Expert Panel on Drug Driving – approved minutes of 23 July 2012 meeting, 11:30 – 15:00

Venue: Department for Transport

Attendees:

Dr. Kim Wolff, Chair (King's College London)
Dr. Lily Read (Northampton Healthcare NHS Trust)
Professor Robert Forrest (Sheffield University)
Dr. Judith Morgan (DVLA)
Honorary Professor Eilish Gilvarry (Newcastle University)
Professor Atholl Johnston (Barts & London School of Medicine, Queen Mary University)
Dr. Roger Brimblecombe (ACMD representative)

Xxxxxx Xxxxxxx (Centre of Applied Science & Technology)
Xxxxx Xxxxxxx (DfT)
Xxxxxxx Xxxxxxxxxxx (DfT)

Apologies:

Professor David Osselton (Bournemouth University)
Dr. J. Colin Forfar (CHM representative)
Xxxxxxx Xxxxx (DfT)
Xxxxxxx Xxxxxx (DfT)

1. AOB

It was agreed that Prof David Taylor, Head of Pharmaceutical Sciences Clinical Academic Group, South London and Maudsley NHS Foundation Trust, would be invited to join the panel, instead of the pharmacist proposed at the last panel meeting. Dr Mark Prunty, Senior Medical Officer for drugs and alcohol policy in the Department of Health would join as an observer for future meetings.

2. Minutes from Meeting of 24 April 2012.

The draft minutes were agreed with factual amendments and addition of a source to section 7) on scientific evidence.

3. Policy update

Xxxxxxx Xxxxxxxxxxx provided a summary of the discussion about Clause 27 of the Crime and Courts Bill in the House of Lords at Committee Stage. In summary, the amendments put forward reflected concerns about the impact of the new legislation on the use of commonly prescribed medication, over-the-counter medication, e.g. analgesic medication, especially if levels were to be set at zero. The discussion also raised concerns that the law should not criminalise those who were not impaired at the time of driving but who may

have taken drugs some time before the roadside test (for example, young people with traces of cannabis detected in biological tests).

Xxxxxxxx Xxxxxxxxxxx explained that policy officials were considering making concessions in response to these points.

Action: Xxxxxxx Xxxxxxxxxx to circulate extract from Hansard of the Lords debate

It was noted that Xxxx Xxxxxx would brief some of the interested members of the House of Lords on 24 October.

In response to one of the recommendations of the North Report the panel considered a factual briefing note concerned with the DVLA drink driving High Risk Offender (HRO) scheme. Xxxxxx Xxxxxx pointed out that drug use was often identified when drivers did the medical assessment related to license reinstatement for those on the drink drive high risk offender scheme. The panel took note of this and it was agreed that further information would be sought from the DVLA.

No equivalent scheme exists for drug driving and the panel agreed to return to the issue at a later date.

Action: Xxxxxx Xxxxxx to establish numbers of drug users identified through the HRO medical assessment

The panel considered the DVLA's 'At a glance' guide for medical practitioners. This sets out standards of fitness to drive in relation to a range of physical and psychological conditions and their treatments, including drug and alcohol misuse and dependence. Xxxxxx Xxxxxx noted that the DVLA would get involved if it was clear that there was a medical issue related to a drink or drug driving offence, a one-off offence tended to be a criminal matter only.

It was noted that the DVLA have procedures in place for dealing with persistent or dependent drug use: depending on the type of drug being used, a car driving licence will be revoked or refused until a minimum 6 or 12 month period free of drug use has been achieved.

The panel noted some issues related to that guidance; including the difficulty of defining persistent drug use and multiple substance misuse, as well as the fact that some important psychoactive substances were not explicitly included. Xxxxxx Xxxxxxxx, reported that the 'At a glance' document would be discussed at their October meeting and any updates would be made available to the panel.

Xxxxxxxx Xxxxxxx noted that the Department of Health (England) and the devolved administrations, Drug Misuse and Dependence: UK Guidelines and Clinical Management. Department of Health (England), the Scottish Government, Welsh Assembly Government and Northern Ireland Executive, London, 2007 also known as the 'orange guidelines' also contained

information about drug driving, particularly in relation to substitute prescribing. It was agreed that the panel would consider the orange guidelines (section on driving) at a future meeting.

