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The transport of people and goods along roadways is a familiar system that many of us encounter each morning and evening as we go about our daily lives. Traffic systems, like any other functional system, are most efficient when their interacting components (e.g. vehicles, drivers, traffic controls and infrastructure) work in harmony to support optimal driving conditions.

Like many of our fellow road warriors, we roll along in our mobile cubicles seemingly unaware of how the breakdown of any one of these crucial elements could compromise the entire system and disrupt the driving experience. Three examples of these breakdowns are: a stalled vehicle in a left turning lane, blinking lights at a four-way intersection, and a collapsed bridge. Traffic system administrators compensate for disruptions by allocating resources to implement workarounds to restore uninterrupted traffic flow. Workarounds might include detours, which can translate into additional travel time and increased frustrations for the drivers.

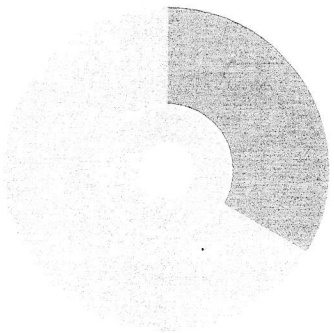
These scenarios are generally out of the control of the driver, even in the case of a stalled vehicle. We're fairly certain that if drivers could control when and where their cars stalled or died, they would choose any other spot. There is one way in which the driver can contribute to a breakdown in the traffic system—by choosing to indulge in the dangerously growing trend of drugged driving.

Google the term "drugged driving" or "DUID" (Driving Under the Influence of Drugs) and you're bound to find pages upon pages of statistics, news, and articles on this topic. Drugged driving is a serious traffic safety issue. Highway safety advocates are fighting to increase awareness and address the dangers associated with drugs and driving. As with drunk driving, this threat is not isolated to the driver, but also to passengers and anyone in their path. In this article, we discuss the scope of drugged driving within a traffic system and one underutilized method for law enforcement officers to more easily identify drugged drivers.

Cracks in the System

We've all driven over a crack in the road at some point in our lives. Over time, this crack can grow, increasing in size, expanding the area it covers until one day you're driving over a pothole.

Drugged driving represents another type of crack in the system. Unlike infrastructure cracks that combine over time to produce a localized threat, drugged drivers are multiple individual cracks spread over the entire road network. In time these individual unconnected cracks resulting from drug use will break down further at multiple locations, impacting their immediate surroundings and threatening to destabilize the entire system.



33 PERCENT

IN 2009, APPROXIMATELY 33 PERCENT OF FATALLY INJURED DRIVERS WHO WERE TESTED FOR DRUGS TESTED POSITIVE.

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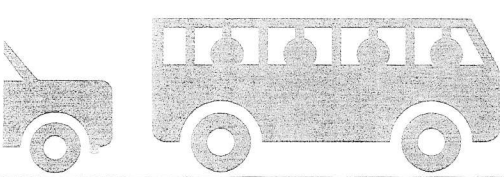
Drugged driving is a national epidemic with devastating consequences. The 2007 National Roadside Survey showed that about 16 percent of weekend nighttime drivers have drugs in their systems. In 2009, approximately 33 percent of fatally injured drivers who were tested for drugs tested positive.

In every state, it is illegal to drive while impaired by drugs. In 1988, the Department of Transportation (DOT) established a zero tolerance or "per se" standard prohibiting commercial drivers from driving with illegal drugs in their system. Since that time, 18 states have passed similar per se laws making it illegal for anybody to drive with drugs in their system. These states include: Arizona, Delaware, Georgia, Illinois, Indiana, Iowa, Kentucky, Michigan, Minnesota, Nevada, North Carolina, Ohio, Pennsylvania, Rhode Island, South Dakota, Utah, Virginia, and Wisconsin. These laws vary significantly in scope. In some states, the law applies to all controlled substances. In these states, the law typically contains exceptions for drivers who take medications in accordance with a valid prescription. Of course, those drivers can still be prosecuted for driving while impaired by drugs, just as a driver with a blood or breath alcohol level (BAL) below the illegal 0.08 limit can be prosecuted for driving while impaired. In other states, the law is restricted to illicit drugs or even a limited number of illicit drugs.

