Recommendations for Establishing and Maintaining a Quality Assurance Program
Related to PSAP Quality Assurance

Executive Summary
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State of Maine
Public Utilities Commission
Emergency Services Communication Bureau

MissionCriticalPartners

1   EXECUTIVE SUMMARY

1.1   BACKGROUND

Most emergencies begin with a call to 9-1-1. The call must be handled correctly every time by professionals using the best standardized processes and systems available. When processes fail, analysis is required, and remedial action must occur in a timely manner.

In February 2010, the State of Maine Office of Program Evaluation & Government Accountability (OPEGA) issued a report entitled, "Emergency Communications in Kennebec County." The report identified a need for improvement in the areas of standardized protocols and quality assurance (QA). As a direct result, the Public Utilities Commission's Emergency Services Communications Bureau (Bureau) was tasked by the 124th Legislature (P.L. 2009 Chapter 617) to implement a quality assurance program to audit and monitor compliance with emergency dispatching standards, practices and procedures of Public Safety Answering Points (PSAPs).

In May of 2010, the Bureau sought a qualified consultant to assist with the creation of a QA program. The purpose of the program was to establish processes that would audit and monitor compliance with emergency dispatch standards, practices and procedures. This included providing assistance and guidance in the establishment of processes designed to promote adherence to call-taking protocols, evaluate and make recommendations for facilitating the learning process, and provide a framework for continuous improvement at each PSAP in Maine.

Mission Critical Partners (MCP) was contracted to assist in this process. MCP is headquartered in State College, Pennsylvania, with offices in Harrisburg, Pennsylvania, and Southlake, Texas (near Dallas). MCP serves clients throughout North America. MCP's team consists of former public safety managers, project management professionals (PMPs), and technology, forensic and policy specialists. MCP principals have each invested more than two decades in the 9-1-1 industry and continue to serve in key leadership roles in all the major industry organizations—National Emergency Number Association (NENA), Association of Public-Safety Communications Officials International (APCO), and 9-1-1 Industry Alliance (9IA)—and as advisors to key federal and state governmental bodies. MCP's mission is to support life safety communications clients through improved policy, systems and processes.

MCP has direct experience with assisting state or regional 9-1-1 authorities in developing quality assurance review programs and has intimate knowledge of quality assurance systems that work in conjunction with structured protocol systems. MCP has

worked both nationally and internationally with provincial, state, county and municipal public safety entities to develop and introduce
industry-recognized quality assurance programs. In addition, the company has been directly involved in the research, development, and deployment of structured protocol systems for medical, fire and police call-processing systems.

A collaborative and strategic approach to the project ensured that all elements of PSAP call processing and internal policies and procedures were measured. Throughout the project, the focus of improving quality of service remained at the forefront. The PSAP review and the subsequent assessment of issues guided the recommendations for improvements in processes that will prove suitable for all PSAPs.

In order to follow through with the establishment of improved standards for PSAP operations, existing standards required evaluation. This report provides an overview of current PSAP performance, as well as provides recommendations for a future plan intended to raise and improve processes germane to establishing the highest quality of service possible for the citizens of Maine.

1.2   METHODOLOGY

During September and October of 2010, the state's 26 PSAPs were visited by MCP auditors. Without exception, all PSAPs participated in a positive and collaborative way, and openly welcomed the opportunity to participate in the review. A pre-approved survey instrument was used to gather and measure the review criteria (Refer to Appendix A – PSAP Initial Findings Review beginning on page 30 of this report, and then to Appendix 1 – PSAP Information Interview Instrument on page 34 of the Initial Findings Report). PSAPs were also invited to provide suggestions for improving internal processes, support from the Bureau, or any other ideas in support of PSAP operations. The findings of these reviews provide a snapshot of each PSAP on the day of their respective review. The results of the audits appear in Appendix A – PSAP Initial Findings Review.

1.3   OVERVIEW OF FINDINGS

This section summarizes MCP's findings during the observation period of September and October 2010.

1.3.1   PSAP Review Findings

MCP worked with the Bureau to establish the criteria for data collection. It encompassed adherence to established Rules, as well as measured statistic producing competencies of PSAP managers. The findings are summarized as follows:

1.3.1.1 Call Processing statistics – PSAPs were able to produce call processing statistical information. However, there were some PSAPs with unexpected variations. This matter is easily resolved by refresher training on the call statistics records information management system provided by the Bureau to each PSAP.

