

Virginia Information Technologies Agency



9-1-1 Call Handling Best Practice



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Commonwealth of Virginia

9-1-1 Call Handling

Best Practice

This document has been created to serve as a best practice for the 9-1-1 call handling function within Public Safety Answering Points (PSAP) in the Commonwealth. It is an overview of 9-1-1 call taking and focuses on the operational aspects of the process.

This publication serves as a recommended informational resource for PSAPs.



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Introduction

This best practice has been developed to support and/or strengthen the call handling function at Public Safety Answering Points (PSAP) in the Commonwealth. Use of this best practice will promote the standardization of call handling among jurisdictions, provide consistency in the handling of 9-1-1 calls across Virginia and will thus improve service delivery. Using the best practices contained in this guide, and other documents and standards cited within, PSAPs should develop, document, and continuously train on and refine all processes and procedures to specifically meet the needs of their environment and operations.

The origins of receiving emergency calls on a standard telephone line has undergone an evolution that has developed the basic 9-1-1 industry to Enhanced 9-1-1, and continues to transform the industry towards Next Generation 9-1-1. The increased complexity of communications systems makes it necessary for the parallel advancement of standards and procedures. Agencies and associations such as the Federal Communications Commission (FCC), the National 911 Office, the Association of Public Communications Officials (APCO), and the National Emergency Number Association (NENA) provide standards and guidelines by which directors and 911 operation managers are recommended to abide. When a call is received, the subsequent process by which call takers execute a response may be enhanced by the recommendations contained within this document. Regardless of the technology in place the call takers must perform their duties in the most efficient and professional manner possible as they are the first of the first responders.

1. Call Delivery

In the Commonwealth 9-1-1 calls for service are passed through telephone company selective routers and sent to the appropriate PSAP. To ensure diversity and redundancy in the system, should a failure occur, each PSAP should be served with a minimum of two wireline and two wireless 9-1-1 telephone trunks from two diverse selective routers.

To help assure availability of trunk lines and delivery of calls, it is recommended that calls by type, wireline and wireless, be delivered to the PSAP on separate dedicated trunk lines. This is done so calls of a specific type, typically wireless, are not able to overwhelm all trunks in the event of a large number of calls being received at once (ex. traffic crash on an interstate highway).

The number of trunks in a PSAP will be agency-specific based on analysis of the number of call-taking positions, staffing on duty and weekly/monthly/annual and peak hour call volume. Each year the PSAPs should work with their Local Exchange Carrier (LEC) to have a traffic study conducted and analyzed. A study of this nature reports on various elements including calls receiving busy signal, lost and overflow calls, hold times and minutes used. A traffic study and traffic measurement report (TMR) is intended to assist with the designing and administering of communications activities associated with telephone service and when analyzed can help determine that the appropriate number of trunks are in place to allow for optimum delivery of 9-1-1 calls for service.

2. Disaster Recovery Planning

It is recommended that each PSAP in Virginia engage their Local Exchange Carrier (LEC) to develop and complete a disaster recovery plan. The plan will include procedures each party is to follow in the event of a failure/outage or disaster to the communications system or facility. Once the plan is established the LEC and the PSAP should test the plan annually through a disaster testing exercise. This will assure that all scenarios, roles, responsibilities and processes are clearly defined, documented and executable. All PSAP leaders should become involved in and knowledgeable of their networks and configurations. Understanding how the network operates within your PSAP will be a major asset in the event of a disaster.

As an additional resource NENA offers courses in disaster planning for PSAPs. More information about those courses should be reviewed at the following link: <http://www.nena.org/?page=DisasterPlanCourse>.

3. Call Distribution

3.1 First Available

Once a 9-1-1 call is received by the PSAP, decisions regarding how calls will be delivered to and answered by the call takers must be made. In a PSAP with an annual, incoming 9-1-1 call volume under 30,000 calls should be answered by the first available call taker following an established answering priority. Establishing a policy regarding who (call taker, dispatcher, supervisor, etc.) is responsible to answer specific types of calls is also advisable.

3.2 Automatic Call Distribution

If the annual call volume is over 30,000 the PSAP should implement an Automatic Call Distribution (ACD) method. The ACD system allows calls to be equally distributed among available call takers, thus achieving a balance of workload. This type of methodology is more compatible in a high call volume PSAP, and should help achieve call handling efficiency in that hectic environment.

