Evaluation of the Use and Benefit of Passive Alcohol Sensors During Routine Traffic Stops

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BACKGROUND: Past studies have demonstrated that police officers fail to detect a substantial proportion of alcohol-impaired drivers during traffic enforcement and that the use of passive alcohol sensors (PAS) could increase the driving-under-the-influence (DUI) arrest rate. Research has indicated that the PAS increases detection of alcohol-impaired drivers at sobriety checkpoints by about 30 to 50% and by 8 to 10% during traffic stops by officers on special DUI patrols.

OBJECTIVE: Does the use of a PAS in routine traffic enforcement by officers without specialized DUI training increase the detection and arrest rate of alcohol-impaired drivers?

METHODS: The Anne Arundel County, Maryland Police Department, provided 12 officers (randomly selected) in one traffic patrol squad (Squad A) with a PAS. A comparison squad (Squad B) of 12 officers (randomly selected) performed traffic enforcement without the PAS. After each squad made approximately 500 traffic stops, they switched roles. Squad B officers were trained and equipped with the PAS, and Squad A officers conducted their subsequent traffic stops without the PAS. Each squad again made approximately 500 traffic stops during this second round. Data were collected on each traffic stop (N = 2,119) from each squad in both rounds including the reason for each traffic stop, PAS results (as appropriate), preliminary breath-test (PBT) results (if used), and citations or arrests (if issued).

RESULTS: Overall, there were no differences in the DUI arrest rate between the officers with the PAS and the officers without the PAS when combining both rounds. However, during the traffic stops when the PAS was used, the DUI arrest rate was 7% compared to 5% when the PAS was not used. Most of this effect was due to a greater proportion of traffic stops occurring at night when the PAS was used versus when the PAS was not used. The DUI arrest rate for night stops was 10% when the PAS was used and 10% when the PAS was not used. The PAS did help officers who made no DUI arrests without the PAS (0%) during nighttime stops but made several DUI arrests with the PAS (5%) during nighttime stops combining both rounds (p < .01). The DUI arrest rate for traffic stops due to unsafe lane changes, failure to drive right of center, and negligent driving was 22% compared to 2% for traffic stops due to speeding and 6% for traffic stops for all other reasons (p < .01). Thirty-two of 34 drivers (94%) with positive PBT results were detected by the PAS.

CONCLUSIONS: There is some evidence that the use of the PAS increased the detection of alcohol-impaired drivers but no evidence that it increased the overall DUI arrest rate of the officers. The PAS did seem to help officers who typically do not make DUI arrests. In summary, the PAS is probably best used at sobriety checkpoints rather than during routine stops.

Keywords: Passive alcohol sensors, Impaired driving arrests, Traffic enforcement