Best Practices in 9-1-1 Dispatching
By Jody A. Hauer

As a 9-1-1 professional, how do you define successful service? If you work at a communications center that takes 9-1-1 and other public safety calls, you might measure success in 9-1-1 with one or more of these criteria:

- All dispatchers have training that meets or exceeds national guidelines;
- Telephone trunks and other equipment allow a level of service where no more than one call in 100 attempts is blocked during the average busy hour;
- Uninterruptible power supplies and backup generators are available to prevent power disruptions from interrupting calls in progress or incoming calls;
- At least 90 percent of the calls are answered within 10 seconds, with no more than 3 rings, during the average busy hour;
- A high percentage of the calls requiring responses are dispatched to the appropriate emergency response unit;
- Hearing or speech-impaired callers receive the same level of service as the other callers;
- Dispatchers have answering positions with ergonomic features, such as individually controlled lighting, height-adjustable consoles, or self-adjustable seating;
- The center has arranged to alternately route calls automatically if the 9-1-1 trunks are busy;
- Communication center employees and other public safety personnel have a method for interacting and offering feedback on the center's operations; and
- A high percentage of citizens are satisfied with the communications center's performance.

All of these indicators of effectiveness, among many others, are part of "best practices" in 9-1-1 dispatching, as reported in a study recently published by the Minnesota Legislative Auditor's Office. In this study, the Auditor's Office identifies characteristics of effective and efficient 9-1-1 dispatching and uses examples around Minnesota to illustrate how some communications centers have put the best practices into action.

But, you ask, what does an auditor know about 9-1-1 dispatching? To define effective and efficient 9-1-1 dispatching, the Auditor's Office relied on guidelines and standards issued by groups involved with public safety and telecommunications. For example, NENA has published numerous recommendations on things such as disaster recovery plans and minimum trunking requirements for 9-1-1 service. NENA's guidelines and standards related to equipment and networks represented one of many sources of information that formed the basis for best practices identified in the report.

In addition, the auditor relied on feedback from a 20-member technical advisory panel. This panel, comprised of people employed in the administration or operation of communications centers or involved in issues affecting public safety dispatching, offered practitioners' perspectives and guidance in defining effective and efficient 9-1-1 dispatching.

Understanding 9-1-1 in Minnesota

In Minnesota, the state has mandated statewide 9-1-1 coverage, but local governments (primarily counties) provide the service. Local governments make decisions on the level of 9-1-1 service, equipment and facility purchases, personnel, and other operational matters.

Despite statewide coverage, the level of 9-1-1 service varies. A total of 69 of Minnesota's 87 counties, representing about 93 percent of the state's population, had some form of enhanced 9-1-1 service (although not necessarily fully enhanced service) at the end of 1997. Only 29 of these counties had fully enhanced 9-1-1 service, with automatic location identification and automatic number identification; however, these 29 counties represented about three-fourths of Minnesota's citizens. Residents in 18 counties, about 7 percent of the state's population, had access to basic 9-1-1 service.

Best practices in one part of the state are not assumed to automatically work well elsewhere. Although some practices may apply to all communications centers regardless of size or location, many practices and methods work well only under certain conditions. The report tries to identify which best practices are easily transferable and which, on the other hand, require specific circumstances.

Emergency Medical Dispatching
For those communications centers that offer emergency medical dispatching (EMD), best practice would require several things. First, the center must develop an EMD priority reference system that is approved by a medical director. The system should identify standards for assigning the appropriate response units to incidents, as well as emergency protocol prompts that the dispatcher follows on either flip cards or computer to ask appropriate questions of callers and provide sound pre-arrival instructions. Second, the center should prepare dispatchers with appropriate training. Third, it should implement a quality assurance program to continually oversee and modify its practices.

In some centers, dispatchers transfer medical calls to ambulance services with employees trained as emergency medical dispatchers. In these cases, the center should ensure that the organization offering EMD trains its employees appropriately, maintains quality assurance mechanisms, and follows systematic procedures when querying callers, offering pre-arrival instructions, and dispatching response units.

Scott County, one of seven counties in the metropolitan region of Minnesota, provides EMD through private ambulance service. When the county's dispatchers receive a medical call, they transfer it to the ambulance service. Trained emergency medical dispatchers at the company dispatch ambulances and offer medical instructions prior to the ambulance's arrival. This allows Scott County dispatchers to focus instead on assisting field units and other calls; it also avoids the county expense for EMD training.

Radio Communications
Another best practice related to quality 9-1-1 dispatching is ensuring adequate radio communications. Besides having the radio channels, towers, repeaters, and other equipment necessary for reliable radio contact, communications centers need a means for confidential conversations during those times when security may be at risk. A center has to be able to maintain secure communications when confidential information is essential to a successful operation. How such security is provided can vary. Some examples are: electronic scramblers, mobile or cellular telephones, mobile data terminals, trunked radio systems, or other encryption arrangements.

To maintain security in communications in Mahnomen County, a rural, sparsely populated county in northwestern Minnesota, the sheriff's office installed an electronic security feature in its dispatch console and radios. Each mobile unit's radio and the dispatch console has an electronic chip with a

programmed code to scramble voice frequencies and prevent others from listening in on conversations between public safety is enhanced and the center's liability for broadcasting sensitive information over the air is reduced.

Coordinated Equipment Purchases
Communications centers can enhance their service and lower overall costs by coordinating the purchase and use of high-costs capital equipment. For instance, Ramsey County, the second most populous county in Minnesota, uses a computer-aided dispatch (CAD) system that it shares with 14 other cities in the county.

When Ramsey County decided to purchase CAD eight years ago, it opted to upgrade and share an existing system in the city of St. Paul. CAD information on 9-1-1 calls and communications between dispatchers and officers is transmitted through mobile data terminals in squad cars. The county purchased the radio frequency backbone (such as towers, transmitters, etc.) for mobile data terminals and offered to share it with police departments throughout the county. Those departments that purchased their own mobile data terminals received the benefits of secure communications, shared interagency information, and immediate access to information data bases (such as those for driver license checks) at costs much lower than would otherwise have been possible.

Other Best Practices
The report also describes best practices in a variety of other areas and offers examples of local governments that have implemented these practices. Some of the other areas are:

- using appropriate hiring practices to identify qualified dispatching applicants;
- providing initial and ongoing training targeted to dispatchers' individual training needs;
- evaluating personnel regularly;
- offering stress management measures;
- having access to weather information systems;
- installing the telephone features needed to efficiently process and transfer calls;
- designing a routine maintenance plan for equipment upkeep;
- considering opportunities for collaborative, joint dispatching;
- setting goals and objectives and measuring the center's progress toward improved performance;
- meeting regularly with emergency response agencies to solicit feedback on 9-1-1 system operations and how they can be improved; and
- developing an ongoing public education campaign.

For each best practice described, the report explains the practice and lists names and telephone numbers of contact persons at a limited number of communication centers where the practice is used. Although many other centers not listen in the report may also use the best practices.

The report, called 9-1-1 Dispatching: A Best Practices Review, is available over the Internet at: http://www.Auditor.leg.state.mn.us/pe9806.htm or by calling the Legislative Auditor's Office at 612/296-4708.

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