Action: Xxx Xxxxx to circulate section of orange guidelines relating to drug driving

Several members of the panel attended the London Toxicology Group meeting on Drug Driving on 13 July 2012. It was noted that Xxxxxx Xxxxx from the Centre for Applied Science and Technology (CAST), Home Office gave a presentation on 'Type-approval - drug testing devices' that did not seem aligned with the recommendations of the North Report. Xxxxxx Xxxxxxx clarified that work which is currently ongoing at CAST (testing of commercial devices) is for the type approval of preliminary drug screening devices for use in a police station in support of the existing legislation of driving while impaired by drink or drugs. The result of a preliminary drug test will allow a blood sample to be taken (by, for example, a custody nurse) without necessarily having to call on a Forensic Practitioner. It is still the blood sample which is the evidential sample.

The specification for the mobile screening devices that will support the new offence has not been released and will be based on the drugs included in the new offence.

Action: Xxxxxxx Xxxxxxxxxx to circulate the specification for the police station-based drug screening devices

4. International Drug driving issues

A table summarising drug driving policies in other European countries had been circulated and it was noted that this was a helpful overview of practices and laws related to drug driving. Within Europe, Belgium, Denmark, Germany, Poland, Finland and Norway have all set limits in blood, plasma, or serum for a number of specified drugs in their drug driving legislation, the Netherlands has these in proposed legislation. The status of the offence, testing regimes and associated penalties differ across countries. All of these countries have included THC, cocaine, morphine and amphetamine in their laws, plus a range of other drugs, including MDMA (ecstasy), specific benzodiazepines, further opioids etc. The table below shows data taken from the table, and other sources[1].

[1]Netherlands Advisory Committee on driving under the influence, Recommendation with respect to limits for drugs in the context of the proposed amendment to the Road Traffic Act 1994, 31 March 2010.

	drugs		
Country	**THC**	**cocaine**	**fluid …**
Belgium (2009 law)	1 nanogram (ng)/ml	25 nanogram (ng)/ml	plasma
Denmark[2]	1 microgram (ug)/kg	20 microgram (ug)/kg	blood
Germany	1 microgram (ug)/L	10 microgram (ug)/L	blood/ serum
Poland	3 microgram (ug)/L	5 microgram (ug)/L	blood
Finland	1 microgram (ug)/L	15 microgram (ug)/L	serum
Norway	0.004 micromole (μmol)/L	0.08 micromole (μmol)/L	blood
(Netherlands)	3 microgram (ug)/L	50 microgram (ug)/L	blood

5. Epidemiological evidence within the UK

Additional information from the Crime Survey of England and Wales had been produced but it was agreed that information on age groups of drug users as well as details of the questions asked about drug use in the context of driving should be shared, if available.

Action: Xxxxxxx Xxxxxx to provide additional Crime Survey of England and Wales information

The research report by Clockwork Research was found to contain little new information, and was deemed of limited use to the panel. The next research report would be expected to contain Odds Ratio tables.

Xxxxxx Xxxxxxx briefed the panel on the findings from a voluntary oral fluid drug screening exercise of those in custody for acquisitive crimes, under the Drug Intervention Programme (DIP). It was noted that of the 712 samples that underwent additional screening, THC was detected in 29% of samples; cocaine in 21%; opioids were detected in 16% of samples and amphetamines in 4% of samples. The panel requested further information including details about the substances being tested for, and the cut-off levels used.

Action: Xxxxxx Xxxxxxx to circulate findings from voluntary DIP testing; and police data from laboratory tests of drug drive evidential samples from last 3 years

6. Biological markers & setting levels in urine

Xxxx Xxxxx summarised papers on biological markers of controlled drugs and setting drug levels in urine. It was agreed that sweat should be added as an additional matrix for drug testing to the paper on biological markers.

[2] Fixed concentration limits in whole blood; offenders are sanctioned if the blood content of the specific drug exceeds that level + 50 %, https://pure.au.dk/portal/files/43934884/Poster_TIAFT_SanFrancisco_2011_pdf.pdf.

The panel discussed the issue of setting drug concentrations in urine and agreed that it would not be possible to set specific levels of drug concentrations in urine indicative of impairment. It was noted that there is universal agreement that urine only provides information about drug use over the last 24-60 hours and is not indicative of current drug activity in the body. Detection of drugs in urine is at best an indication of previous drug use and therefore it would not be possible to determine levels in urine for the purposes of the new offence.

The panel noted that this was not a problem that could be surmounted by technological advances (testing equipment) but that it was related to the way in which the body handles all drugs (biological factors).

