



Public Safety Communications Incident Handling Process

APCO American National Standard 1.113.2-2024



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FOREWORD

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APCO International

351 N. Williamson Blvd

Daytona Beach, FL 32114 USA

apcostandards@apcointl.org

ISBN: 978-1-943877-52-2

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EXECUTIVE SUMMARY

In 2019, an APCO national standard was established providing agencies with a set of general guidelines outlining the incident handling process (from beginning to end) for improving performance and processes in service to those calling for assistance. This standard serves as a noble starting point for this revision.

The goal of this revision was three-fold. First, to make the standard more holistic and not just public safety focused. The Working Group recognized many Emergency Communications Centers (ECC) handle incidents other than public safety and the working group needed to include an approach to incident handling for non-public safety incidents.

Second, was to provide enough content for ECC leadership to effectively communicate the steps involved in the call processing and incident handling effort and to introduce factors that may affect call answering and incident handling times. With call answering time standards available and being mandated for ECCs, it is important to know the steps and anomalies involved in the process. This will fill any gaps in understanding why the ECC is or is not able to meet established mandates and institute any mitigation measures as needed.

Third, was to introduce call processing and incident handling metrics that were developed as part of a study produced for APCO International by the Center for Social Science Research (CSSR) at George Mason University (GMU). The goal of the study was to capture and provide data on how long ECCs take to process different incident types and what factors might affect those times. The study also took a deeper look at ECC call processing and incident handling times for mission critical call taking, conditional call taking, call answer, and incident handling time performance, by the size of the ECC, public safety discipline, and incident type.

The Public Safety Communications Incident Handling Process Working Group, in conjunction with the APCO Standards Development Committee, is pleased to present this revised Public Safety Communications Incident Handling Process standard. The Working Group consisted of Public Safety Communications professionals from various parts of the United States who were instrumental in the revision of the workflows, steps, and decision-making processes involved in the call processing and incident handling effort.

The workflows in this standard are basic and illustrate effective call and incident handling steps from start to finish. The Working Group realized that every ECC is different in size, configuration, and methods used for call processing and incident handling and it is incumbent upon the AHJ to determine how results are achieved. This revised standard provides ECCs with recommended minimum steps and decision-making processes for the handling of requests for service that come into the ECC. Moreover, the information in this standard may offer valuable insight into matters such as how long it takes for call answer times, call answer to incident entry times, and incident entry to dispatch time, by discipline and incident type.

The details provided may serve as a benchmark and may complement what is currently being used by the agency. A collection of other performance metrics standards is listed in the references and resources section.

Agencies are not required to adopt this process; any established process would be conducted voluntarily.

Chapter One

INTRODUCTION

The Emergency Communications Center (ECC) is the essential link between the need for public safety services and the resources necessary to help resolve those needs. Crucial to this undertaking is the Public Safety Telecommunicator (PST) call processing and incident handling effort. The detail provided in this revised standard consists of identifying the minimum steps and decision-making processes for the call processing and incident handling effort. In addition, performance metrics are provided from a collaboration between the Center for Social Science Research (CSSR) at George Mason University (GMU) and APCO potentially serving as benchmarks for ECCs. This revision serves as a communication instrument for ECC managers to articulate the steps involved in the call processing and incident handling effort, develop an understanding of the factors affecting call processing times, and setting reasonable expectations for their respective ECC.

SCOPE

This standard contains multiple aims for the ECC as it relates to call processing and the incident handling process. Those include:

- A framework for effective call processing and incident handling processes.
- Effective practices for call processing and incident handling (types, categories).
- Effective processes for call processing and incident handling from initial contact through disposition.
- Specific metrics to measure ECC performance in call processing and the incident handling process.
- List causal factors that lead to delay in the call processing and incident handling effort

This standard does not include operational or technical solutions required to address specific or individual situations, nor does it include specific vendor recommendations. The focus is on effective practices and processes for handling requests for service by the ECC.

The ECC should apply this standard to achieve the most efficient and effective call processing and incident handling process.

PURPOSE

To assist the ECC with establishing, implementing, and maintaining effective practices and processes related to handling requests for service by the ECC.

Chapter Two

Agency Responsibilities

SCOPE

This chapter defines the Agency Having Jurisdiction (AHJ) responsibilities for guiding employees to successfully manage an incident. Included are the minimum requirements for successful adherence, such as establishing effective written directives, performance management, quality assurance, and training.

2.1 Establish a Written Directive System

In the call processing and incident handling effort, agencies shall ensure the Emergency Communications Center (ECC) and its staff are set up for success.

- 2.1.1 The AHJ shall provide the Public Safety Telecommunicator (PST) with guidelines, protocols, and/or written directives for the processing of information in the management of incidents.
- 2.1.2 The AHJ shall regularly create, review, and update as appropriate the guidelines, protocols, and/or written directives providing direction to PSTs for processing incidents.

2.2 Establish a Performance Management System

- 2.2.1 The AHJ shall provide training and set performance expectations for the PST to apply the guidelines, protocols, and/or written directives related to the processing of incidents.
- 2.2.2 The AHJ shall ensure the PST is adequately trained, prepared, and ready to process any incident received using technologies provided by the agency.
- 2.2.3 The AHJ shall provide an environment where the PST is encouraged to participate regularly in performance reviews.
- 2.2.4 The AHJ shall establish a system by which the job performance of the PST is regularly reviewed and evaluated based upon acceptable incident handling practices or standards.
- 2.2.5 The AHJ shall provide the PST with a regular review of performance, documenting and addressing unacceptable performance through remediation or other appropriate means.
- 2.2.6 The AHJ shall ensure a fair and consistent application of its disciplinary process associated with job performance.
- 2.2.7 The AHJ shall provide a mechanism during the performance review that encourages and allows the PST to identify goals and objectives.
- 2.2.8 The AHJ shall provide the PST with applicable training and continuing education opportunities.

Chapter Three

Public Safety Telecommunicator (PST) Responsibilities

SCOPE

During the call processing and incident handling effort, the PST is tasked with receiving, processing, and transmitting public safety information to the appropriate responders. This chapter looks to define the roles and responsibilities for PSTs concerning the call and incident handling process.

3.1 PST Responsibilities Relative to Call Processing and Incident Handling

The PST's role and responsibilities in the call processing and incident handling effort cannot be overstated. The PST must be ready to process any incident received utilizing the technological systems provided by the AHJ. The public and public safety stakeholders demand unparalleled job performance and excellent customer service from PST. This can only be accomplished when the PST is mentally and physically fit for duty, well trained, and remains in a constant state of readiness at all times.

3.2 Initial Process

- 3.2.1 The PST shall be knowledgeable of how calls are received by the ECC (i.e., telephone, in person, radio, text to 9-1-1, automated data).
- 3.2.2 The PST shall be knowledgeable of the standard answering techniques used for 9-1-1 calls as required by the AHJ.
- 3.2.3 The PST shall be knowledgeable of the standard answering techniques for non-emergency calls as required by the AHJ.
- 3.2.4 The PST shall be knowledgeable of the information gathering requirements as required by the AHJ.
- 3.2.5 The PST shall be knowledgeable of the process and course of action taken when transferring emergency calls as required by the AHJ.
- 3.2.6 The PST shall be knowledgeable of the policy and procedure for processing abandoned calls as required by the AHJ.
- 3.2.7 The PST shall be knowledgeable of the policy and procedure for processing disconnected calls as required by the AHJ.
- 3.2.8 The PST shall be knowledgeable of the policy and procedure for processing open line and non-responsive calls as required by the AHJ.

