

Best Practices in Emergency Medical Services

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In this issue, EMS Magazine introduces Best Practices in EMS, an annual feature article that will focus on various best practices in EMS from systems around the U.S. Suggestions for future subjects and topics can be sent to emseditor@aol.com.

Have you ever read about a new clinical intervention that you thought was exceptional and wondered: How do I make that work in my agency? Have you ever seen a practice or tool another EMS department implemented and asked: How did they do that? Chances are, what you were looking at was a type of “best practice”—a program, training initiative, treatment modality or even a piece of equipment that had been tested and evaluated by an EMS agency or system. A best practice is found through the continuous process of learning,

feedback, reflection and analysis of what works and why. Once identified and documented, it then becomes the benchmark for future endeavors in a given discipline.

A common theme throughout the various definitions for “best practices” presented in the literature is a warning against becoming fixated on definitions or terms. Instead, the recommendation is to use these descriptions to move toward a common understanding of the process of identifying and solving issues important to your organization. Working toward best practices should not be an attempt to simply standardize a function, but rather to aim toward adapting it in ways that suit the particular issue and context, as well as to share stories, tools and understanding.¹

Here are some examples of best practices in EMS.

Clinical Response Planning—Syndromic Surveillance

The Centers for Disease Control and Prevention (CDC) defines syndromic surveillance as “using health-related data that precede diagnosis and signal a sufficient probability of a case or an outbreak to warrant further public health response.” As the name implies, syndromic surveillance involves live analysis of data (e.g., 9-1-1 calls and dispatch data) to identify patterns and trends as they emerge, rather than waiting days or weeks for conventional detection methods (e.g., patient chart review). The variables—or triggers—for detection can include clusters of certain key signs and symptoms, like acute breathing difficulties, abdominal pain or reports of unconscious persons.

Early detection allows appropriate action to be taken quickly, saving lives and protecting property. Unlike conventional syndromic surveillance data sources, EMS dispatch data are exceptionally time-sensitive, with systematically gathered information such as medical symptoms and accurate geographic locations of incidents. These data have been proven effective for response planning in various environments.²

Best Practice: Stout Solutions' FirstWatch

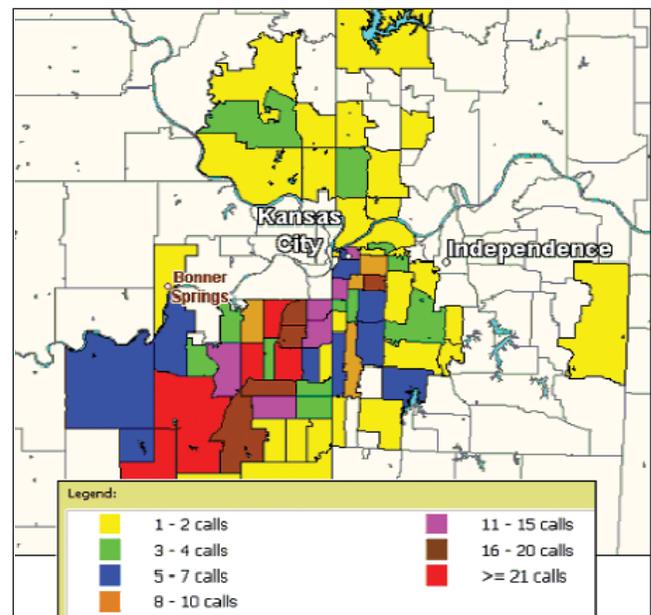
One of the most daunting challenges facing emergency responders in regard to data collection and comparison in the U.S. is the so-called “stovepipe effect,” in which one agency or city is unable to share information with other responders or systems. Stout Solutions of Encinitas, CA, has created a unique software product called FirstWatch, which overcomes this phenomenon by automatically aggregating data across city, county or state lines for a true analysis of regional—or even national—trends. FirstWatch analyzes between 4,000 and 6,000 incidents every day in the United States, making it the largest nationwide database of its kind.

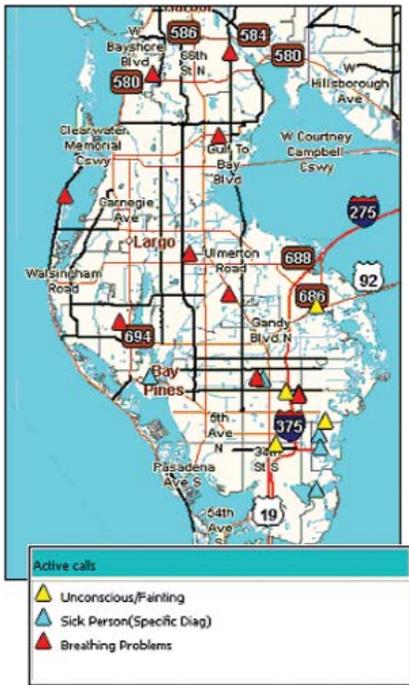
The FirstWatch technology was first installed in Kansas City (MO) in 1999. Currently the FirstWatch network protects more than 14 million people in an ever-growing number of communities covering more than 16 states, including Fort Wayne (IN), Richmond (VA), Pinellas County (FL) and San Diego (CA).³ This “across the borders” approach is a necessity for detecting all sorts of public health emergencies, such as influenza outbreaks, food poisonings and environmental toxins. After identifying an unusual number—or cluster—of

patients with similar symptoms, FirstWatch automatically alerts EMS and public health officials via pager, fax or e-mail, and then generates printed reports of the activity.

FirstWatch has successfully alerted officials to a number of different threats, including early identification of emerging influenza outbreaks in Texas, Virginia and Oklahoma. It was also utilized during the California wildfires in 2003, assisting in tracking respiratory symptoms in distinct geographic locales and recognizing the need for the redeployment of EMS resources to areas most affected by smoke plumes.

The price for the system is based on a combination of received volume (overall calls) and total population served, by way of a modified subscription system. The annual maintenance fees (currently at approximately 18% of start-up costs) include all software updates and access to the FirstWatch website. The system comes with certain preset triggers installed (variables an EMS system might wish to measure





Above and opposite: Screen shots from FirstWatch.

for trends or want to be informed about), with the ability to modify the program as needed. FirstWatch provides not only surveillance to its contracted systems, but also mapping capabilities and Internet connectivity.

Average start-up expenses could be anywhere from \$10,000 to \$80,000—again dependent on recorded volume. Many agencies have installed FirstWatch with grant funding from state and federal programs.

Todd Stout, CEO of Stout Solutions, estimates that 50% of all customers use the program for syndromic surveillance, as well as distinct operational monitoring—Web-based reporting, overall system monitoring, analysis of the difference between dispatch data and what a call actually becomes, demand analysis, employee performance statistics, ED vs. EMS data, etc.

EMS systems all over the U.S. should be proactive in partnering with public health and public safety agencies to provide information for surveillance data compilation. Even working within the pre-established guidelines surrounding their dispatch centers, ambulance call statistics offer much more in the way of early detection of certain trends than either hospital or private practice medical settings. The future will hopefully see syndromic surveillance implemented nationwide and include an increased focus on EMS dispatch and run data.