

# Challenges and Innovations in ECC Operations



## Understanding ECC Operations: Modern Challenges and Innovations

**Bonnie Maney**

*Public Safety Communications  
Operations Domain Manager  
Mission Critical Partners*

**Jason Malloy, MS, ENP, RPL**

*Operations Domain Leader  
Mission Critical Partners*

### Introduction to ECC Operational Changes

Emergency communications centers (ECCs), also known as public safety answering points (PSAPs), are experiencing rapid operational transformation driven by new technologies, evolving public expectations, and persistent staffing shortages. Leaders are exploring innovative approaches—including alternative-response models and expanded automation—to improve efficiency, reduce emergency response times, reduce workloads, and match resources more effectively to community needs. At the same time, system complexity continues to rise, underscoring the need for modernized continuity planning, resilient infrastructure, and strong organizational leadership. ECCs must therefore balance modernization with sustainability to ensure reliable service in a fast-changing environment.

### Why Are ECCs Facing Rapid Transformation?

ECCs across the United States are navigating significant transitions as technology advances, communities demand more diversified responses, and staffing challenges intensify. This environment offers opportunities for improved emergency services delivery but also presents barriers, including resource limitations, cultural hesitation, and integration challenges.

Alternative first response models are among the most transformative developments. These frameworks redirect low-acuity and nonemergency calls to more appropriate resources—311, 211, 988, nurse triage, or civilian response units to name a few — reducing burden on 911 telecommunicators and enabling faster,

specialized assistance. Tools such as AI-based virtual attendants and automated alarm verification further enhance this shift by decreasing manual processing. Leaving ECCs to focus on emergency calls.

ECCs are also beginning to embrace artificial intelligence (AI) and automation, including automated transcription, translation, incident filtering, and workflow support. These tools can significantly lighten cognitive load and improve processing speed, though they require new policies, training, and cultural adaptation.

Despite these advances, staffing shortages remain one of the most pressing issues, affecting training, morale, and operational resilience. Whether from understaffing, short staffing, or both, many ECCs operate with insufficient personnel, limiting their ability to implement new technologies or pursue strategic planning.

Additionally, continuity-of-operations planning (COOP) often lags the realities of modern, cloud-based, interconnected systems. Updated plans are necessary — more than just a simple bug-out plan — to account for today's dependencies across agencies, platforms, and regional networks.

These pressures are reshaping ECC missions, expectations, and capabilities nationwide.

## Opportunities for ECCs to Improve Operations

### **Alternative First Response Models: Benefits and Implementation Tips –**

Alternative first response models represent a major opportunity to improve ECC efficiency, enhance mission critical service quality, and strengthen telecommunicator wellness. Benefits include:

- Reduced call volume by routing low-acuity and nonemergency calls to 311, 211, 988, and specialized response resources. Reducing nonemergency 911 calls, allowing resources to focus on emergency callers.
- Automation of routine call types (e.g., alarms, abandoned vehicles).
- Integration of diverse response options such as AI-based attendants, nurse triage, mental-health clinicians, and civilian responders.
- Improved workload distribution and reduced burnout by decreasing the number of non-911 call types.
- Improved service delivery to the community by transitioning low-acuity incidents to a more appropriate responder (e.g., public works instead of the fire department, mental-health clinicians instead of law enforcement officers).

### **ASAP Service: Cutting Alarm Response Times with Automation –**

ASAP Service, grounded in the American National Standards Institute (ANSI)-accredited Automated Secure Alarm Protocol (ASAP) and Alarm-Verification Standard (AVS-01), provides automated digital delivery of alarm notifications directly into computer-aided dispatch (CAD) systems and assigns risk-based verification scores. Benefits include:

- Reduced response times — from as high as eight minutes to as low as two minutes.
- Improved data accuracy by eliminating manual transcription errors.

- Enhanced telecommunicator efficiency through automation of high-volume alarm traffic.

**How AI and Automation Enhance ECC Efficiency** – Emerging automation can reshape ECC operations by increasing call-handling speed and reducing manual tasks. Examples include:

- AI-powered virtual attendants supporting nonemergency lines and select, static location, high call volume-generating 911 incidents (e.g., traffic accidents, structure fires).
- Geofenced incident filtering to automatically manage duplicate calls during large-scale events.
- Automated transcription, translation, and workflow routing.
- Online reporting mechanisms to reduce time spent on the telephone by telecommunicators.

