1 technologies produced marked differences in call processing speeds:

- Agencies with automated CAD systems that utilize integrated call handling, location services and dispatching processed calls 20% to 30% faster than those using standalone or paper-based systems.
- ECCs with NG9-1-1 capabilities processed calls up to 15% faster than those relying on traditional 9-1-1 voice calls, which don't offer location accuracy or direct digital input into CAD systems.

Additionally, a lack of integration between 9-1-1 call data and CAD systems resulted in duplicate data entry, increasing the potential for errors. Staffing shortages (65.4%) and lack of experience (51.2%) also contributed to delays in dispatching resources. Staffing challenges have long been a known factor for slower processing times within ECCs regardless of size, and public safety partners, such as APCO, have multiple resources available to address. Many ECCs did not collect internal data on processing times, leading to unclear or inaccurate performance assessments, while some ECCs relied on self-reported estimates of call processing efficiency rather than hard data from CAD logs. A lack of standardized benchmarks for call processing led agencies to set their own goals, which were often unrealistic or misaligned with industry trends and made comparisons to national averages difficult, if not impossible. Without these points of comparison, it is difficult for ECCs to identify areas for improvement. It

ECC Call Processing Times (in seconds)					
	Total ECC Average	Small ECC Average	Medium ECC Average	Large ECC Average	F
Call Answer Time	9.1 (n=302)	9.5 (n=213)	7.9 (n=78)	9.7 (n=11)	1.7†
Law Enforcement Calls					
Call Answer to Incident Entry	38.4 (n=254)	36.7 (n=184)	42.2 (n=63)	47.6 (n=7)	1.4
Incident Entry to Dispatch	59.7 (n=270)	54.1 (n=199)	74.6 (n=63)	82.4 (n=8)	5.3*†
Fire Calls					
Call Answer to Incident Entry	35.0 (n=238)	34.2 (n=175)	37.6 (n=57)	33.5 (n=6)	0.42
Incident Entry to Dispatch	47.2 (n=251)	45.6 (n=182)	50.7 (n=63)	61.3 (n=6)	1.2
EMS Calls					
Call Answer to Incident Entry	36.4 (n=225)	35.3 (n=163)	40.1 (n=56)	33.5 (n=6)	0.8
Incident Entry to Dispatch	47.8 (n=239)	47.0 (n=175)	48.1 (n=57)	67.9 (n=7)	1.2
*p<.05; †Welch F					

Figure 1 Appendix C Table from APCO ANS 1.113.2-2024

also places employees at a disadvantage if they transfer to another agency that does use standardized benchmarks.

The 2024 ANS revision was developed in response to the performance gaps and challenges identified in the 2019 study. The study demonstrated the need for more realistic benchmarks, improved call handling processes and greater emphasis on technology integration. The updated standard introduces a modernized, scalable approach to emergency telecommunications to ensure that ECCs operate with greater efficiency, consistency and adaptability while maintaining high service delivery standards.

The most significant update to the 2024 APCO ANS standard is the introduction of tiered performance benchmarks, an acknowledgment that ECCs vary widely in size, call volume and available resources. The revised standard provides scalable guidelines. The scale adjusts performance expectations based on operational capacity instead of requiring that all agencies meet the same standard (See Figure 1). ECCs now have realistic benchmarks tailored to their capabilities based on size. Additionally, the new standard accounts for complex incident types, such as HAZMAT and technical rescues. It allows longer processing times for these situations while maintaining efficiency for routine emergencies (See Figure 2). This approach ensures that processing speed does not come at the expense of quality and accuracy in critical incident handling, and it aligns with real-world data from the 2019 study. ECCs are held to scalable, achievable and practical standards within their own established operational structure — just police, just fire/rescue or all three disciplines if they have them.

Beyond adjustments to benchmarks, the 2024 standard strongly emphasizes and promotes technological integration and automation to reduce processing delays. The 2019 study revealed that ECCs using outdated technology had significantly longer call processing times, prompting the 2024 update to encourage the adoption of AI-assisted call processing tools, which can automatically prioritize emergency calls and reduce reliance on manual screening methods. Integrating NG9-1-1 technologies is also a significant focus, allowing for real-time location tracking, multimedia data transmission (text, video and images) and direct CAD input, minimizing data entry errors and reducing the time required to verify critical information. The revised standard also highlights the role of automation in reducing call-processing delays by improving location validation, caller information retrieval and dispatch workflow synchronization. ECCs are advised to phase out outdated CAD systems in favor of fully integrated platforms that streamline communication between call takers, telecommunicators and field responders. By leveraging modernized, interconnected systems, ECCs can significantly reduce processing times, improve accuracy and enhance the efficiency of emergency response coordination.

