Practicalities of Drug and Alcohol Testing in the Workplace

- Steve Wilkinson  2nd December 2014
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1. Overview Dräger

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6. Questions
UK HQ - located in Blyth on the NE Coast of England

- Over 400 employees

- Extensive facilities
  - Research and development
  - Design
  - Manufacture
  - Sales & marketing
  - Purpose built training facility
  - Product servicing workshops

- Worldwide > 10000 employees

- Group Turnover 2013 > €2.3 billion

- Largest supplier of breath alcohol equipment in the World
1. Overview Dräger

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Why have a Drug & Alcohol Policy?

- Companies must … comply with legal requirements
- Corporate image with the wider public / potential customers
- Staff concerns
  - Safety of other staff, Public and the employee themselves
  - Performance and efficiency at work
  - General health and well being
- Police will shortly have the ability to test for drugs in saliva
HEALTH AND SAFETY AT WORK ACT 1974
- RESPONSIBILITIES OF EMPLOYERS AND EMPLOYEES TO CREATE SAFE ENVIRONMENT. RISK OF “ABUSERS” BEHAVIOUR CAUSE HARM TO THEMSELVES OR OTHERS

TRANSPORT AND WORKS ACT 1992
- RAILWAYS AND OTHER GUIDED TRANSPORT SYSTEMS, RESPONSIBILITIES FOR EMPLOYER AND EMPLOYEES. OPERATORS MUST SHOW “DUE DILIGENCE” IN TRYING TO PREVENT AN OFFENCE-WORKING UNFIT THROUGH DRUGS OR DRINK

ROAD TRAFFIC ACT 1988

RAIL AND TRANSPORT SAFETY ACT 2003

CORPORATE MANSLAUGHTER AND CORPORATE HOMICIDE ACT 2007

HEALTH AND SAFETY OFFENCES ACT 2008

MISUSE OF DRUGS ACT 1971
- ALSO COVERS THE KNOWING USE OF WORK PREMISIES FOR SUPPLY, PRODUCTION OR DRUG MISUSE

LACK OF CASE LAW
- FOR SAFETY CRITICAL TASKS OR INDUSTRIES WITH SIGNIFICANT RELIANCE ON PUBLIC CONFIDENCE, AN APPROPRIATE WORKPLACE DRUG TESTING PROGRAM WOULD NOT APPEAR TO RUN COUNTER TO CURRENT UK LEGISLATION RE FOI, HUMAN RIGHTS, DISABILITY
US National Institute for Drug Abuse has shown employees using drugs are
- Only two-thirds as productive as their colleagues
- 2-3 times more likely to be absent for 8 days or more per year
- Almost 4 times as likely to have an accident in the workplace

Alcohol Concern and TUC in UK estimate
- 40 million working days lost per year due to alcohol abuse

76% of drug abusers are employed … 44% will sell to work colleagues

Leading to higher management costs
A reminder of the facts ....

- **Drink Driving**
  - 80mg alcohol/100mL of blood
  - 35µg of alcohol/100mL of breath
  - 9µg of alcohol/100mL of breath for Aircrew
  - Still can be convicted below these levels if impairment can be proven
  - For HGV’s, PSV’s, taxi’s and private hire, drink driving over 50mg/100mL is an aggravating factor
Drug Driving

- Driving whilst unfit through drugs (any drug not just illicit ones)
- New limits for certain drugs in saliva
  - Cannabis: 10ng/ml
  - Benzodiazepines: 10ng/mL
  - Cocaine: 30ng/mL
  - Amphetamine: 40ng/mL
  - Methamphetamine: 40ng/mL
  - Methadone: 50ng/mL
  - Opiate: 40ng/mL
- Still must prove impairment
- Urine and hair tests are not suitable
- Many current oral fluid tests don’t/can’t demonstrate they meet specification
What are companies trying to prevent?