- 3.2.9 The PST shall be knowledgeable of the technology used to receive and process calls (i.e., CAD, 9-1-1, CPE, TDD, etc.) in the ECC.
- 3.2.10 The PST shall be competent in the use of technology when an incident is received (i.e., by telephone, radio, CAD, 9-1-1 CPE, TDD, etc.) in the ECC.

3.3 When Receiving Requests for Service

- 3.3.1 The PST shall be prepared to process any incident received using technology provided by the Agency.
- 3.3.2 The PST shall greet the reporting party (RP) using AHJ policy, procedure and/or written protocols.
- 3.3.3 The PST shall control and maintain the conversation by calmly and professionally asking questions, while also listening to the information being provided.
- 3.3.4 The PST shall document the call using technological systems provided by the AHJ.

Chapter Four

Call Processing

SCOPE

This chapter looks to identify and describe the characteristics involved in the call processing phase. The intent is to provide ECC leadership with adequate information allowing effectual communication of factors and steps involved that may affect call processing times. In addition, performance metrics are provided that align with the objectives of the ECC and the duties of the PST relating to call processing.

4.1 Call Processing

The term “call processing” is widely used in the public safety communications industry and embodies different meanings. From a technical perspective, it denotes a sequence of operations performed by a switching system from the acceptance of an incoming call through the final disposition of the call.¹ From an ECC operation perspective, it implies a course of action performed by the PST that includes answering the call, managing the conversation, and gathering pertinent information related to the incident.

In the ECC, the call processing phase involves more than simply answering the call. It involves such actions as call delivery, call receipt, call interrogation, and initiating incident documentation. In the call processing phase, there is a technical and human interface. Each interface has time element associated, is varied from start to finish, and is dependent on ECC size and operational structure.

Note to reader: The working group recognized no two ECCs are the same and each may have different methods for call processing. The content for this chapter originated from a consensus-based workflow developed by the working group for the call processing effort and establishes a straightforward benchmark for agency use. Ultimately, it is up to the AHJ to determine the respective workflows and call processing and incident handling metrics for their respective ECC.

[Chapter 6](#) will present factors, identified in an APCO and GMU/CSSR study,² that will affect call processing times and the importance for ECC management to have systems in place allowing for the collection of the data for planning and reporting purposes.

Assumptions:

- The PST meets requirements as listed in [2.2.2](#) of this document.
- The ECC utilizes Customer Premises Equipment (CPE).
- The ECC is using a computer aided dispatch (CAD) system for incident handling or other applicable record management system (RMS) and/or processes.
- The reader has studied [Appendix A](#), titled Workflow: Call Processing Phase.

¹ General Services Administration. Telecommunications: Glossary of Telecommunication Terms (updated 2000). “Call Processing: 1...”. <https://www.its.bldrdoc.gov/fs-1037/fs-1037c.htm> . Accessed 09/02/2021.

² APCO and GMU CSSR. Call Handling and Incident Processing at ECCs (2019).

4.2 Call Delivery Method

The call processing phase contains a technical and user interface component. For instance, an assortment of technologies is available and used by a person(s) to contact an AHJ for public safety assistance during emergency and non-emergency situations (see “Call Delivery” in [Appendix A](#)).

4.2.1 Start Point – the initiating component in the call delivery phase is the person or entity requesting public safety service from the AHJ. The person or entity may use the following technological means to contact the AHJ:³

- 4.2.1.1 Wireline 9-1-1 (Basic and Enhanced)
- 4.2.1.2 Wireless 9-1-1 (Phase I, Phase II, Location Based Routing)
- 4.2.1.3 Voice over Internet Protocol (VoIP)
- 4.2.1.4 Internet
- 4.2.1.5 SMS/Text to 9-1-1
- 4.2.1.6 Telematics
- 4.2.1.7 10-digit or 20-digit dedicated emergency lines
- 4.2.1.8 Tip Lines
- 4.2.1.9 Third party applications (pre-alerting systems, Smart 9-1-1, RapidSOS)
- 4.2.1.10 Direct Dial Lines (local business, security-sensitive business, alarm companies)
- 4.2.1.11 Dedicated Ring-Down Circuits (crash phone, emergency call boxes, pre-alerting systems)

4.3 Call Receipt

In the call processing phase, call receipt entails the method by which the call for emergency service is delivered and received in the ECC.⁴ Call Set-Up with legacy and newer technology, may result in differences in how the call is delivered and received. It will be up to the AHJ to determine how this is achieved and how they want to measure performance. The AHJ should consider referring to industry standards and best practices for this endeavor.⁵ At a minimum:

4.3.1 The AHJ shall ensure the integrity and effectiveness of the call set-up process in the delivery of emergency calls to the ECC.

³ Some of the technological methods listed may not be applicable in your area.

⁴ APCO ANS 1.113.1-2019 Public Safety Communications Incident Handling Process. “3.1. Incident Process Elements/Tasks.”

⁵ Refer to most current versions of APCO/NENA ECC Service Capability Rating Scale for E9-1-1 and NG9-1-1 Environments and CSRIC Working Group 1 Final Report – Task 1: Optimizing PSAP Re-Routes - 9-1-1 Call Routing Best Practices.

- 4.3.2 The AHJ shall ensure a redundant system is in place to avoid an interruption in service and to prevent a single point of failure.
- 4.3.3 The AHJ shall ensure the call set-up and delivery technology and equipment are maintained according to manufacture specifications.
- 4.3.4 The AHJ shall ensure the equipment room is maintained following best practices and industry standards.⁶
- 4.3.5 The AHJ shall ensure only trained and/or certified technicians install and maintain call delivery technology and equipment.
- 4.3.6 The AHJ shall ensure the ECC has contingency plans in place in the event the call delivery technology and/or equipment fails.
 - 4.3.6.1 The AHJ shall ensure such plans are conducted at intervals as prescribed by the Agency, but not less than annually.
- 4.3.7 The AHJ shall ensure the PST is trained and ready to process any service request using technologies provided by the Agency.
 - 4.3.7.1 This shall include automated data, specifically technologies which do not allow 2-way communication between the PST and the source.
 - 4.3.7.2 This shall include Customer Premises Equipment (CPE), Computer Aided Dispatch (CAD) systems, TDD/TYY, etc.
- 4.3.8 **Field-Initiated Incidents⁷** - In the call processing phase, there are times when incidents received by the PST originate from units in the field. At a minimum:
 - 4.3.8.1 The AHJ shall ensure the integrity and availability of the delivery of emergency calls to the ECC from units in the field. The AHJ should determine how this will be achieved.
 - 4.3.8.2 The AHJ shall develop and maintain procedures to identify the handling of field-initiated incidents.
 - 4.3.8.3 The AHJ shall develop opportunities to discuss procedures and protocols with internal stakeholders to improve operational efficiency of the call processing effort.
 - 4.3.8.4 The PST should understand and be able to recognize emergency calls that will come from field units. The following identifies the tasks associated with field-initiated incidents:
 - Receive request for service (telephone, radio, etc.)
 - Acknowledge unit

⁶ Some examples of these are telecom, computer and/or IT server rooms. Industry standards development bodies for such rooms are TIA, BICSI, NEC, NFPA, IEEE, etc.

⁷ Note: this section is applicable to public safety and non-public safety field-initiated incidents. If the ECC provides dispatching services for stakeholders within the organization, other than PS, this section can be used for developing operational controls.

- Initiate incident documentation
- Establish location and incident type

4.3.8.5 The AHJ shall ensure that PST training programs relating to field-initiated incidents are developed and updated (as applicable).

4.4 Call Interrogation

In the call processing phase, call interrogation begins when the call is answered by the PST, and includes tasks such as providing a standard greeting, interview of the caller, extracting pertinent information, and ends when the PST has received appropriate information as defined in Agency procedures and protocols.⁸

It is important to note the call interview process can continue after the emergency unit notification if the incident requires continuous communication with the caller on the phone to get further information.