1.3.1.2 ALI Discrepancy/Mapping Reporting System – The reporting system prescribed by the Bureau is in place at all PSAPs. However, one PSAP was not following the procedure. This has since been rectified. In addition, some PSAPs had error report logs that were not up to date. All PSAPs have since demonstrated that they are now in compliance with the procedure.

1.3.1.3 Internal Policies for Public Comment/Complaint – There were 23 PSAPs that were in compliance, and three PSAPs that were not. Since the review, all PSAPs report that they are now in compliance with this Rule.

1.3.1.4 Quality Assurance Programs and Processes – Quality Assurance programs in the state's PSAPs involve the regular review of individual telecommunicator calls where the Emergency Medical Dispatch (EMD) protocol is used. This regular review of calls, coupled with QA evaluations on a pre-determined level of compliance to protocol, helps ensure that the protocol is being followed correctly.

QA programs and processes are in place at all PSAPs. However, not all PSAPs have been able to meet the call review criteria. Of the 26 PSAPs, 19 were reporting their EMD compliance scores on a regular basis. PSAPs are continuing to make every effort to comply with the QA program and processes. Due to the absence of structured protocols for fire and police events, there is no effective QA program in place for these types of calls.

1.3.1.5 Internal Policies and Procedures – Most PSAPs have established internal policies and procedures that address emergency and non-emergency call processing methodologies.

> **1.3.1.5.1 Call Transfer Policy** - PSAPs have call transfer policies in place. However, it is difficult to measure compliance to the policy. There are inconsistencies with regard to responsibility for EMD call processing (i.e., inconsistencies with the administering of EMD, when to transfer, which PSAP is responsible for EMD, which PSAP should give pre-arrival instructions, etc.). A statewide policy and procedure document that provides specific instructions on when to transfer, how to transfer, and language to be used, and clear and concise rules on EMD call processing is urgently required for the standardization of call transfer procedures.

1.3.1.5.2   Fire and police Call Processing Guidelines – Four PSAPs have developed rudimentary fire and police call processing guideline systems. The systems range from an in-house developed flip-card system, to detailed procedural documentation. Despite the best efforts of PSAP personnel to develop in-house call processing systems, commercially available structured protocol systems for fire and police are not only preferred, but provide a higher degree of liability protection. The remaining PSAPs have no system in place for police or fire calls.

1.3.1.6 Employee Training Records – PSAPs demonstrated a high degree of compliance to the administration of employee training records.

1.3.1.6.1   In-Service Training Records – All PSAPs were found to be compliant and training records are up-to-date.

1.3.1.6.2   EMD Certifications – All PSAPs self-reported that employee EMD certifications and licensing records, where applicable, were current and up-to-date.

1.3.1.6.3   Continuing Education Hours (CEH) System – Every PSAP demonstrated compliance to this Rule, and they are making every effort to ensure that telecommunicators comply with CEH recertification requirements.

1.3.1.7 Bureau Rules – PSAPs were evaluated on their compliance to other Bureau Rules.

1.3.1.7.1   TTY Test Calls – Of the 26 PSAPs, there were eight that were not in compliance with Bureau Rules. However, they have all since demonstrated compliance.

1.3.1.7.2   Archiving of Audio Recordings – All PSAPs were in compliance with the 30 day retention Rule.

1.3.2. Other Findings – There are other issues discovered by the MCP reviewers.

1.3.2.1 Wireless Call Routing – The system of wireless call routing is of issue with most PSAPs. For the most part, wireless 9-1-1 calls are not routed automatically to the appropriate PSAP, but to one of four centralized locations for initial processing. This model introduces an extra step in the call processing schema by creating, in the vast majority of calls, the need to transfer the call to another PSAP. The reconfiguration of wireless call routing would significantly

improve call processing efficiencies, reduce the need for call transfer, and also improve response times.

1.3.2.2 Call Sharing - Call sharing is the sharing of calls between the County Sheriffs and the State Police. Call sharing is a workload sharing agreement designed to mitigate law enforcement staffing shortages by sharing response resources. Most *county* PSAPs prefer that call sharing be eliminated and that the Sheriffs be designated the primary responders with the State Police as backup resources.

