Study: Cellphone Bans Associated with Fewer Urban Accidents

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CHAMPAIGN, Ill. — Cellphones and driving go together like knives and juggling. But when cellphone use is banned, are drivers any safer? It depends on where you're driving, a study by University of Illinois researchers says.

The study found that, long-term, enacting a cellphone ban was associated with a relative decrease in the accident rate in urban areas. However, in very rural areas, cellphone bans were associated with higher accident rates than would otherwise be expected. "The main idea is to use the eye test when it comes to cellphone use," says study leader Sheldon H. Jacobson, [1] a professor of computer science [2] and mathematics [3] at the U. of I. "If you look around and it's busy, it's a good idea to put the cellphone down and not use it when driving." The Illinois study, published in the journal Transportation Research Part A: Policy and Practice, is set apart by two factors: the length of time and the method of measuring driver density. The study examines long-term trends of accident rates and their association with cellphone bans, comparing seven years of driver data in New York – the first state to institute a statewide ban – and neighboring Pennsylvania, which has no ban. Both states have similar weather patterns and wide diversity in size and population density of counties. "Most other studies focus on a very short-term analysis," Jacobson said. "A law is enacted; what's the impact immediately? We try to take a much longer view and look at the impact not just over six months to a year, but over several years." While most studies define driver density by licensed drivers per square mile, the Illinois researchers looked at the number of licensed drivers per mile of roadway to get a better estimate of traffic volume by county. They classified counties as urban, rural or very rural, and performed statistical analyses to look for trends in accident rates in each class over time. Across all three classes, enacting a cellphone ban was associated with an initial rise in accident rate, followed by a steeper decline than would otherwise be expected, although the magnitude differed in each class of counties. In higher driver density areas, there was a clear, statistically significant, association between the enacting of a cellphone ban and relative reduction in personal injury accidents after seven years. By contrast, such bans in very rural areas were associated with a relative increase in accident rates over the same period. "What we found in our research is that the cellphone ban was associated with different outcomes in different groups of counties," said industrial and enterprise systems engineering [4] researcher Douglas King, a co-author of the study. "Based on this research, it suggests that a blanket cellphone ban may not always lead to a greater benefit. Based on the seven-year time period that we were able to examine, the outcome in each group of counties after the ban was not uniformly beneficial." The cause of the slight increase of accidents in very rural areas is unknown, although Jacobson and King hypothesize that lower enforcement or other factors unique to rural driving may contribute. "The other possible explanation is that in lower driver density areas, the number of accidents is smaller,

and as a result the data collected isn't as rich," Jacobson said "This could be just a statistical anomaly." Whatever the reason for the relative increase in rural accidents, the relative decline in urban accidents in New York versus Pennsylvania was clear: After the initial ban enactment, accident rates declined and continued to be lower over time. "This is the kind of research that definitely should encourage densely populated areas to enact these laws," King said. "There's sufficient evidence to support it. When you start getting into rural and very rural areas, I think you have to have to take it in a case-by-case basis. But for urban areas, the evidence is substantial." U. of I. graduate student Kevin Ryan and Air Force Institute of Technology researcher Matthew Robbins were co-authors of the paper. This work was supported by the Simulation and Optimization Laboratory in the department of computer science at the U. of I.

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