- 4.4.1 The AHJ shall ensure a call interview system is in place and the PST is trained prior to utilization.
- 4.4.2 The AHJ shall ensure a quality assurance/improvement process is in place for the call interrogation effort.
- 4.4.3 The PST shall use and follow the AHJ's policies, procedures, and/or written protocols related to the call interrogation process.
- 4.4.4 The PST shall control and maintain the conversation by asking pertinent questions to guide the caller, while also listening to the information provided by the caller.
- 4.4.5 The PST's primary concern should always be the safety of the caller when conducting their interview.
 - 4.4.5.1 The PST shall use and follow the AHJ's policies, procedures, and/or written protocols as related to ensuring the safety of the caller.
- 4.4.6 When receiving the call, the PST shall greet the caller and/or reporting party (RP) following the AHJ's policy and procedure.
- 4.4.7 After greeting the caller, the PST shall determine the exact location where assistance is needed including, but not limited to:
 - 4.4.7.1 The PST shall verify numerical addresses, street names and cross streets, intersections, direction identifiers and mileposts.
 - 4.4.7.2 If specifics are not known, the PST shall request landmarks or estimated proximity to landmarks.

⁸ BJA. Justice Center – The Council of State Governments. 911 Dispatch Call Processing Protocols: Key Tools for Coordinating Effective Call Triage. Available at <https://csgjusticecenter.org/wp-content/uploads/2023/11/911-Dispatch-Call-Processing-Protocols-Key-Tools-for-Coordinating-Effective-Call-Triage.pdf>.

- 4.4.7.3 The PST shall verify location information provided by the caller. This should be done in tandem with the caller and AHJ provided equipment, as applicable.
- 4.4.7.4 Applications such as agency specific GIS mapping systems, and other third-party applications the AHJ has provided to the PST, should be used to help locate callers unsure of their locations.
 - 4.4.7.4.1 The AHJ shall assess the limitations of any application authorized for use in the ECC.
 - 4.4.7.4.2 The AHJ shall ensure the PST is trained in the use of any authorized applications.
- 4.4.8 After determining the location where assistance is needed, obtaining a callback number is necessary in the event the call is disconnected.
 - 4.4.8.1 The PST shall obtain a callback number of the RP before obtaining additional information.
 - 4.4.8.2 The PST shall verify the callback number. Verification will be completed per AHJ policy and procedure. This should be done in tandem with the caller and AHJ provided equipment, as applicable.
- 4.4.9 After determining the callback number, the PST shall determine the nature of the incident.
 - 4.4.9.1 The PST shall ensure a CAD record has been initiated.
 - 4.4.9.2 The PST shall select an incident type following the AHJ's policy and procedure.
 - 4.4.9.3 The PST shall consider and identify potential safety issues when determining the appropriate incident type.
 - 4.4.9.4 If the nature of the incident requires maintaining contact with the RP, the PST shall perform, at a minimum, the following:
 - 4.4.9.4.1 Continuously gather information.
 - 4.4.9.4.2 Provide instructions.
 - 4.4.9.4.3 Update CAD record as needed until it is determined contact is no longer needed.
 - 4.4.9.5 If the nature of the incident does not require maintaining contact with the RP, the PST shall provide any appropriate instructions and then terminate the call.

4.5 Initiate Incident Documentation: (PST Action Point)

In the call processing effort, initiating incident documentation begins immediately when the call is answered by the PST and continues into the call interrogation process. Incident documentation continues through the incident handling phase and is covered in detail in [Chapter 5](#) of this document.

- 4.5.1 The AHJ shall ensure the integrity and availability of incident documentation systems in the ECC.
- 4.5.2 The AHJ shall ensure a quality assurance/improvement process is in place for incident documentation.
- 4.5.3 The PST shall use and follow the AHJ's policy, procedure, and protocol as related to the incident documentation process.
- 4.5.4 The PST shall validate and input information as received from the reporting party or entity.
- 4.5.5 The PST shall ensure the incident documentation is correct and complete.

4.6 Call Processing Performance Metrics⁹

A popular performance metric used to gauge an ECC's effectiveness is the call processing time. Call processing times are not simple measures and can be counterproductive if not properly developed. To be realistic and reliable, the creation of such metrics must take into consideration all factors involved in the call processing effort. Much of this detail is depicted in this chapter and also shown in [Appendix A](#) titled Call Processing Workflow.

This section intends to provide ECC management with useful areas of measurement and performance metrics for measuring call processing times in their respective centers.

- 4.6.1 **Administration** - Each event listed will have a time element involved that will vary from start to finish. Chapter 6 will presents factors that will affect call processing and incident handling times. It is important for ECC management to have a system(s) in place that allows for the collection of this data for planning and reporting purposes.
 - 4.6.1.1 The AHJ shall determine the best method for collecting the call processing data.
 - 4.6.1.2 The AHJ shall have a written directive that specifies how the data collection process is performed. At a minimum, such directives shall address the following:
 - 4.6.1.2.1 Identify and choose data record method (work sampling, vendor provided software, spreadsheet, etc.).
 - 4.6.1.2.2 Identify parameters for data collection.
 - 4.6.1.2.2.1 Collect data at certain times of the day rather than continuously.
 - 4.6.1.2.2.2 Establish a time interval to ensure consistency (30, 90, 120 days, and annual).

⁹ The call processing performance metrics in the GMU report were developed from data obtained from a survey of ECCs of various sizes, call interrogation requirements, call priority times (urgencies), data entry methods, and may not reflect that of your agency. Agencies may want to be more specific with their call processing benchmarks and/or metrics.

4.6.1.2.2.3 Average out the times for each component.

4.6.1.2.2.4 Collect data and separate it by public safety discipline (Law, Fire, EMS).

4.6.1.3 The AHJ shall ensure those who will be performing data collection tasks in the ECC are trained.

4.6.2 Call Set Up Time¹⁰ - This call processing metric is designed to measure the time it takes for a public safety call to reach the back-room CPE in the ECC until the call is present on the CPE user screen and begins to ring.

The AHJ's requiring call set up data may be able to get this information from their 9-1-1 routing system software. NG9-1-1 routing system's may be equipped to provide data that records the time the public safety call was presented to the NG9-1-1 router system.

4.6.2.1 The AHJ should collaborate with network operators and service providers to determine the best method for collecting this data.

4.6.2.2 Areas of Measurement:

4.6.2.2.1 The AHJ shall measure the time it takes for a public safety call to arrive at the back-room CPE up to the time the call is presented on the CPE user screen and begins to ring.

4.6.3 Call Answer Time¹¹ - The call answer time performance metric occurs during the call receipt phase. It is the time when the call arrives into the ECC up until the time it is acknowledged by the PST.

ECC leadership must understand that there are factors that can and will affect call answer times (see [Chapter 6](#)). Based on this concept, and the data contained in the GMU report, two minimum standards have been established for the call answer time performance metric.

4.6.3.1 The AHJ shall establish call answer times for their respective ECC's.

4.6.3.1.1 The call answer time(s) established shall meet or exceed PSC Incident handling benchmarks/metrics.

4.6.3.2 For ECC's of any size, the call answer time shall be 20 seconds or less 90 percent of the time.

4.6.3.3 For ECC's of any size, the call answer time shall be 10 seconds or less 75 percent of the time.

¹⁰ This performance metric and may or may not be required by the AHJ. Regardless, call set-up times should not be included in call answer time evaluations. The time when the phone is actually ringing in the ECC, should be included in call answer time.