Defense attorneys have challenged and continue to challenge the per se DUID laws on a variety of constitutional grounds. They argue that the laws are vague, overly broad, and violate due process, fundamental fairness and equal protection. They base their claims primarily on the fact that certain drugs and/or their metabolites, especially marijuana, are detected long after their impairing effects wear off using some screening methods and the threat to public safety is gone. However, every court that has considered these challenges has upheld the law's constitutionality. At least two courts, however, have declared a per se DUID law unconstitutional in specific instances. In *State v. Boyd, 31 P.2d 140 Ariz. Ct. App. 1st 2001,* the court ruled that a driver could not be held accountable under the per se DUID law for ingesting an uncontrolled substance that metabolized into a banned substance because the average person would not have known that he or she was violating the law. In *Love v. State, 517 S.E.2d 53 Ga. 1999,* the court held that a per se law distinguishing between offenders who smoked cannabis pursuant to a valid permit and those who did not, was not rationally related to the legislation's purpose of protecting the public and, therefore, unconstitutional as applied to drivers who did not have valid permits.

In states with medical marijuana laws and per se DUID laws, marijuana is typically treated as a prescription drug. In other words, offenders who drive after ingesting cannabis pursuant to a valid permit, cannot be prosecuted under the per se provisions, but can be prosecuted under the impairment provisions. In states where marijuana is legal, users can nonetheless be prosecuted for driving while impaired by marijuana, just as they can be prosecuted for driving while impaired by alcohol.

The Office of National Drug Control Policy (ONDCP) and National Highway Traffic Safety Administration both make reducing drugged driving a national priority. In fact, ONDCP's national strategy includes a goal of reducing drugged driving in the United States 10 percent by the year 2015. Despite good intentions, however, few drivers are arrested and prosecuted for drugged driving. The question, of course is: Why Not? While there are several answers to this question, the single biggest reason that most drugged drivers are not identified is that officers do not test impaired drivers for drugs. In the vast majority of jurisdic-



tions, law enforcement officials do not test drivers for drugs if they test above the 0.08 limit for alcohol because (a) collecting samples by traditional methods is time consuming; (b) it is expensive to process drug tests (well over $100); and (c) most state laws do not provide enhanced penalties for those who test positive for alcohol and drugs. These policies made sense when officers lacked a quick, easy, and inexpensive method to screen for drugged drivers. However, an improved, on-site screening method is changing that dynamic.

Effects of Drugs on the System

Drugs can affect a driver's perception, attention, balance, coordination and reaction-time putting stress on the traffic system when crashes or fatalities occur as a result of DUID.

Coordination

Coordination and psychomotor control are essential since driving is a physical task. Drug use may impair a person's ability to brake, steer, accelerate, and otherwise perform the many physical tasks associated with driving. Drug impairment may cause a person to brake too forcefully or apply the wrong amount of force while steering.

Judgment/Decision Making

Drivers must process information and then make appropriate decisions. Some drugs affect cognition and have the potential to impair the ability to concentrate, detect, anticipate risk, avoid hazards or make emergency decisions. Mood-altering drugs have the potential to affect judgment. For example, stimulants can produce exhilaration, excitement and feelings of mental and physical power. This type of response may, in turn, influence driving behavior (i.e., increased risk taking).

Perception

The majority of information a driver processes is visual. Drugs that can produce visual or auditory distortions or drugs that can affect perception of time and distance (i.e., marijuana) have the potential to impair driving. Some depressant drugs and therapeutic medications may cause blurred vision.

Tracking

Tracking is necessary in order to maintain position on the roadway and recognize moving objects. Depressant drugs, inhalants, and PCP, can cause ocular disturbances and impair a person's ability to track a moving object.