- **Risk – the reduction of it!**
  - Risk of loss of productivity
  - Risk of increased absence
  - Risk of theft from company
  - Risk of harm to individual caused by Impairment
  - Risk of harm to others, including public caused by Impairment
  - Risk of harm to environment caused by Impairment
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Types of testing & matrices applied
Alcohol & Drugs

Testing Types
- Pre employment
- Random
- ‘Probable cause’
- Post incident
- As a condition of access for employees or contractors

‘Matrix’ Types
- Oral fluid
- Urine
- Hair
- Breath
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Matrices & Methods of Testing

- **Alcohol**
  - Breath Test (accepted worldwide)
    - Quick and easy
    - Tried and tested with approvals (*eg.* in the UK by the Home Office)

- **Drugs**
  - Oral Fluid (Saliva), Urine, Hair
  - Point of Collection (Oral, Urine)
  - Lab-Based (Oral, Urine, Hair)
Drugs
Window of Detection

= Duration of Detection

From Caplan & Goldberg, 2001, J. Anal. Tox 25, 396-399

Blood
Oral Fluid
Urine
Sweat
Hair & Nails

Minutes  Hours  Days  Weeks  Month  Years

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Steve Wilkinson
## Urine Testing

<table>
<thead>
<tr>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extensive scientific base of knowledge</td>
<td>Detection window of 2-3 days for most drugs</td>
</tr>
<tr>
<td>Mature technology</td>
<td>Longer detection for heavy marijuana users (30-45 days)</td>
</tr>
<tr>
<td>Regulated</td>
<td>No dose/concentration relationship</td>
</tr>
<tr>
<td>Reliable methodology</td>
<td>Adulteration common practice</td>
</tr>
<tr>
<td></td>
<td>Handling difficult, need special room, same sex observation</td>
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</tbody>
</table>
## Oral Fluid (Saliva) Testing

<table>
<thead>
<tr>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ Ready accessibility for collection</td>
<td>▪ Oral contamination</td>
</tr>
<tr>
<td>▪ Observed collection, less chance for adulteration</td>
<td>▪ Heterogeneous matrix (eg. Saliva with buffer solution)</td>
</tr>
<tr>
<td>▪ Detects parent drugs and metabolites</td>
<td></td>
</tr>
<tr>
<td>▪ Useful in the detection of recent drug use</td>
<td></td>
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<tr>
<td>▪ Results may be related to behavior/performance</td>
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## Hair Testing

<table>
<thead>
<tr>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ Longest detection window</td>
<td>▪ Only Lab-based</td>
</tr>
<tr>
<td>▪ Hardest to adulterate</td>
<td>▪ Does not detect recent drug use</td>
</tr>
<tr>
<td></td>
<td>▪ Expensive</td>
</tr>
<tr>
<td></td>
<td>▪ Can be invasive to some cultures</td>
</tr>
</tbody>
</table>
Which matrix for which test?

- **Pre Employment Screening**
  - This is a risk situation, why would you want to employ a drug user
    - **Hair best** - longest window hardest to hide drug use
    - **Urine is OK** - but user would only need to stay clean for a week to defeat so it’s an intelligence test
    - **Oral Fluid** - will only show use in last 24 to 48 hours so will only capture proper addicts

- **‘For Cause’**
  - Trying to show recent drug use, is causing strange behaviour.
    - **Oral fluid is best** - shows most recent drug use and can be used to help with diagnosis of impairment
    - **Urine is OK-ish** - but does not prove very recent drug use and cannot be used to suggest impairment
    - **Hair not suitable** - takes several days for drug use to show in hair
Which matrix for which test?

- **Post Incident**
  - Trying to show that recent drug use caused the incident
    - **Oral fluid is best** - shows most recent drug use and can be used to help with diagnosis of impairment
    - **Urine is OK** - does not prove very recent drug use and cannot be used to suggest impairment
    - **Hair is not suitable** - takes several days for drug use to show in hair

- **As Condition of Entry to Site**
  - Trying to show recent drug use
    - **Oral fluid is best** - shows most recent drug use and can be used to help with diagnosis of impairment
    - **Urine is OK** - but does not prove very recent drug use and cannot be used to suggest impairment. Time factor is also important
    - **Hair is unsuitable** – Lab-based so you can’t make a decision at time of entry
Which matrix for which test?