¹¹ The call answer time metric originates from a 2019 study conducted by GMU/CSSR on behalf of APCO focusing on call handling and incident processing times, specifically, "ECC Call Answer Times" shown in Figure 13 on Pg. 29 which reflects the data based on the majority of ECCs that answered calls within the 10 second 75% of the time.

4.6.3.4 Areas of Measurement

To conduct the call answer time measurement:

4.6.3.4.1 The AHJ shall measure the point in time when a public safety call for service arrives at the CPE up to the time the call is answered.

4.6.3.4.2 The AHJ should measure the number of emergency and non-emergency calls received by day, week, month, and year.

4.6.3.4.3 The AHJ should measure the number of wireline and wireless emergency and non-emergency calls received.

4.6.3.4.4 The AHJ should measure the number of hang-up calls.

4.6.3.4.5 The AHJ should measure the number of abandoned calls.

4.6.3.4.6 The AHJ should measure the number of transferred calls.

4.6.3.4.7 The AHJ should collect and separate data by public safety entity (Law, Fire, EMS).

4.6.3.5 The AHJ shall get this data from their respective 9-1-1 systems or CAD system software, as applicable.

4.6.3.6 The AHJ should collaborate with network operators and service providers to determine the best method for collecting the data.

4.6.4 Call Answer to Incident Entry – by PS Discipline - The call answer to incident entry performance measure occurs from the time a call is answered by the PST to initiation of incident entry into record collection medium.

ECC leadership must understand that there are factors that can and will affect call answer to incident entry times (see [Chapter 6](#)). Therefore, two minimum standards for this process have been established and are listed below. Each metric may function as a target for ECCs to strive for and establish reasonable expectations for call answer to incident entry times.

4.6.4.1 This standard is intended to be applied to emergency calls for service. The AHJ shall identify applicable incident types and establish call answer to incident entry time – by PS discipline performance metrics for their respective ECC.

4.6.4.1.1 The call answer to incident entry – by PS discipline time(s) shall meet or exceed PSC incident handling benchmarks/metrics for those incident types identified by the AHJ.

4.6.4.2 For Law Enforcement Calls, the call answer to incident entry time¹² for ECC's of any size:

¹² APCO/GMU report Figure 14: Law Enforcement Call Answer to Incident Entry times (Page 30).

4.6.4.2.1 Shall be within 80 seconds or less 90 percent of the time.

4.6.4.2.2 Shall be within 60 seconds or less 75 percent of the time.

4.6.4.3 For Fire¹³ and EMS¹⁴ Calls, the call answer to entry time for ECC's of any size::

4.6.4.3.1 Shall be within 60 seconds or less 90 percent of the time.¹⁵

4.6.4.4 Areas of Measurement:

To conduct the call answer to incident entry time measurement:

4.6.4.4.1 The AHJ shall measure the time from when the call is answered to initiation of incident entry.

4.6.4.4.2 The AHJ shall obtain this data from their respective 9-1-1 systems or CAD system software, if applicable.

4.6.4.4.3 The AHJ should collaborate with network operators and service providers for guidance on the best method for collecting the data.

4.6.4.4.4 The AHJ should collect data and separate it by public safety discipline (Law, Fire, EMS), as applicable.

Note to the reader: [Appendix D](#) contains information on the average call answer time for ECCs in APCO and GMU/CSSR study and listed by ECC size. The data from the study is informational in nature and may serve as a benchmark for your agency.

4.7 Workflow

Workflow processes happen in every kind of business and industry. When data is passed between humans and/or systems, a workflow is created. In the call processing effort, workflow processes are abundant. Understanding the workflow and their processes is an essential part in the development of procedures and protocols. A workflow process will show the flow of work from start to finish as well as affirm all activities. A workflow consists of the following elements:

- Steps necessary to complete a task.
- Resources required for each step.
- Personnel responsible for each step.
- Interaction between different steps.

4.7.1 The AHJ should refer to the call processing workflow in [Appendix A](#) and develop a call processing workflow unique to them.

¹³ APCO/GMU report Figure 16: Fire Call Answer to Incident Entry times (Page 32)

¹⁴ APCO/GMU report Figure 18: EMS Call Answer to Incident Entry times (Page 34)

¹⁵ Based on the study results, the Call Answer to Incident Entry times listed for Fire and EMS disciplines did not change for the numbers listed at the 75 and 90 percentile.

- 4.7.2 The AHJ should use the call processing workflow to monitor and ensure work is done predictably as intended.
- 4.7.3 The AHJ should use the call processing workflow for streamlining and optimizing work activities.
- 4.7.4 The AHJ should use the call processing workflow for managing risk.
- 4.7.5 The AHJ should use the call processing workflow to enhance accountability.

Chapter Five

Incident Handling

SCOPE

This chapter looks to identify and describe the characteristics involved in the incident handling phase. The intent is to provide ECC leadership with enough information that allows them to effectively communicate the steps involved and the factors that may affect incident handling times. Performance metrics are provided that align with the objectives of the ECC and the duties of the PST as they relate to the incident handling phase. The performance metrics provided can be used by agencies to gauge the ECC's effectiveness in the incident handling effort.

5.1 Incident Handling

In the ECC, "Incident Handling" involves activities performed by the PST that include such tasks as incident data entry, determination of jurisdiction, call transfer, determining priority, and dispatching assigned units.

In most cases, the incident handling phase occurs concurrently with the call processing phase. This is dependent on the concept of operations established for the ECC. For example, in ECCs where the PST performs both the call taking and dispatch function, the PST will perform a majority of call processing and incident handling activities simultaneously.

In medium to large ECCs where the call taking and dispatching functions are separate, once the call taker has determined from the caller, the address/location, callback number and nature of the incident (police, fire, or EMS), the PST may transfer the incident to an appropriate radio dispatcher for further call processing, incident handling and dispatch.

Note to reader: The workgroup recognized that no two ECCs were the same and each may have differing methods for incident handling. The content for this chapter originated from a consensus-based workflow developed by the workgroup for the incident handling effort and will serve as a benchmark. It is up to the agency to determine the respective workflows for their ECC.

[Chapter 6](#) will present factors identified in an APCO and GMU/CSSR study,¹⁶ that will affect incident handling processing times and it is important for ECC management to have systems in place that allow for the collection of this data for planning and reporting purposes.

Assumptions:

- The AHJ has provided the ECC with clear guidance regarding its geographical service area.
- The PST, through the use of appropriate interrogation and/or interviewing techniques, has gathered and verified the location information received.
- The PST meets the requirements as listed in [Chapter 2](#), section [2.2.2](#).

¹⁶ APCO and GM CSSR. Call Handling and Incident Processing at ECCs (2019)

- The ECC is using a computer-aided dispatch system for incident handling or other applicable records management systems and/or processes.
- The reader has studied [Appendix B](#) – Workflow: Incident Handling Phase.

5.2 Determine Incident Jurisdiction (PST Decision Point)

In the incident handling phase, this step involves the PST determining if the incident has occurred within the AHJ's geographical service area. At a minimum:

- 5.2.1 The PST shall follow AHJ policy and procedure related to incident jurisdiction to determine if the Agency will manage the incident and its response.
- 5.2.2 (If Yes) The incident and response will be managed by the AHJ, proceed to 5.3.
- 5.2.3 (If No) The PST determines the incident to be in another locality due to jurisdictional boundaries or mutual aid agreements. At a minimum:
 - 5.2.3.1 When handling callers (i.e., wireline, wireless, IP), the PST may have to make a call transfer and/or referral. In such cases, the PST shall follow the AHJ's policy and procedure and/or call transfer guidance [listed in 5.6](#).
 - 5.2.3.2 When handling in-person contacts (i.e., walk-ins, visitors, etc.), the PST shall provide aid following AHJ's policy and procedure.
- 5.2.4 At the completion of the task, the PST shall finalize incident documentation following the AHJ's policy and procedure.

