Automatic acoustic gunshot sensor technology may benefit shooting victims

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A number of U.S. cities have installed acoustic gunshot sensor technology to accurately locate shooting scenes and potential gunshot victims, but the effectiveness of this technology for saving lives had not been studied until surgeons at the University of California, San Francisco-East Bay in Oakland, Calif., found that this sensor technology may benefit shooting victims by helping them get to the emergency room sooner than they may have otherwise.

"Our key finding was that the use of these acoustic gunshot sensors showed promise as a system that may benefit gunshot victims," said lead study author Magdalene A. Brooke, MD, a general surgery resident at University of California San Francisco-East Bay. The study was presented at the American College of Surgeons Clinical Congress 2017. Gregory P. Victorino, MD, FACS, a professor of clinical surgery and trauma surgeon at UCSF-East Bay, was the senior author of the study.

Gunshot sensor technology involves sensors, essentially microphones, mounted on buildings and utility poles. These sensors detect the sound waves of a gunshot, and software calculates input from several sensors to triangulate its location with a margin of error of about 80 feet. The system can distinguish between single and multiple gunshots, and can differentiate gunshots from fireworks and other sounds that may activate it. The idea is to detect gunshots that go unreported and provide responders with more accurate information on the point of origin than they can glean from citizens' calls. About 90 U.S. cities have this technology, and Oakland's system has been in place since 2006. Fewer

than 20 percent of shots fired are reported to police, the study authors stated.

The researchers analyzed cases of 731 gunshot victims, 192 (26 percent) of whom were identified with acoustic sensor technology. Compared to shooting victims identified with conventional policing methods, sensor-related patients were more likely to be female (20.8 percent vs. 12.8 percent, p