FDNY's computerised triage software

Adding Computerised Triage Software (CTS) into Computer-Aided Dispatch (CAD) was a system upgrade that the FDNY did not take lightly.
The lives and well-being of New York citizens depend on how that software upgrade goes, as well as how fast dispatch operators can learn the new system to make sure response time doesn't increase.

The old triage system was established in the 1980s. Dispatchers were instructed on how to ask questions and follow a paper-based system (called Kardex) to determine how critical each medical call was in order to dispatch the correct ambulance.
The FDNY realised improvements could be made with response time, data tracking and dispatch training, as well as accuracy of dispatching the correct resources for each call type.

Finding the best vendor

Deputy Commissioner Edward Dolan, with his background managing call centers, leaned towards call-scripting software. "You don't need to know EMS to know how to write call-scripting software," he said. He sought the expertise of a UK-based company, Infinity CCS, because it had a customer service model that better suited the FDNY's needs for call type algorithms. "We were the first and, to my knowledge, the only EMS system in the country that successfully bought a computerised triage software application from a company that doesn't build their application just for 911 use."

Commissioner Dolan knew that it was important to ensure the company would be able to scale to the FDNY's volume of 1.5 million EMS incidents per year. "While that seems like a lot of call transactions, call centers typically do in excess of millions of calls a year," he continued.

Why CTS was needed

One of the reasons that the FDNY wanted to move to computerised triage was due to the increase in volume over the years. "We are processing approximately 5,000 calls per day," Deputy Assistant Chief Anthony Napoli said.

There are 450 EMD personnel assigned to Communications. On a daily tour basis, EMD operates with approximately 75 members, which includes the Training Staff, since they are constantly updating and training. Chief Napoli continued, "A larger group of call-takers puts a heavy burden on the training. Given the type of questions that need to be asked, it was getting harder to drill everyone on every question on every possible scenario."

The department wanted uniformity among all call-takers. "One desire was to enhance participation and ensure that we're asking the same questions for every call regardless of who's staffing the telephone that shift," said Commissioner Dolan.

EMD Azure McPherson has been working in EMD for six years and said she likes the CTS system better than Kardex. She explained, "You had to turn away from the computer and flip through the Kardex to make sure you asked the right questions to get the call types. Now, you don't have to turn away from the screen."

EMD McPherson continued, "There's a drop-down menu in front of the call-taker and, based on what you select as an answer, the next question is prompted. The computer makes the decision and it forces you to ask all of the questions. Whereas with the Kardex, you may have missed a question or two. With the new system, you can't click 'next' until you ask the question, which makes everything easier because you're asking all the correct questions to get the correct call type."

David Prezant MD, Chief Medical Officer, said, "Now that these algorithms and branch questionnaires are all computerised, it gives us the opportunity to say, 'This is the way everyone is going to do it. We're monitoring it and if processing call types is taking longer than necessary, we're going to make changes. We're able to monitor every aspect."

Using data to improve call response times

"The goal of computerising triage is to ensure that there will be improvements in accuracy and speed of response," said Assistant Commissioner Kat Thomson.

With this new form of triage, the software is able to collate the answers to the questions call-handlers ask and compile all that data.

"We identified some questions that were creating inefficiencies. We were asking questions that weren't critical. We were able to say, 'Let's ask a more important question first,' so we can speed up our ability to triage, make a determination of the type of patient we have, and send the correct resources," Commissioner Thomson concluded.

"For all our calls, processing time went down by 6.7 seconds after CTS was up and running. We also found that processing times for our high priority calls – those that are potentially life-threatening – went down by 3.6 seconds," enthused Commissioner Dolan.

Changing algorithms in real time

"Right now, if there was an outbreak taking place in the City of New York where we had to ask specific questions related to the operation, we potentially can make that change on the fly and add another set of questions right into the algorithm," Chief Napoli explained.

"The biggest part of this triage software is the fact that we have to be able to change questioning to go with the 'crisis du jour'" continued Chief Napoli. "Because there are things happening in this world that none of us would have dreamt about 10 years ago, we have been able to adapt and mold ourselves accordingly with what's happening."

Improving call types and segments

"The main question we're answering is, 'What's the impact of this new system overall on response times'?" said Commissioner Thomson. "We examined, 'What's the impact of this on our most critical call types'? because we care about those the most. We were able to isolate life-threatening call types that we don't want to have an adverse impact on. We could see where phone calls or triage outputs were making things slower, see what the problem was and publish it in a way that has never been possible before," she continued.

"We have that power to know, through accurate analytic information, what we need to do to improve our system. And the system needs to improve in a dynamic way. And if we achieve that – and we already have demonstrated that we are achieving that – then the people benefit. We get there faster, with the right resource," stated Dr Prezant.

The FDNY's EMD is one of a kind

"This software is efficient and fast and allows our efficiency and accuracy to go hand in hand," said Chief Napoli. "I already have seen that this product is saving lives. This software has made it easier so that our ARDs don't have to remember what the next step is, what they have to do and where they need to go", he said.

"We've implemented a whole new system without a hitch. We're already seeing success. I think it's a huge accomplishment," Dr Prezant concluded.

For the full case study by FDNY, please visit: http://www.fdnypro.org/fdny-computerized-triage-software/

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> Deputy Commissioner
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