5.3 Determine Incident Priority (PST Decision Point)

This step involves the PST determining the priority for the incident occurring within its jurisdiction. At a minimum:

- 5.3.1 The PST shall determine the priority for emergency and/or non-emergency incidents following AHJ policy and procedure.
- 5.3.2 The PST shall use caller interviewing/interrogation techniques, as provided by the AHJ for determining incident priority.
- 5.3.3 The AHJ shall develop and provide the ECC with clear guidance of its incident priority determination requirements.
- 5.3.4 The AHJ shall determine the priority and order of the methods used to receive calls.
- 5.3.5 The AHJ shall ensure the most critical incidents are managed first, with the lesser critical incidents placed in queue.

5.3.6 The AHJ shall provide clear guidelines for determining and/or clarifying types of incidents as emergency or non-emergency.

5.3.7 At a minimum, the AHJ shall develop incident priority guidance for the following:¹⁷

5.3.7.1 In Progress Incidents – Are events presently occurring and/or may include an imminent danger to life or potential threat to a person or property? “In progress” incidents are usually assigned with the highest priority levels. Most fire service and EMS calls fall into this category.

Examples: Active shooter, subject brandishing a visible weapon in threatening manner, vehicle crash with multiple injuries, structure fire, an armed robbery with suspects on scene, officer needs help, heart attack victim.

5.3.7.2 Just Occurred Incidents - Are those events that have occurred within a timeframe established by the AHJ. Events may be classified as just occurred when there is no immediate threat to life or property.

“Just occurred” incidents are generally a lower priority than “in progress” incidents but higher priority than “delayed” incidents.

Examples: A law enforcement, fire, or EMS incident occurring less than five minutes ago; a suspect involved in a burglary who left 15 minutes ago by foot or five minutes ago by car; a hit & run accident occurred less than five minutes ago.

5.3.7.3 Delayed Incidents - Are those events that have occurred when the time of occurrence is unknown, and the incident requires a report or investigation? “Delayed Incidents” generally are of lower priority than both “in progress” and “just occurred” incidents.

Examples: A law enforcement, fire, or EMS incident that occurred more than six hours ago; burglary occurring more than 24 hours ago; a suspicious vehicle seen several times in past week but not currently in area; civil stand-by; shoplifter in custody, patient transfer, fire hydrant inspections.

5.4 Determine Dispatch Requirements (PST Decision Point)

This step involves the PST determining if a dispatch is required for the incident occurring within its jurisdiction. At a minimum:

5.4.1 EMERGENCY (Incidents requiring a dispatch):

5.4.1.1 Once the PST has obtained essential information, the incident shall be immediately dispatched to the appropriate responder(s), per AHJ policy.

5.4.1.2 The PST shall determine if additional resources for the incident will be required. In

¹⁷ APCO Institute Curriculum Public Safety Telecommunicator (PST) course definitions (Module 11).

doing so, the PST:

5.4.1.2.1 Shall determine what additional resources are needed (see guidance provided in [section 5.5](#)).

5.4.1.2.2 Shall dispatch additional resources to field responder(s) as appropriate.

5.4.1.3 The PST shall provide any additional information to responder(s), as applicable.

5.4.1.4 The PST shall monitor responder(s) under assignment and in their control.

5.4.1.5 The PST shall ensure acknowledgement of responder(s) radio and/or mobile data terminal messages.

5.4.1.6 The PST shall update incident documentation, as applicable.

5.4.1.7 The PST shall finalize incident documentation when the incident is terminated.

5.4.2 NON-EMERGENCY (Incidents requiring a dispatch):

5.4.2.1 Once the PST has obtained essential information, the incident shall be dispatched to the appropriate responder(s), per AHJ policy.

5.4.2.2 The PST shall determine if additional resources for the incident will be required. In doing so, the PST:

5.4.2.2.1 Shall determine what additional resources are needed (see guidance provided in [section 5.5](#)).

5.4.2.2.2 Shall dispatch additional resources to field responder(s) as appropriate.

5.4.2.3 The PST shall provide any additional information to responder(s), as applicable.

5.4.2.4 The PST shall monitor responder(s) under assignment and in their control.

5.4.2.5 The PST shall ensure acknowledgement of responder(s) radio messages.

5.4.2.6 The PST shall update incident documentation, as applicable.

5.4.2.7 The PST shall finalize documentation when the incident is terminated.

5.4.3 NON-EMERGENCY (Incidents that do not require a dispatch):

5.4.3.1 The PST shall provide information and/or assistance to the caller, as applicable.

5.4.3.2 The PST shall update incident documentation, as applicable.

5.4.3.3 The PST shall finalize incident documentation when the incident is terminated.

- 5.4.4 The AHJ shall provide the ECC with a dispatch response plan and/or standard operating procedures establishing and identifying the appropriate dispatch and/or responder(s) for all incidents.
 - 5.4.4.1 These plans and/or procedures shall include the type of preliminary dispatch information to be relayed to responder(s).
 - 5.4.4.2 These plans and/or procedures shall be written for extreme emergency conditions or large-scale tactical operations to address overload of the AHJ resources (i.e., staffing, radio network, etc.).
 - 5.4.4.3 These plans and/or procedures shall include any mutual aid unit(s) as identified by the AHJ.

5.5 Determine Additional Resources

This step involves the PST determining if additional resources are needed for the incident occurring within its jurisdiction. At a minimum:

- 5.5.1 The PST shall follow AHJ policy and procedure when additional resources are needed in an incident.
- 5.5.2 At a minimum, the AHJ shall provide guidance on additional resources such as but not limited to:
 - 5.5.2.1 Backup unit(s)
 - 5.5.2.2 Other disciplines (local, state, federal or tribal)
 - 5.5.2.3 Fire, Medical, Law Enforcement
 - 5.5.2.4 Utility/Public Works (e.g., power, gas, electricity, highway, water/sewer, etc.)
 - 5.5.2.5 Specialty (E.g., bomb squads, mass casualty, hazmat units, search and rescue, air support, animal services, etc.)
- 5.5.3 The PST shall be familiar with all resources available from local, state, federal, or tribal resources.

5.6 Call Transfer/Call Referral

A call transfer is an action taken by the PST to redirect a call (emergency or non-emergency) to another Agency Having Jurisdiction (AHJ). For example, this action may be due to an incident occurring in another jurisdiction.

In other examples, a call received may be transferred to another ECC, emergency services agency, or to a non-emergency service provider that may be more appropriate to assist the caller's needs (i.e., utility company, 988 Suicide and Crisis Lifeline, mental health services, animal control, poison control,

311, etc.).

In these circumstances the PST may have no need for additional information and therefore may disconnect once the transfer has been verified as successfully completed.

- 5.6.1 (If a call transfer is required) The incident is determined to be out of the jurisdiction of the AHJ, or if another service may be more appropriate to assist the caller, the PST shall provide pre-arrival instructions, if provided by the AHJ, and transfer the incident to the Agency Having Jurisdiction (AHJ) and/or appropriate service provider.
- 5.6.2 The AHJ shall provide the PST with clear guidance on call transfer and call referral requirements.
- 5.6.3 The PST shall follow the call transfer and call referral requirements provided by the AHJ.
- 5.6.4 The PST shall ensure connectivity with the other AHJ, or appropriate service provider, has occurred prior to terminating the call.
- 5.6.5 The AHJ should be mindful that call transfers will delay the public safety response.
- 5.6.6 The AHJ should be mindful that when a 911 call is transferred, the 911 trunkline may be unavailable until the call is completed.¹⁸
 - 5.6.6.1 The AHJ shall take reasonable steps to lessen the impact on those dialing 911 for assistance.
 - 5.6.6.2 A mitigation measure the AHJ may require is the call referral (see definition).
- 5.6.7 The AHJ should attempt to minimize the number of call transfers to the lowest extent possible.