1.4   RECOMMENDATIONS

1.4.1   General - The recommendations in this report are intended to reinforce existing Bureau and the Department of Public Safety's (DPS) Maine Emergency Medical Services (MEMS) Bureau Rules, as well as provide a pathway to improved levels of service for Maine's citizens. The recommendations further suggest specific steps that are easily taken to ensure existing expectations for PSAPs are met and audited with a minimal impact on existing resources. These recommendations are based on past efforts to establish best practices, the current state of PSAP operations, as well as the vision of the state's emergency services stakeholders (police, fire, emergency medical services) to improve the delivery of their respective services.

1.4.2   Institutionalizing Processes – In order to expand the existing EMD QA and structured protocol processes already imbedded in state legislation, Bureau and MEMS rules, consideration must be given to the challenges associated to institutionalizing the recommendations supporting the adoption of fire and police protocols and QA processes as suggested in this report. For example, existing resources both at the PSAP as well as the Bureau will require evaluation to more accurately determine where resource and technology shortcomings exist. In order to adopt these recommendations, extra resources will be required. Funding for extra human resources as well as the capitol and operations costs required for program implementation will be a challenge.

Moving forward with implementing these processes in state infrastructure will most likely require at least one additional position to oversee the execution of these new programs. The expertise to manage these recommendations exists in the Bureau. However, existing resources will require expansion to achieve these goals. It should be noted that the Bureau has experience in the successful implementation of both QA and EMD programs. The elements of the program already exist, and the challenge is how to migrate the new processes for QA and structured protocols into the existing Bureau infrastructure. Model legislation templates for protocol use are available from sources such as the National Academies of Emergency Dispatch (NAED).

1.4.3 Quality Assurance in Public Safety Communications - Recommendation #1

expresses the need for expanding the existing QA systems to encompass fire and police call processing. There has been a significant degree of success in Maine with the application of EMD protocols and the EMD QA support system. The EMD protocol provides the benchmark upon which QA can effectively be performed. The absence of the equivalent protocol systems for fire and police makes it virtually impossible to objectively QA those call types. MCP firmly believes that the growth and application of QA systems for fire and police is the next logical and necessary step in the evolution towards the further application of QA standards in Maine's PSAPs.

1.4.4 Structured Protocol Call Processing Systems - Recommendation #2

expresses the need for expanding the existing EMD structured protocol system to include fire and police protocols. The adoption of EMD protocols has made a significant difference in the standard of care for Maine's citizens, and no doubt has saved many lives. The adoption of fire and police protocols is the next logical and necessary step in the evolution towards the further application of industry best practices and the benefits that will be further afforded to citizens. As stated in 1.4.3, the adoption of structured protocols for fire and police call processing, along with sound QA practices, ensure the highest level of care and practice for not only the state's citizens, but also for all emergency responders.

There are three implementation options outlined in section 4.10 – Implementation options. For convenience, they are paraphrased here:

Option 1: One-Time Approach to Implementation - For a one-time implementation of the entire costs associated to QA, Emergency Police Dispatch (EPD) protocol, Emergency Fire Dispatch (EFD) protocol, certification training, software and consulting support services, refer to Appendix D – Statewide Protocol Implementation Cost Estimate. The quote from Priority Dispatch Corp (PDC), comes in at an estimated $2.3M. The one time approach is a very ambitious undertaking. However, the PDC quote if subject to negotiation and it is expected that implementation costs could be reduced. Also, in subsequent years, there would be recurring charges for maintenance, recertification, and continuing education materials.

Option 2: Multi-Year Plan Approach – A phased, multi-year plan approach is much more realistic and highly suggested particularly on an implementation of this magnitude. If the state commits to a complete system implementation spread over a fixed time period (I.e., 3 years), overall costs might also be negotiated and spread over an agreed to schedule.

Option 3 – Voluntary PSAP Participation – Several PSAPs have expressed an interest to move forward with adding EPD and EFD protocols to their call processing

systems. Funding for a beta-style approach would have to be authorized particularly if the source is the E9-1-1 surcharge, as is the source of funding for the current EMD program.

1.4.5   Existing PSAP Processes – Recommendations #3 thru #10 (refer to Section 5, pages 26-30) express the need for the regular auditing of PSAP compliance to existing Rules, the development of call transfer policies, and a reexamination of wireless call routing options. Although PSAPs are making every effort to comply with existing criteria, a system of checks and balances that assures accountability to existing Rules is required. A simple audit form to be completed by each PSAP on an annual basis may satisfy this need. This process, coupled with the occasional on-site review, is a simple and straightforward method to address these issues.