4. Call Answering

4.1 Standard Call to Answer Time

Every PSAP in the Commonwealth should meet the National Emergency Number Association standard for answering 9-1-1 calls. The standard states that ninety percent (90%) of all 9-1-1 calls arriving at the PSAP shall be answered within ten (10) seconds during the busy hour. Ninety-five percent (95%) of all 9-1-1 calls should be answered within twenty (20) seconds.¹

4.2 Answering Priority

All calls for service received should be answered in priority order as follows:

¹ NENA Call Taking Operational Standards/Model Recommendation. NENA 56-005. June 10, 2006.

- The first priority is the 9-1-1 emergency line
- Second priority is emergency 7-/10-digit phone lines
- Third priority are the non-emergency lines
- Forth in priority are the administrative and/or internal phone lines

4.3 Answering Language/Protocol – 9-1-1 Lines

All calls will be answered with “9-1-1”. It is furthered recommended that additional language including, “What is the address of your emergency?”, or “Where is your emergency?” follow.

4.4 Answering Language/Protocol – Non-emergency Lines

A standard answering language should be developed and implemented for the answering of non-emergency lines within the PSAP. Part of this protocol should include clear identification of the agency name.

4.5 Address/Location Verification

An address of the incident should be obtained with as much detail as possible. If the call is a wireline 9-1-1 call, the address information presented with the ALI is to be verified with the caller. If a wireless 9-1-1 call is received the call taker will use the information provided on the screen to determine the class of service of the call: Wireless Phase 1 (WPH1), Wireless Phase 2 (WPH2) or a Voice Over Internet Protocol (VOIP). If the call presents as WPH1, it should immediately be rebid so Phase 2 location information can be captured. Depending on length of the call, a rebid to determine accurate location may need to occur several times, particularly if the wireless 9-1-1 caller is moving. Most call handling equipment can be configured to automatically rebid at set time intervals. PSAPs should evaluate the ability of their system to perform this feature and should consider implementing the automatic rebid function. Call takers should always keep in mind that the location information displaying on their screen may be inaccurate for many reasons; therefore, location of the incident should always be verified with the caller.

5. Call Processing / Communication with Caller

The call taker will begin by gathering basic information from the caller. This primarily includes the address or location of the incident, the type of emergency, obtaining and/or verifying a call back number, a time of the occurrence and any known potential hazards.

As basic information is gathered including location and type of emergency, dispatch of appropriate emergency service can be initiated. Each PSAP should have an established policy for call processing based on the nature of the call. The policy should include what information needs to be gathered based on call type as well as specifics regarding processing procedures, call taker judgement, call termination, reporting and etc.

6. Emergency Medical Dispatch

Emergency Medical Dispatch (EMD) is a system that enhances services provided by PSAP call takers, by allowing them to narrow down the caller's type of medical or trauma situation, so they can better dispatch emergency services and provide quality instruction to the caller before help arrives. Due to the highly effective, life-saving success of EMD, each PSAP in Virginia should have an established EMD protocol in place, and have call takers certified on the system. The Virginia Department of Health's Office of Emergency Medical Services offers assistance with establishing EMD programs and has additional EMD resource information on their website at the following link: <http://www.vdh.virginia.gov/OEMS/PSAP/>

7. Emergency Call Transfer

7.1 Transfer of Emergency 9-1-1 Calls

If an emergency call is received by a PSAP and must be transferred to another PSAP, it should be done so without delay. In an emergency a call taker should not provide a number to the caller and advise them to call themselves. Each PSAP in Virginia should have programmed into their telephone console, the 9-1-1 direct or emergency 10-digit number for at least each adjacent locality's PSAP. This should allow for a "one-button transfer". All other agencies frequently transferred to, i.e. Virginia State Police, poison control centers, Sheriff's Offices, etc , should also be programmed for "one-button transfer". Emergency 10-digit phone numbers for agencies that are farther away should be kept in the PSAPs call list.

When transferring an emergency call the telecommunicator should advise the caller to stay on the line while they connect them to the {agency name}. The telecommunicator should stay on the line until the connection is complete and all pertinent information has been relayed. Blind transfers (when the call is sent to another location and the initial call taker drops off before connection is complete) of emergency calls should never occur.

7.2 Transfer of Non-emergency Calls

If a non-emergency call is received by the PSAP on the 9-1-1 line and needs to be transferred, the call taker should not transfer the call (i.e. a caller reporting stolen property needs to speak to law enforcement). Transferring a call that came in on a 9-1-1 line to a non-emergency number will most often hold the trunk in busy status. The caller should be given the appropriate non-emergency number to call to report the incident.