5.7 Incident Handling Performance Metrics¹⁹

At present, there are no measures in place addressing incident handling processing times in the ECC. This section intends to close this gap by providing performance metrics with useful areas of measurement for incident handling times in ECC.

- 5.7.1 Incident Entry to Call Dispatch – by PS Discipline - This incident handling performance metric measures time from initiation of incident entry up to the time the incident is dispatched and assigned to responder(s). This may be identified as verbal dispatch of the call, completion of assignment in CAD, silent dispatch to Mobile Data Terminal (MDT), or initiation of tones.

¹⁸ This may occur in legacy systems and not in NG911 systems.

¹⁹ The incident handling processing performance metrics in the GMU report were developed from data obtained from a survey of ECCs of various sizes, call interrogation requirements, call priority times (urgencies), data entry methods, and may not reflect that of your agency. Agencies may want to be more specific with their incident handling performance benchmarks and/or metrics.

ECC leadership must understand that there are factors that can and will affect incident entry to call dispatch times (see [Chapter 6](#)). Therefore, two minimum standards for this process have been established and are listed below.

- 5.7.1.1 This standard is intended to be applied to emergency calls for service. The AHJ shall identify applicable incident types and establish incident entry time to call dispatch – by PS discipline performance metrics for their respective ECC.
 - 5.7.1.1.1 The incident entry to call dispatch – by PS discipline time(s) shall meet or exceed PSC incident handling benchmarks/metrics for those incident types identified by the AHJ.
- 5.7.1.2 For Law Enforcement Calls, the incident entry to call dispatch time for ECC's of any size:
 - 5.7.1.2.1 Shall be 120 seconds or less 90 percent of the time, and
 - 5.7.1.2.2 Shall be 90 seconds or less 75 percent of the time.
- 5.7.1.3 For Fire and EMS Calls, the incident entry to call dispatch time for ECC's of any size:
 - 5.7.3.3.1 Shall be 90 seconds or less 90 percent of the time.
- 5.7.1.4 Areas of Measurement: To conduct the incident entry to call dispatch time measurement:
 - 5.7.1.4.1 Law Enforcement Incidents - For incidents of this type, the performance measurement shall occur when the PST begins the incident entry process, up to the time the call is dispatched to law enforcement responder(s).
 - 5.7.1.4.2 Fire Incidents - For incidents of this type, the performance measurement shall occur when the PST begins the incident entry process, up to the time the call is dispatched to fire service responder(s).
 - 5.7.1.4.3 EMS Incidents - For incidents of this type, the performance measurement shall occur when the PST begins the incident entry process, up to the time the call is dispatched to EMS service units.

5.8 Workflow

Refer to [Appendix B](#) – Workflow: Incident Handling Phase and [Chapter 4](#), Section 4.7 for workflow explanation.

Chapter Six

Factors Affecting Call Processing Times

SCOPE

This chapter looks to identify and list the factors that can and will affect call processing and incident handling times. If the ECC is held to call answering standards and best practices and are not meeting them, it is likely due to the factors list herein. These factors are typically not accounted for when collecting, aggregating, and reporting call processing data.

6.1 Administrative

- 6.1.1 Those given the responsibility for collecting, analyzing, and assessing call processing and incident handling data shall be knowledgeable of the factors affecting call processing and incident handling times in their respective ECCs and develop systems to communicate the findings to leadership.
- 6.1.2 ECC managers shall understand all aspects that could delay and affect call processing and incident handling times. This knowledge is essential especially when communicating to management, stakeholders, and other direct reports (E.g., boards, councils, consortiums).

6.2 Factors Affecting or Delaying Call Processing Times - This section lists important factors to consider that may delay or affect call processing times in the ECC.

- 6.2.1 Challenging callers (children, elderly, intoxicated callers, callers under duress).
- 6.2.2 Communication impaired callers (language barrier, translation services needed, speech problems, hard of hearing or loss of hearing).
- 6.2.3 Difficult location determination.
- 6.2.4 Dispatch protocols.
- 6.2.5 Other factors such as multiple calls on same incident, poor cellular reception, non-emergency calls, responding to calls in rural areas.
- 6.2.6 Note, this list is not a complete account of all causal factors that may delay or affect call processing times. The AHJ should have controls in place to capture causal factors not listed and any associated data.

6.3 Factors Affecting or Delaying Incident Processing Times²⁰ - This section lists important factors for consideration that may delay or affect incident processing times for the ECC.

- 6.3.1 Challenging callers (e.g., children, the elderly, callers under duress, intoxicated callers, etc.)
- 6.3.2 Language barrier/translation
- 6.3.3 Difficult location determination
- 6.3.4 Speech or Hearing-impaired callers
- 6.3.5 Dispatch protocols
- 6.3.6 Other factors (i.e., multiple calls of the same incident, non-emergency calls, poor cellular reception and responding to emergency calls in rural areas).
- 6.3.7 Combined call taker/dispatcher responsibilities (when the PST serves both roles).
- 6.3.8 Note, this list is not a complete account of all causal factors that may delay or affect incident processing times. The AHJ should have controls in place to capture causal factors not listed and any associated data.

6.4 Factors Affecting Incident Processing Times – Non-Call Related²¹ - This section lists important factors for consideration external to calls that may delay or affect incident processing times in their ECC.

- 6.4.1 Staffing Levels
- 6.4.2 Staff Experience
- 6.4.4 Weather
- 6.4.5 Time of Day
- 6.4.6 Technology/Equipment Performance
- 6.4.7 Season
- 6.4.8 Day of Week
- 6.4.9 Holidays
- 6.4.10 Other (special town or city events, staff unwillingness to use the CAD system instead of pen and paper, and Family Medical Leave Act (FMLA) vacancies, etc.)

²⁰ APCO and GMU CSSR. Call Handling and Incident Processing at ECCs (2019). Section III. "Factors Affecting Incident Processing Times."

²¹ APCO and GMU CSSR. Call Handling and Incident Processing at ECCs (2019). Section III. "Factors Affecting Incident Processing Times."

Note: [Appendix D](#) contains incident processing data for the three specific incident types listed in section that may require a longer processing time. The data comes from an APCO and GMU/CSSR study and is listed by ECC size. [Appendix D](#) does not list data for Text to 9-1-1 as many agencies in the study were not processing this call type at the time of the study. The data shown in [Appendix D](#) is informational in nature and may serve as a benchmark for your agency.

ACRONYMS AND ABBREVIATIONS

AHJ	Agency Having Jurisdiction
ANS	American National Standards
ANSI	American National Standards Institute
APCO	Association of Public-Safety Communications Officials
CAD	Computer Aided Dispatch
CPE	Customer Premises Equipment
CSSR	Center for Social Science Research
ECC	Emergency Communications Center (replaces the acronym PSAP)
EMS	Emergency Medical Services
GIS	Geographical Information System
GMU	George Mason University
IP	Internet Protocol
MDT	Mobile Data Terminal
NG911	Next Generation 9-1-1
PS	Public Safety
PSAP	Public Safety Answering Point (currently referred to as ECC)
PST	Public Safety Telecommunicator
RMS	Records Management System
RP	Reporting Party/Person
SDC	Standards Development Committee
SOP	Standard Operating Procedure
TDD	Telecommunication Device for the Deaf
TRS	Telecommunications Relay Service
TTY	Teletypewriter (use of telephones for the hearing impaired)
VoIP	Voice over Internet Protocol

GLOSSARY

Agency: The hiring authority or also referred to as the Agency Having Jurisdiction (AHJ). The Agency or body that defines the roles, responsibilities, policies and procedures, and performance standards that direct the activity of the Public Safety Telecommunicator.