Another key revision in the 2024 standard is the implementation of structured performance monitoring to ensure continuous

ECC Call Processing Time By Incident Type (Time in Seconds)					
Language Translation	**Total ECC Average**	**Small ECC Average**	**Medium ECC Average**	**Large ECC Average**	**F**
Call Answer to Incident Entry	70.9 (n=153)	66.4 (n=115)	77.4 (n=32)	123.3 (n=6)	3.5*
Incident Entry to Dispatch	81.3 (n=154)	78.9 (n=116)	82.9 (n=33)	126.0 (n=5)	2.3
TDD/TTY Device, TRS					
Call Answer to Incident Entry	48.4 (n=117)	43.8 (n=90)	64.0 (n=24)	63.3 (n=3)	1.6
Incident Entry to Dispatch	62.1 (n=120)	62.3 (n=95)	60.2 (n=23)	75.0 (n=2)	0.1
Difficult Location Determination					
Call Answer to Incident Entry	70.0 (n=161)	68.7 (n=127)	74.1 (n=30)	82.5 (n=4)	0.2
Incident Entry to Dispatch	74.6 (n=156)	73.0 (n=121)	78.1 (n=32)	100.0 (n=3)	0.4
*p<.05					

Figure 2 Appendix D Table from APCO ANS 1.113.2-2024

improvement across ECCs. The lack of standardized performance tracking was a major issue identified in the 2019 study, with many agencies failing to collect accurate data on call handling times or assess performance against industry benchmarks. The 2024 update requires ECCs to track and analyze call processing data, ensuring that performance metrics are data-driven rather than self-reported estimates. Agencies are now expected to compare their efficiency against national averages, enabling real-time adjustments and targeted training to improve response times. Additionally, the standard introduces an annual performance review process, allowing agencies to identify trends, assess challenges and refine their operational protocols based on empirical data. This data-backed self-assessment framework ensures that ECCs continue improving and adapting to changing operational demands, evolving technology and emerging public safety challenges.

These changes offer several key advantages to adopting ECCs, as they can now customize their performance benchmarks based on staffing levels, call volume and available technology, creating a fairer system of evaluation, one that acknowledges operational limitations while promoting service excellence. The important and sorely needed distinction between routine and high-complexity incidents ensures that calls requiring extensive caller engagement are handled appropriately, while time-sensitive emergencies receive immediate prioritization. And, while AI continues to be a hot button issue across the world, evaluating AI-assisted dispatching and transitioning to NG9-1-1 technologies can provide ECCs with the tools to process calls faster and more accurately, reducing errors and improving overall efficiency. Perhaps most importantly, by incorporating structured performance monitoring to track effectiveness over time, ECCs can justify funding and staffing requests using data-driven evidence.

> **Some ECCs processed calls efficiently, while others experienced delays of up to several minutes; processing times were affected by ECC size, staffing levels and call complexity.**

The 2024 revision represents a significant evolution in public safety communications, bridging the gap between empirical research and operational policy. The insights gained from the 2019 APCO-CSSR study provided a foundation for understanding the daily challenges ECCs face, from variability in call processing times to the impact of technology and staffing on response efficiency. By translating these findings into actionable, measurable standards, the revised guidelines equip ECCs with the tools to improve service delivery while adapting to the complexities of modern emergency response. While no standard can eliminate the unpredictability

inherent in emergency response, this standard offers a data-backed, adaptable framework that prioritizes consistency, efficiency and quality of service. Public safety professionals no longer work within an outdated, one-size-fits-all model but instead have a modernized approach tailored to real-world operations. With ongoing advancements in emergency communications technologies, data analytics and policy development, the role of ECCs will continue to evolve. With a renewed focus on research-driven best practices, agencies can be confident in their ability to meet the growing demands of public safety.

As ECCs across the country implement these new standards, the hope is that they will see faster response times, better-coordinated emergency efforts, enhanced efficiency and, ultimately, more lives saved. The 2024 update is not just a revision of existing policies. It is a commitment to continuous improvement, operational excellence and the future of emergency communications. ●

Jessica "Jae" Lohr, CMCP, RPL, *is the Performance Improvement and Accreditation Supervisor for the Charlottesville-UVA-Albemarle County Emergency Communications Center in Charlottesville, Virginia.*

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1. APCO partnered with which university to collect empirical data for emergency communications center (ECC) call processing?
   a. James Madison University
   b. George Mason University
   c. Virginia Commonwealth University
   d. William & Mary University

2. The goal of the study was to evaluate key performance indicators, including call answering times, incident processing efficiency and _____.
   a. External factors
   b. Internal factors
   c. Morale and staffing issues
   d. Administrative factors

3. The three most critical areas identified for improvement were _____ technological integration and automation, and performance tracking and metrics.
   a. Staffing and compensation
   b. Building programming
   c. Standardized training and call processing
   d. Succession planning

4. Language barriers were reported by what percentage of respondents to be a significant factor in delayed call processing?
   a. 74.5%
   b. 78.5%
   c. 72.5%
   d. 64.5%

5. Agencies with automated CAD systems that use integrated call handling, location services and dispatching consistently processed calls 20% to 30% faster than those using standalone or paper-based systems.
   a. True
   b. False

6. The updated standard introduces a _____ approach with _____ performance benchmarks.
   a. Scalable; fixed
   b. Fixed; tiered
   c. Tiered; scalable
   d. Scalable; tiered

7. ECCs can customize their performance benchmarks based on staffing levels but not call volume or available technology.
   a. True
   b. False

8. ECCs can track their effectiveness over time, enabling them to justify funding and staffing requests using _____ evidence.
   a. Estimated
   b. Static
   c. Elevated
   d. Data-driven

9. Complex incident types, such as HAZMAT and technical rescues, are allowed longer processing times than routine emergencies.
   a. True
   b. False

10. The Language Translation Call Answer to Incident Entry performance benchmark for a medium size agency is_____.
    a. 43.8 seconds
    b. 81.3 seconds
    c. 74.1 seconds
    d. 77.4 seconds

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