**Policy Alignment and Public Education for Better ECC Efficiency** – Improved community understanding and interagency coordination are essential to modern ECC operations. Focus areas include:

- Public education regarding appropriate use of 311, 211, 988, and other nonemergency resources.
- Policy alignment between 911 and 988 for consistent collaboration regarding mental health-related incidents.
- Development of community-specific response models tailored to local needs.
- Identification of sustainable funding and governance structures for emerging programs.

## Challenges Hindering ECC Progress

**Addressing ECC Staffing Shortages: Issues and Solutions** – They continue to affect most ECCs, reducing efficiency, morale, and response capability. Notable issues include:

- Many call centers operate below full capacity, causing chronic fatigue, high stress absenteeism, and burnout — even among high-performing teams.
- Training for new hires and continuing education for existing staff members frequently are limited due to insufficient personnel.
- Understaffing and short staffing both affect call-answering times, dispatch performance, situational awareness, and the ability to manage surge events or complex incidents.
- Leadership often prioritizes recruitment over retention, limiting long-term planning and contributing to morale challenges.

**Cultural and Planning Gaps in ECC Operations** – Strong leadership teams are critical, yet some centers struggle with strategic planning and change management. Notable issues include:

- Lack of long-term technology strategies, which forces ECCs into reactive — and often very expensive — decision-making.

- Telecommunicators feel excluded from decision processes, contributing to resistance and the fear of change.
- Cultural hesitation toward AI-based or automated tools due to concerns about workflow disruption, loss of control, or job security.

**Managing Rapid Technology Expansion in ECCs** – The accelerating pace of innovation creates substantial operational challenges for ECCs. Notable issues include:

- Vendors often are racing to deploy new solutions and thus are pressuring ECCs to adopt tools without adequate evaluation.
- Personnel, when faced with frequent technology changes, experience frustration and reduced confidence, which leads to change fatigue.
- Limited staff technical expertise exists to test and validate new solutions.
- Increasing system complexity exists as ECC ecosystems expand beyond traditional call-handling, CAD, and radio to include AI tools, online platforms, cloud systems, and advanced interfaces.
- Growing reliance on interfaces exists — such as ASAP service and AI transcription and translation — while helpful, also introduces new risks and the need for new training requirements.
- Mismatch between the speed of technological evolution and ECC comfort levels fuels distrust and slows adoption.

**Overcoming Challenges in Alternative First Response Implementation** – Alternative first response is a major operational shift but remains conceptually misunderstood. Notable issues include:

- It is not a single product, but a philosophy supported by tools, partnerships, and processes — making implementation inherently complex.
- Early tensions between 911 and 988 created misconceptions about training, competencies, and roles; while improving, some misunderstandings remain.
- Centers sometimes adopt alternative first response capabilities before aligning them with internal procedures, leading to inconsistent implementation or a misunderstanding regarding their proper use.
- Alternative first response requires interoperable systems linking ECCs, CAD, RMS, crisis-care networks, and automation tools, which adds technical and operational complexity.
- Public reliance on 911 persists, even when better-suited resources exist, increasing call strain.

**Why ECCs Need Modern COOP Strategies** – Modern ECC operations require COOP documents that reflect today’s interconnected environment. Notable issues include:

- Outdated COOP frameworks that do not account for cloud systems, Next Generation 911 (NG911) routing, regional sharing, remote operations, or automation for all overflow and abandonment events.
- Increased failure points resulting from expanded technology ecosystems and interdependencies.

- Limited ECC expertise needed to inventory systems, analyze dependencies, or design advanced failover models.
- Need for cross-jurisdictional coordination and specialized technical guidance to create reliable, modern COOP plans.
- COOP plans that still reflect a simple “bug-out” mentality, versus a framework by which an ECC can operate during any type of agency crisis, including the need to evacuate.

## Emerging Trends in ECC Operations to Watch

**Future of Alternative First Response Models in ECCs** – They will continue to reduce 911 workloads, improve wellness, and enable more efficient and specialized service delivery that better meets community needs.

**AI and Automation’s Growing Role in ECCs** – Statewide 911 authorities remain the strongest predictor of NG911 success. Centralized control enables cohesive governance across policy, funding, cybersecurity, GIS, and operations.

**Rising Complexity in ECC Technology and Integration** – The pace of innovation will continue to outpace the capacity of many ECCs for evaluation and implementation, heightening the need for strategic planning and strong vendor management.

**Modernizing ECC Continuity-of-Operations Planning for the Future** – COOP updates will become essential to support interconnected systems, cloud-based architectures, regional collaborations, and automated processes.