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Reaction Time

A driver must not only receive information, but must also process it, make a decision, and then react. Several drugs, most notably depressants, can impair reaction time. Slowed reaction times (reaction deficits), particularly with respect to braking and steering, may cause a driver to strike a fixed object, rear-end another vehicle, or fail to execute an evasive maneuver.

Divided Attention and Multitasking

Driving requires divided attention, rather than focused attention. Divided attention involves the performance of multiple tasks, simultaneously. Drivers must observe road signals and monitor pedestrians and other vehicles in addition to the environment. At the same time, they must effectively operate the gas, gears, and braking and steering systems. While many of these functions are well learned, the driving task itself has a high demand for information processing. Ingestion of depressant drugs or marijuana may impair divided-attention skills, as may stimulants, which can produce hyper vigilance, preoccupation or distractibility.

Current Options for Identifying Drug Use

Drugged driving produces weaknesses that can manifest as collisions throughout the traffic system. Detecting and isolating drug-impaired drivers is of vital importance to the system's ability to ensure the safe transport of people and goods along roadways.

The following scenario illustrates the choices that law enforcement officers and justice officials face when considering the drug-testing component for their roadside risk minimization strategies.

A 24-year-old male, named Sam, is on his way out to meet some friends at a club for the evening. He decides to start partying early and snorts some cocaine before climbing behind the wheel. While driving to the club, he swerves in and out of the yellow lines, follows other vehicles too closely, and repeatedly presses the brakes, jerking the car back and forth. A police officer observes Sam's erratic driving and pulls Sam over. The officer administers the Standardized Field Sobriety Tests and determines that Sam is under the influence of drugs. Now, let's compare the methods at the officer's disposal to screen Sam for possible drug use, from shortest to longest detection times.

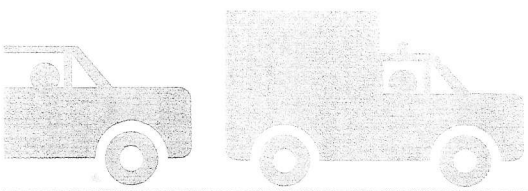
Blood: Blood is the most common method and is the traditional "gold standard." Blood results are an excellent indicator of 'recent' consumption since blood testing has a narrow detection window. However, blood testing is difficult, time-consuming, invasive, and expensive. Blood samples must be collected at a separate facility and then sent to a laboratory where they are tested.

Oral Fluids/Saliva: Oral fluids are a great indicator of 'recent' consumption and, similar to blood, has a narrow detection window. Oral fluid testing is much less invasive than blood or urine testing. Samples are obtained quickly and easily. On-site kits allow officers to screen for drug use at the roadside in just a few minutes, with any positive screens then sent to a laboratory for confirmation testing.

Sweat: Sweat is a noninvasive method of testing and a sample can be easily obtained at the roadside. However, sweat does have a longer detection window than blood or saliva, so it is not the best indicator of 'recent' consumption. There are only a limited number of labs that can process sweat samples for confirmation testing.

Urine: Urine has a longer detection window than the other methods listed above. However, urine testing may "miss" very recent drug usage. Urine testing requires a bathroom facility, which makes it time consuming and confirmation testing is expensive.

Hair: Hair testing has the longest detection window; however, an individual's hair must grow for approximately seven days before the drug use can be detected. For this reason, it is not a good indicator of recent consumption.



There are only a few laboratories that have the capability to test hair.

The Oral Fluid Dynamic

There are many options to choose from for car-side drug screening. Each method has its merits, but may incur significant challenges in the field. Roadside drug testing using oral fluid, offers the most flexibility for use within a traffic system. Its ability to detect recent consumption, gender independence, narrow detection windows, and lab support, makes oral fluid testing the ideal solution when making decisions in an at-risk traffic situation.