8. Telematics and Alarms

Telematics and alarm calls for service should be treated like other emergency calls and should follow the same appropriate processing. They typically arrive at the PSAP over a 10-digit phone line. It is a best practice for the PSAP to have a 10-digit phone number/line dedicated for telematics and alarms. This allows the call taker to know the nature of the incoming call, that it should be treated as emergency

and answered in the appropriate priority. If calls of this type are not received on a dedicated 10-digit line, it is impossible to distinguish them from other non-emergency calls.

9. Text-to-911

Within Virginia it is the goal to ensure that Text-to-9-1-1 service is available universally throughout the state. The following best practices are encouraged to the PSAP.

- Encourage the pursuit of web browser Text-to-9-1-1 solutions, or Direct IP solutions where and when available.
- Leverage text aggregator solutions for statewide deployment.
- Integrate statewide deployment of Texting to 9-1-1 with NG9-1-1.

In Virginia, the minimum geographical boundary for Text-to-9-1-1 deployments will be at the PSAP level since individual PSAPs cover both cities and counties. And even though the unit of deployment for Text-to-9-1-1 is a single PSAP and a single wireless carrier at a time, current Text-to-9-1-1 solutions can support regional and even state-wide deployments. PSAPs wanting to deploy Text-to-9-1-1 should develop and carry out a proactive public education campaign. The public should be advised to utilize text only when a voice call is not possible or advisable.²

10. Non-standard Calls

There are often calls received by a PSAP that are non-standard, meaning that the nature of the call cannot easily be determined. Detailed procedures for handling these types of calls should be established by the PSAPs and followed by call takers. In many cases, determining how to handle/process non-standard calls will rely on judgment of the call taker. When applicable call takers should listen for background sounds, tone of caller, word choice, any possible location clues, etc to help determine the nature of the call and if emergency dispatch is warranted. Some general best practices for handling certain non-standard calls follows.

10.1 Abandoned Calls or Disconnects

When a 9-1-1 call is received and is abandoned or disconnected before appropriate response can be determined the call taker will attempt a call back. If an answering machine is reached a message should be left. If location information is received law enforcement should be dispatched. If the call was from a wireless device, at least one call back should be attempted.

10.2 Silent Calls

All silent calls received should be responded to with a TDD/TTY to determine if the caller is attempting to reach 9-1-1 with a communications device for hearing impaired individuals. If contact is made, established call handling procedures should be followed. If it is determined that a TDD/TTY device was not used, call takers should follow the procedure for abandoned calls or disconnects.

² Commonwealth of Virginia Text-to-9-1-1 Whitepaper. Virginia E-911 Services Board. January 8, 2015. http://vita.virginia.gov/uploadedFiles/VITA_Main_Public/ISP/E-911/2015/WPFINV3.pdf

10.3 Misdials

A call is determined to be a misdial if the caller stays on the line and admits to the misdial.

10.4 Unintentional Calls

A call is classified as unintentional when the call taker can hear conversation, non-suspicious background noise, and have listened sufficiently and checked with a TTY/TDD to determine that there is no indication of an emergency situation.

10.5 Prank Calls

Call takers will call back a suspected prank caller. Prank calls should be treated as a real emergency until proven otherwise. The called party will be questioned to determine if further action is needed or a response is required.

11. Error Reporting and Correction and Quality Assurance Program

An error reporting and correction program and/or a quality assurance program should be established at every PSAP. Many types of “errors” can occur during the process of a 9-1-1 call. Some of those may be receiving incomplete or no data including an ALI failure and/or an ANI failure, incorrect ALI and/or ANI information, mapping interface failures or inaccuracies, equipment problems, etc. a detailed error report for each type of incident should be developed and utilized within the PSAP. Along with the reports each PSAP should develop a procedure for identifying, reporting on and correcting errors. The procedure should detail staff roles and responsibilities, timeframes, resolution reporting so all staff are aware of issues and outcomes. Once errors are corrected an attempt to recreate the error should occur to insure the correction was successful.

Conclusion

9-1-1 call handling is a complex practice that requires dedicated, highly trained and effective personnel. Establishing detailed call handling procedures, and carrying out training on those procedures, should be an achieved goal of every PSAP in the Commonwealth. The best practices included in this document should be incorporated into local policies and procedures.