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## **An S O S for 911 Systems in Age of High-Tech**

By **SHAILA DEWAN**

TAHLEQUAH, Okla. — As in many areas of the country, more 911 calls here come from cellphones than land lines. But 40 percent of the nation's counties, most of them rural or small-town communities like this one, cannot yet pinpoint the location of cellphone callers, though the technology to do so has been available for at least five years.

The delay has been life-threatening. Last December, the Cherokee County 911 operators in this eastern Oklahoma town listened for 27 minutes and 34 seconds to the screams and retching of a caller, Misty Kirk, as an intruder beat her in front of her two daughters, ages 3 and 4. There was little else they could do.

Ms. Kirk, convinced that her assailant, whom she identified as her ex-husband, was angry enough to kill her, had managed to dial 911 on her cellphone and throw it under the sofa, praying that she would be found and rescued.

"I think she's got a baby there with her," one of the dispatchers can be heard saying on the 911 tape. Then, "How long has she been silent?"

Since the inception of 911 more than 30 years ago, the three-digit S O S has become universally familiar and relied upon. But the system has not kept pace with the nation's rapidly changing communication habits. As it ages, it is cracking, with problems like system overload, understaffing, misrouted calls and bug-ridden databases leading to unanswered calls and dangerous errors.

At the same time, the number of calls continues to grow. In Cherokee County, for instance, the volume has increased by 20 percent a year.

Officials in places large and small have declared a 911 crisis. When 30,000 emergency calls went unanswered in Chattanooga, Tenn., where Bob Corker, the Republican candidate for United States Senate in 2006, had served as mayor, his Democratic opponent, Harold E. Ford Jr., made it a campaign issue.

Officials in Riverside County, Calif., fed up with misrouted calls, have been advising residents to call the sheriff or local fire department directly.

In Bessemer, Ala., city employees could not get through to their own 911 system when a colleague had a seizure, at a time when the city and others like it are struggling to upgrade their systems at a cost of hundreds of thousands of dollars.

Yet even the newest systems cannot adequately handle Internet-based phone services or text messages, which emerged as the most reliable form of communication during Hurricane Katrina.

“Everyone expects 911 to work perfectly 100 percent of the time,” said Patrick Halley, the governmental affairs director for the National Emergency Number Association, whose state-by-state tracking shows that New York, New Jersey and Connecticut are in the forefront of adopting new technology. “And the public doesn’t really care about 911 until they go to use it and expect it to work perfectly and it doesn’t.”

Misty Kirk was lucky — her attacker eventually became suspicious and demanded to know where her phone was. Her son, 7, retrieved it, hanging up in the process, and dispatchers were able to call back and get the address; the attacker fled.

The district attorney in Tahlequah, about 90 miles east of Tulsa, has charged Ms. Kirk’s ex-husband, Russell W. Kirk, with burglary, domestic abuse in front of a minor and violating an order of protection.

Others have not been as fortunate as Ms. Kirk. In nearby Okmulgee, Okla., last November, 4-year-old Graciella Mathews-Tiger died in a house fire after a 911 operator who lacked the technology to pinpoint the call misheard the address.

The caller, a frantic construction worker with a cellphone, confirmed the incorrect address and hung up.

Officials have emphasized that they do not know whether the girl could have survived the fire — it was already well under way when the call came and several windows were blocked by furniture — but the incident became a vivid illustration of the need for more advanced equipment, which would have displayed the correct location on a computer screen.

It has also exacerbated a pitched, but not unique, conflict among local agencies in Okmulgee County, which have focused their ire on Robin Young, a professional 911 coordinator hired by

the county four years ago to bring order to an already faltering system.

Ms. Young's employees answer 911 lines, then transfer calls to dispatchers for individual fire and police departments in the county, a system that requires callers to repeat themselves.

Fixing the redundancy would require agencies to yield money and control. Fire departments, for example, might have to pay the county to dispatch and answer calls. "From a community standpoint, consolidation is the best way to go," Ms. Young said. "But the dispatching issue is a political issue no matter where you go."

At the time of the fire and the beating, both counties, Okmulgee and Cherokee, had already begun to upgrade their systems, a lengthy and expensive process. In Cherokee, Darryl Maggard, the 911 coordinator, spent a year driving around the county with a contractor, marking locations with a global positioning system to create maps. The improvements will cost \$220,000, Mr. Maggard said.

Modern 911 technology can be broken down into three levels, the most basic and widespread of which tells dispatchers the phone number and address of land-line calls.

At the next level is Enhanced 911 Phase I, as it is called, which provides the call-back number of wireless callers and the location of the cellular tower their signal has reached. Phase II provides a more precise location, accurate within 50 to 300 meters depending on the technology the carrier has chosen.

[Kevin J. Martin, the chairman of the Federal Communications Commission, said in Washington this week that he would propose new rules to improve accuracy.]

Experts are laying the groundwork for what they call Next Generation 911, which will better handle Internet-based calls, text messages, cellphone photos and other forms of communication already in common use.

"Deaf people are using text messaging," Rick Jones, the operations director for the national association, said by way of example. "They can't talk to 911."

For now, though, many counties are focused on Phase II, which shows a caller's location on a computer map, allowing emergency responders to find people who either do not know where they are or cannot say. Beyond saving lives, it promises to put a stop to chronic prank callers or tell dispatchers when many calls are coming from the same area, which happens when multiple cellphone users try to report the same car accident or heart attack, threatening to overload the

system.

There are more than 6,000 911 call centers nationwide, and it is difficult to determine how much it will cost to bring them to Phase II. Last year, the National Emergency Number Association came up with a number, \$340 million, but experts with the association caution that the estimate is loose because counties vary so much in size and existing equipment.

Some counties have multiple 911 centers, others have one, and still others handle wireless calls differently from land lines. In Okmulgee, some land-line calls are answered by the City of Henryetta, but all wireless 911 calls are picked up by the county.

New York, New Jersey and Connecticut are well ahead of the game, with all of New Jersey and Connecticut already using Phase II systems, according to the National Emergency Number Association, and more than 80 percent of New York counties using them.

Federal policy has given states and local governments wide latitude, permitting, but not requiring, surcharges on cellphone lines to pay for upgrades. States in turn have allowed surcharges ranging from 28 cents to \$3 a month, and have set varying requirements for how the money can be used.

In the meantime, the traditional financing for 911, a surcharge on land lines, is declining as people switch to cellphones.

In 2004, Congress passed the Enhance 911 Act, authorizing \$250 million a year for new 911 technology grants, but no money was appropriated. Senator Ted Stevens, Republican of Alaska, where vast tracts of wilderness make Phase II technology particularly important, is leading an effort to release \$43 million to finance the grants.

In the absence of federal oversight, states sometimes fail to provide such things as minimum training requirements for 911 operators or subsidies for poor areas. In Mississippi, only one in five counties, including wealthy areas like Tunica, have the Phase II system.

"The state's not taking that much leadership in it," said David Senter, the 911 coordinator for Prentiss County, Miss. "The reason they've not is the money issue.

"By the time you pay for the equipment, you pay salaries, you pay the insurance and bonds and whatnot," Mr. Senter said, "you really have to be an urban county to afford it."

But rural counties may need the location capability most, said Theresa Alberty, a dispatcher in Cherokee County who has answered emergency calls for more than 20 years.

“People say, ‘I’m on the water and I’m at the tree swing and how come you can’t find me,’” Ms. Alberty said.

Or, she added, they call from a house that 15 years ago might have been marked by nothing more than a rural mail route number. “What’s incredible,” she said, “is the number of people that cannot tell you what their address is or where they live.”

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