Average Speed of Answer (average answer time): A common quality measure in ECCs; it is the time it takes a dispatcher to pick up from first ring in the ECC.

Call Answer to Incident Entry: Time from when call is answered at the ECC to initiation of incident entry.

Call Completion Time: The non-telephone time spent processing a call. It includes all additional time related to a call; time spent entering data into the CAD system, managing the call internally, transferring calls, dispatching a unit to the scene, address verification, etc.

Call Receipt to Call Answer: Time from when a call arrives at Customer Premise Equipment (CPE) to call answer.

Call Referral: Callers are referred to secondary number for response to their needs.

Call Transfer: The PST determines the proper responding agency and connects the caller to that agency which then performs the necessary dispatching.

Call Taker: A PST who processes incoming calls through the analyzing, prioritizing, and disseminating of information to aid in the safety of the public and responders.

Concept of Operations: User-oriented document describing the characteristics of a proposed organization, function, or system from the viewpoint of its stakeholders.

Dispatcher: (more commonly referred to as Public Safety Telecommunicator (PST)) A PST who provides dispatch services by analyzing, prioritizing, and processing calls, while maintaining radio contact with responders to ensure safe, efficient, and effective responses to requests for public safety services.

Emergency Communications Center (ECC): (replaces the term PSAP) A facility equipped and staffed to receive emergency and non-emergency public safety calls for service via telephone and other communication devices. Emergency calls for service are answered, assessed, classified, and prioritized.

Incident: An emergency or non-emergency event requiring a response from Police, Fire, EMS, or combination thereof.

Incident Handling Process: Consists of the following stages: pre-incident prevention, efficient in-incident handling, and post-incident handling. Based on methods such as video analysis, incidents can be investigated, criminals can be captured, and contingency plans can be optimized.

Incoming Call Volume: The total number of incoming wireless, wireline, and text-to-911 calls received in a given time period.

Incident Entry to Call Dispatch: Time from initiation of incident entry to when call is dispatched to assigned units. This may be identified as verbal dispatch of the call, completion of assignment in CAD, silent dispatch to Mobile Data Terminal (MDT), or Initiation of tones.

Priority: Designation given to a request for service indicating the level of urgent or emergent response required.

Public Safety Telecommunicator (PST): (formerly referred to as Dispatcher) The individual employed by a public safety agency whose primary responsibility is to receive, process, transmit, and/or dispatch emergency and non-emergency calls for service for law enforcement, fire, emergency medical, and other public safety services via telephone, radio, and other communication devices.

Shall: The terms "shall", "must", "mandatory", and "required" are used throughout this document to indicate normative requirements and to differentiate from those parameters that are recommendations.

Should: The term "should" define parameters that are recommendations. The term is differentiated from "shall" by the lack of normative requirements.

Standard Operating Procedures (SOP): A written directive that provides a guideline for conducting an activity. The guideline may be made mandatory by including terms such as "shall" rather than "should" or "must" rather than "may."

Text to 9-1-1 Session: The entire period of communication via Text to 9-1-1.

REFERENCES AND RESOURCES

APCO Project 43 Broadband Implications for the PSAP, (April 2016)

APCO ANS 1.117.1-2019 Public Safety Communications Center Key Performance Indicators

APCO and CSSR Call Handling and Incident Processing in Emergency Communications Centers: A Research Report, (Sept 2019)

APCO/NENA ANS 1.102.3-2020 Emergency Communications Center (ECC) Service Capability Criteria Rating Scale

APCO ANS 1.111.2-2018 Public Safety Communications Common Incident Types for Data Exchange

CALEA Standards for Public Safety Communications Agencies, 6.2 Call Taking, 6.3 Communication with Field Units

NENA-STA-020.1-2020 Call Processing

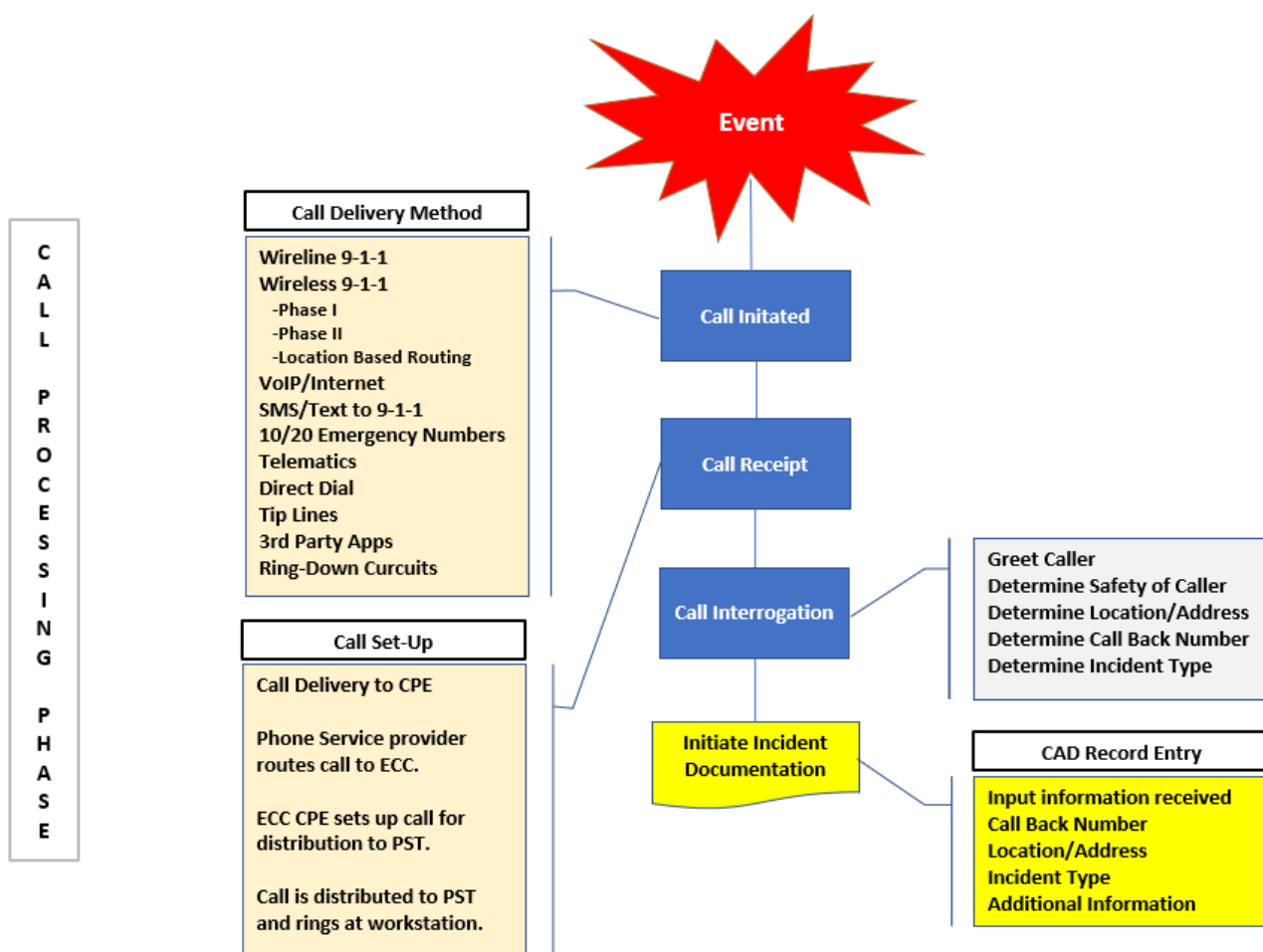
NENA-STA-019.1.2018 NG9-1-1 Call Processing Metrics Standard

NFPA 1225 Standards for Emergency Services Communications

APPENDIX A – WORKFLOW

CALL PROCESSING PHASE

In the call processing phase, understanding each step in the workflow and the processes involved is crucial for engaging interested parties. This insight is necessary when speaking to stakeholders and explaining why and how things take place in the call processing phase. It is also important when developing programs for the ECC (E.g., policy, procedure and protocols, training). Below is the workflow identified for the call processing phase and is the basis to a large extent the content in [Chapter 4](#).