**Random**

- Depends on the nature of the risk the company is trying to prevent
  - Using machinery or making decisions that have immediate safety impact. Impairment is an issue, so oral fluid is best then urine, hair is pointless
  - If it is a risk of theft or corruption e.g. casino employee or prison officer then hair is best followed by urine and then oral fluid (window of detection)
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Typically available technology
Alcotest 6820

Carrying case
Instrument
Alcotest 6820

Batteries (2x)
Mouthpieces (3 pcs)
Typically Available Technology
Drug Testing

**DDT 5000**

**Benefits**
- Non invasive
- 1:1 for blood
- Hygienic, no handling of sample
- Sufficient sample indication
- Shows impairment/recent drug use
- Difficult to adulterate
- Remove operator error
- Temperature Controlled for max precision
- Data entry and management

**Considerations**
- New technology
- Short detection window

**Rapid Tox**

**Benefits**
- Mature technology
- Shows 2-3 days drug use
- If strips can be read in about 3 mins

**Considerations**
- Invasive
- Requires same sex monitoring
- Relatively easy to adulterate
- Cannabis detected up to 4 weeks after taken

**OralStat®**

**Benefits**
- None invasive
- 1:1 for blood
- Can be used to show impairment/recent drug use
- Difficult to adulterate

**Considerations**
- New technology
- Short detection window
Typically Available Technology
Hair Testing

Benefits
- 3 months drug use
- Easy sampling
- Not easily adulterated/tampered with
- Detects c5-10x more drug users than urine analysis

Considerations
- Lab-based only
- Relatively expensive
- Doesn’t show recent drug use
Dräger Interlock 7000
At a glance

The task to reliably protect the public, your staff, passengers and goods from the risks of drunk-driving, is relevant not only in public transportation, but also at the workplace and for private use. The new Dräger Interlock® 7000 ensures a safe start into road traffic after an uncomplicated breath alcohol measurement. If the device detects an alcohol value above the preset limit, it reliably prevents the engine from being started.

The Interlock 7000 offers reliable results and is very quickly ready for use. The device can be equipped with a camera and/or a GPRS module, according to the specific customer or legal requirements.
Dräger Interlock 7000

- Easy and hygienic use due to a replaceable mouthpiece
- Fast perceptibility of the results due to full-text messages, colored LEDs and color symbols
- Hardly identifiable as an alcohol interlock due to a modern, discreet design and mouthpiece on the rear
- Up to 500,000 events can be saved in the control unit
- Six additional ports for individual customer requirements
- The camera (optional) ensures superior image quality both day and night

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Dräger Interlock 7000
Deep dive

**Efficient functionality** due to fast warm-up time and a wide operating temperature range

**Flexible use** due to simple device installation in any vehicle type

**Ready when you are**
Particular features of the Interlock 7000 are the extremely short warm-up time and its quick readiness for use. In fact, if it is above freezing, the Interlock 7000 will be ready for use in less than 4 seconds. The operating temperature ranges from -45 °C (-49 °F) up to 85 °C (185 °F).

*Swiftly ready for use, precise measurements and reliable technology* ensure that the device is ready when you are.

**At your side**
The device is installed in any vehicle type by qualified personnel at our partner workshops. Once installed, the Interlock 7000 operates economically. In stand-by mode the power consumption is below 1 mA. Also while driving the device is very economic.

This ensures that the **operational readiness of any type of vehicle is not compromised** at any time.
Dräger Interlock 7000
Application scenarios

Challenge: Reliable alcohol measurement for more safety

A bus driver or a driver transporting hazardous goods is responsible for his own life and for the public safety. The Interlock 7000 helps to protect staff, passengers and goods reliably from the risks of drunk driving. Particular features of the device are its quick readiness for use and its low power consumption.

Solution: Dräger Interlock 7000

1. Passenger and goods transportation
2. Commercial vehicles at the workplace
3. Offender programs
Dräger Interlock 7000

Application scenarios

Challenge: Reliable alcohol measurement for more safety

Workers in mines, construction sites and other workplaces use heavy and large vehicles every day. An alcohol measuring device with vehicle immobilizer helps to systematically reduce alcohol-related accident risks at work and risks due to residual alcohol. The Interlock 7000 can be installed in any vehicle type e.g. fork lifts, mining vehicles, cranes, light trucks, and goods transportation.

Solution: Dräger Interlock 7000

- Offender programs
- Commercial vehicles at the workplace
- Passenger and goods transportation

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Any Questions?

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