With regard to the call transfer policies, a working group committee consisting of PSAP representatives, with Bureau oversight should be tasked with producing a call transfer protocol template.

Wireless call routing remains an important issue and it is imperative that call routing options be researched. PSAPs openly wonder why wireless calls cannot be routed directly to them for processing. As stated, the reduction or elimination of the need to transfer wireless calls improves efficiencies and positively impacts emergency response times. This matter requires further research, and strategies for the most effective processing of wireless calls must be considered.

1.4.6.   Future PSAP Consolidation – Consideration must be given to weighing the recommendations in this report against future PSAP consolidations in Maine. In short, the overall costs of protocol implementation would be considerably impacted should the number of PSAPs be reduced. Wireless call routing considerations would also be impacted.

1.5   IMPLEMENTATION OF A QUALITY ASSURANCE PROGRAM

1.5.1   Introduction - Quality Assurance programs in the state's PSAPs involve the regular review of individual telecommunicator calls where the EMD protocol is used. This regular review of calls, coupled with QA evaluations on a pre-determined level of compliance to protocol, helps ensure that the protocol is being followed and correctly.

For fire and police call processing, the implementation of a comprehensive QA program on a statewide basis must be viewed as the logical next step in the progression of continuing to enhance the delivery of emergency services. As outlined in the recommendations contained in this report, the next steps to achieving this goal is the enhancing of existing Rules and the adoption of structured protocols for fire and police

calls.. In other words, the implementation of a comprehensive QA program must be viewed as the expansion of existing processes augmented by additional protocol systems.

Section 4.10 outlines three options for the adoption of structured protocols and QA systems. In order to support any degree of growth in call processing methodologies, consideration must be given to establishing an advisory planning committee. This committee could help with establishing baseline systems and resources prior to the expansion or adoption of new protocol and QA systems. Of benefit is the fact that the necessary building blocks required for this expansion have already been in place for several years. The challenge now comes in the form of growing existing best practices in such a way as to not overwhelm existing PSAP resources, or any other aspect of public safety impacted by these recommended next steps.

1.5.2   Establishing a QA Program – The establishment of a statewide QA program will evolve through the guidance and collaboration of the Bureau and the Advisory Committee. It is anticipated that as the program is initiated, the Public Utilities Commission (PUC) would take a proactive role in planning for Bureau support resources. As the beta-test pilot project progresses, the PUC would assume responsibility for supporting the overall program.

Consideration must be given to creating a QA program manager's position within the Bureau. This would represent the first step in institutionalizing the QA program on a statewide basis.

1.5.2.1   QA Program Manager – The QA program manager would be tasked with all aspects of the management and administration of the new QA program including:

- Chair the QA Program Advisory Committee
- Program administration
- Project management of strategic long-term implementation plans
- Fiscal management of the program
- Establish of QA audit processes
- Ensure accountability for QA reporting processes
- Ensure compliance to Bureau and MEMS Rules
- Administer additional contracted resources (if appropriate)
- Annual program status report to the PUC

A detailed job description would be required for this position. The QA program manager would answer directly to the Director, Emergency Services Communications Bureau with a functional reporting path to the Maine Department of Public Safety.

1.5.2.2   QA Program Advisory Committee – The establishment of a QA program advisory committee is the second step in establishing a comprehensive statewide QA program. The committee should be chaired by the QA program manager. The committee should consist of representatives from the Bureau, MEMS, as well as strong representation from PSAP leaders across the state. Membership of this committee would require careful selection of participants, and may also include advisory resources from fire, law enforcement, and EMS stakeholders. The Bureau would have to assume a strong leadership role with this committee. Members would require clear and firm direction, and would need to be kept on task. The Bureau representative would be expected to ensure that decisions and recommendations not exceed the committee's scope of work. This committee's areas of responsibility may include, but not be limited to, the following tasks:

- Research and make recommendations to Bureau for changes to Rules in support of program expansion
- Analyze and identify additional certification training and experience needs for PSAP personnel
- Analyze and identify additional certifications needs for existing QA certified personnel
- Research which PSAPs are most appropriate for involvement in a beta-test pilot project for protocol implementation and QA augmentation
- Identify technical challenges and costs associated with interfacing the protocol software systems with existing computer aided dispatch (CAD) systems
- Make recommendations to the Bureau regarding the funding of a beta-test pilot
- Prepare a long-term strategic plan for program growth throughout the state