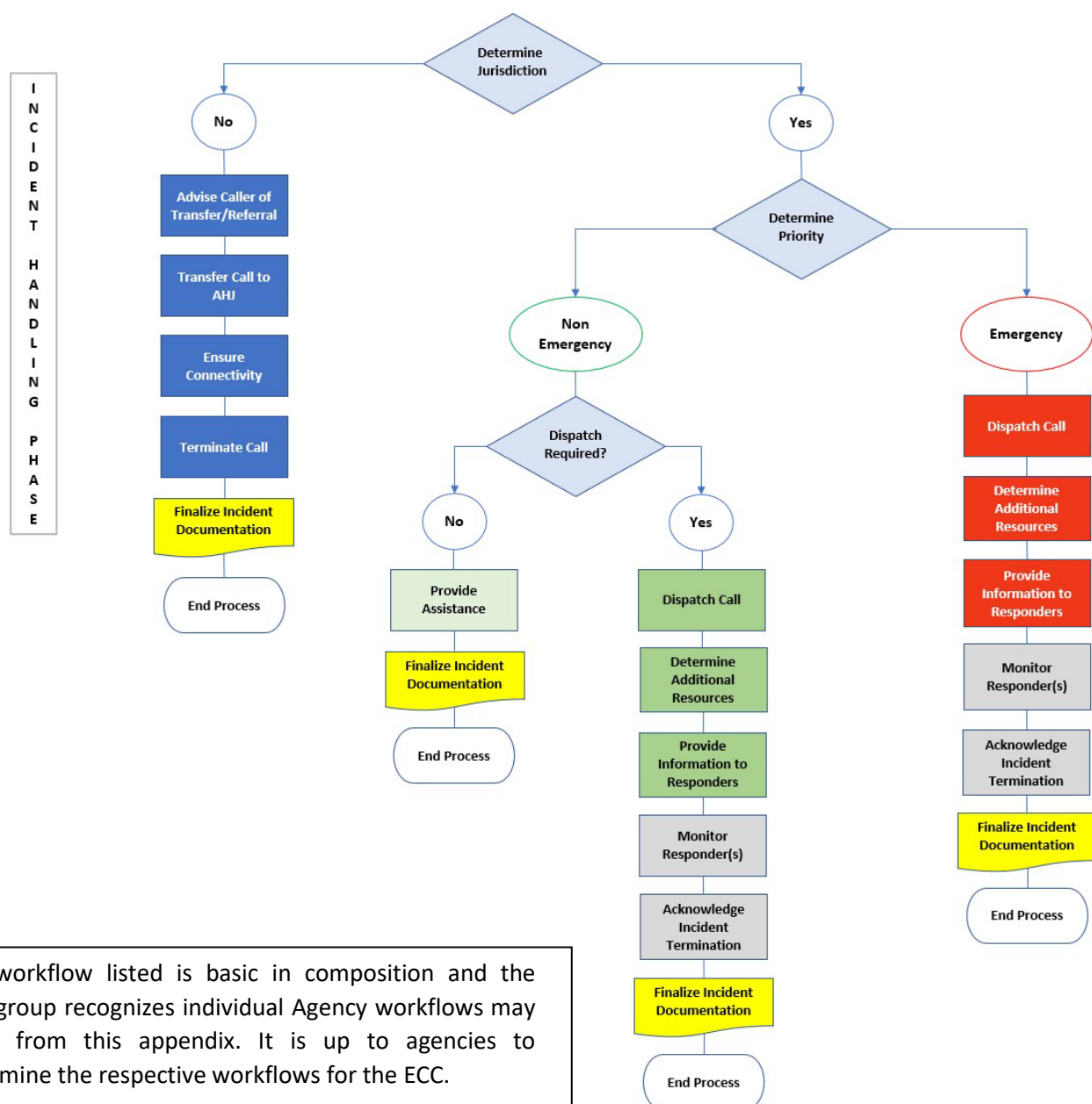


The workflow shown is basic in composition and the working group recognizes individual Agency workflows may differ from this appendix. It is up to agencies to determine their respective workflows for the ECC.

APPENDIX B – WORKFLOW

INCIDENT HANDLING PHASE

In the incident handling phase, some of the processes shown below work simultaneously with the call processing phase. In conjunction with the call processing phase workflow, the incident handling phase workflow is basic in nature; however, it lists the most relevant steps in each phase. Understanding each step in the workflow and the processes involved is critical. This insight is necessary when speaking to stakeholders and explaining why and how things happen in the incident handling phase. It is also important when developing programs for the ECC (i.e., policy, procedure and protocols, training). Below is the workflow identified for the incident handling phase and is the basis to a large extent the content in [Chapter 5](#).



APPENDIX C

APCO/GM CSSR CALL PROCESSING and INCIDENT HANDLING TIMES

In 2017, APCO International, in collaboration with the Center for Social Science Research (CSSR) at George Mason University, conducted a study on call processing and incident handling times from various Emergency Communications Centers (ECCs) in the United States. The aim of the study was to gather data on how long ECCs process different incident types, and what factors might affect call processing times. Table 3 (below) presents the result of ECC call processing times across the three primary disciplines: law enforcement, fire, and EMS.²²

Table 3: 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					

²² The findings in this report are based on primary data collected through a survey instrument. The survey draws on a sample of 772 employees working at ECCs from across the country. Over three-quarters of the respondents were Directors, Supervisors, or Communications Managers at ECCs.

APPENDIX D

APCO/GM CSSR CALL PROCESSING and INCIDENT HANDLING TIMES

Table 4 (below) presents the incident processing data for the three specific incident types that may require a longer processing time possibly due to incidents requiring language translations, incidents requiring use of a TDD/TTY device or TRS, and incidents requiring the determination of incident locations due to insufficient information.

Table 4: 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					

ACKNOWLEDGMENTS

Special recognition is given to the working group members who provided their expertise in updating this document, thus successfully creating this American National Standard.

Daniel Morelos, ACE, Chair
Tucson Airport Authority (Ret.)
Tucson, AZ

Stephen C Williams, ENP, Vice Chair
NEOM
Saudi Arabia

Justin Rasmussen, ENP, RPL, Technical Editor
What-Comm 911
Bellingham, WA

Brian Burdick, RPL
Putnam County Bureau of Emergency Services
Carmel, NY

Ryan DesJardins
Bureau of Emergency Communications
Portland, OR

Scott Ekberg
Kansas 911 Coordinating Council
Great Bend, KS

Kevin Harris
Emergency Communications of Southern Oregon
Central Point, OR

Fred McAnn
Bossier Parish 911
Benton, LA

Nathan McClure
AECOM (Ret.)
Cape Coral, FL

Aimee Jarrell
APCO CC9S Coordinator
Daytona Beach, FL

Mindy Conner Adams, ENP, RPL, CPE
APCO Standards Program Manager
Daytona Beach, FL

NOTES



APCO International
351 N. Williamson Blvd.
Daytona Beach, FL 32114

www.apcop43.org