Today's on-site oral fluid kits are easy to use and provide rapid results. Researchers have conducted several important studies to assess the usefulness of the kits, including, most notably, the Roadside Testing Assessment (ROSITA) and the Driving Under the Influence of Drugs, Alcohol and Medicines (DRUID) studies.

The European Commission organized the ROSITA (Roadside Testing Assessment) study and conducted it in two phases. The objective of Phase I, which was conducted from 1999–2000 in various European countries, was to establish minimum standards for roadside testing equipment, and to make an international comparative assessment of existing equipment or prototypes. The objective of Phase II, which was conducted from 2003–2005 in various European countries and in several locations within the United States, was to evaluate certain available kits. Some on-site oral fluid devices performed better than others, as one would expect. The researchers recommended that any oral fluid device used at the roadside should have at least 90 percent or better sensitivity, 90 percent or better specificity, and at least 95 percent accuracy. For more information, please visit www.rosita.org.

The DRUID (Driving Under the Influence of Drugs, Alcohol and Medicines) study was conducted from 2006–2008 utilizing oral fluid devices from the ROSITA II project, as well as new or improved devices from existing or new manufacturers. The DRUID study was comprised of two phases. In Phase I, researchers tested 10 products. They identified five that were the most promising from a pragmatic law enforcement perspective. In Phase II, they evaluated three instrument-based oral fluid screening devices that required (a) a fixed location, (b) power supply, and/or (c) relatively good lighting conditions to perform a test and analysis. At the conclusion of Phase II, they narrowed the field to two promising devices. For more information, please visit www.druid-project.eu.

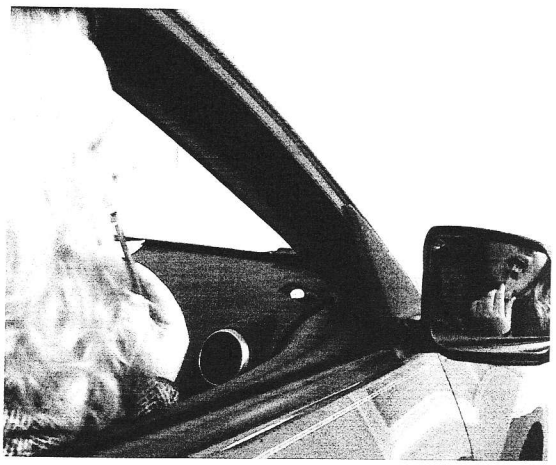
More recently, the authors participated in a pilot study involving oral fluid testing in Miami, Florida. With the agreement of the Miami-Dade County State Attorney's Office, officers with the Miami-Dade County Police Department tested two on-site kits to determine if they could help officers identify drugged drivers for forensic testing. The officers liked the kits and laboratory analysis showed that they were sufficiently sensitive to have value.

The Center for Forensic Science Research and Foundation earlier this year conducted an independent laboratory evaluation of 10 various on-site oral fluid screening devices. The study evaluated the individual performance of each device's sensitivity, specificity and accuracy at different concentration levels of spiked samples.

After reviewing the findings from numerous independent studies, including those outlined above, and performing internal due diligence, 16 states have added oral fluid to their roster of 'specimens that may be tested'.

Conclusion

Any traffic system is only as good as its underlying components. We cannot expect to reduce drugged driving without identifying and addressing drugged drivers. Oral fluid testing provides officers with a non-invasive, on-site tool that is an inexpensive, quick, easy way to determine which drivers need to be removed from the flow of traffic. ▮



References

Kerrigan, S., APRI Drug Toxicology for Prosecutors (Oct 2004).

Lacey, J.H., Kelley-Baker, T., Furr-Holden, F., Voas, R., Moore, C., Brainard, K., Romano, E., Ramirez, A., Torres, P., Berning, A., 2007

National Roadside Survey of Alcohol and Drug Use by Drivers: Drug Results, NHTSA (2009).

Office of National Drug Control Policy, White House National Drug Control Strategy, 2013.

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