It was also noted that sampling from blood is the most accurate way to determine the concentration of drugs currently active in the body and that for most drugs the pharmacokinetics of the drug are well described. It was acknowledged that drug concentrations could also be measured in oral fluid; however the relationship between oral fluid concentrations and the concentration in blood is less well described. There are also many factors that can influence the presence of drugs in oral fluid not least contamination of the buccal cavity.

It was conceded that, in future, when there is a greater body of scientific evidence about the pharmacokinetics of drugs in oral fluid, it would be possible to set levels of drug concentrations in oral fluid for evidential purposes. Currently, venepuncture and the collection of 2-5ml blood is required for evidential testing purposes, however, it is possible that technicological advances in the future may enable the use of smaller quantities of blood, such that blood spotting may be possible by using finger prick testing.

7. Scientific literature.

Cocaine:

A paper for discussion was provided by Xxxxxx Xxxxxxx on cocaine and driving. The scientific evidence related to cocaine use and actual impairment as well as cocaine use and risk of impairment. The panel agreed that it was important to consider the evidence of the odds of risk at specific drug concentrations.

A discussion was held about the short acting nature of cocaine in the body. It was noted that there was a reduced likelihood of the detection of cocaine in blood samples if the sample was collected 12-24 hours after drug consumption had taken place. A rationale for the measurement of the main metabolite of cocaine, benzoylecgonine (BZE) was discussed. The detection of BZE is used in clinical settings as evidence of the consumption of cocaine in the absence of the presence of cocaine, whereas the detection of cocaine in blood is agreed to be indicative of acute intoxication.

In drivers investigated on suspicion of impaired driving in Sweden[3], the mean blood concentration of cocaine was 0.095 mg/L (highest concentration 0.5mg/L) and the mean concentration of BZE was 1.01 mg/L (highest concentration 3.1 mg/L). In blood samples donated by impaired drivers in Germany[4] the mean concentration of cocaine was 0.836 mg/L, with the mean concentration of BZE being 0.669 mg/L. The panel considered that a threshold level of cocaine in blood might usefully fall somewhere between 0.8 and 1.0mg/L (or expressed in microgram/L: between 800 to 1000 microgram/L), reflecting a level associated with impaired driving.

If the panel decided on a zero tolerance-type approach it was agreed that an analytical cut-off concentration of cocaine and/or BZE in blood of 0.01 to 0.02 mg/L (or expressed in microgram/L: 10 to 20 microgram/L) would be readily achievable by most laboratories. This blood level cross references well with the prohibited level in Norway (0.08 micromole/L). No final decision was made regarding the recommendation in terms of cocaine and the drug driving offence.

A question was raised about the status of the metabolite BZE as it is not named in Schedule 2 of the Misuse of Drugs Act. Clarification would be sought on whether a level could be set for a metabolite that is not a controlled drug.

The panel noted the importance of the blood collection procedure when seeking to detect cocaine: it is necessary to collect blood samples in tubes containing a fluoride preservative, because in the absence of such a preservative there is a rapid conversion of cocaine to BZE in the sample after collection.

Amphetamine-type drugs:

A paper for discussion was provided by Xxxxx Xxxxxxxxxx concerning a short summary of research on amphetamine-type drugs. It was noted that the panel would consider a list of amphetamine-type drugs.

For reference the panel noted the drugs proposed by Norway. Specialist Advisory Group December 2010 (figures in brackets indicate the prohibited limit in micromole/litre):
Amphetamine (0.300); Methamphetamine (0.300); MDMA (0.250); Mephedrone (-).

The Norwegian paper also listed cut-off levels for Naphyrone; LSD25 (0.003); Dimethyltryptamine (-); Psilocybin (-) and; Methoxetamine.

[3] Jones, A. W., A. Holmgren, et al. (2008). "Concentrations of cocaine and its major metabolite benzoylecgonine in blood samples from apprehended drivers in Sweden." Forensic Science International 177(2-3): pp 133-139.
[4] Musshoff, F. and B. Madea (2010). "Cocaine and benzoylecgonine concentrations in fluorinated plasma samples of drivers under suspicion of driving under influence." Forensic Science International 200(1-3): pp 67-72.

It was agreed that relevant papers would continue to be sourced and submitted to the secretariat for distribution. It was also noted that two forthcoming ACMD reports on cocaine and on poly-drug use would be made available to the panel.

It was agreed after some discussion that the term amphetamine-type drugs was best describing the group of drugs in questions.

Action: Xxxxx Xxxxxxxxxxx to share new ACMD report when available; and to continue literature search for amphetamine-type drugs and driving

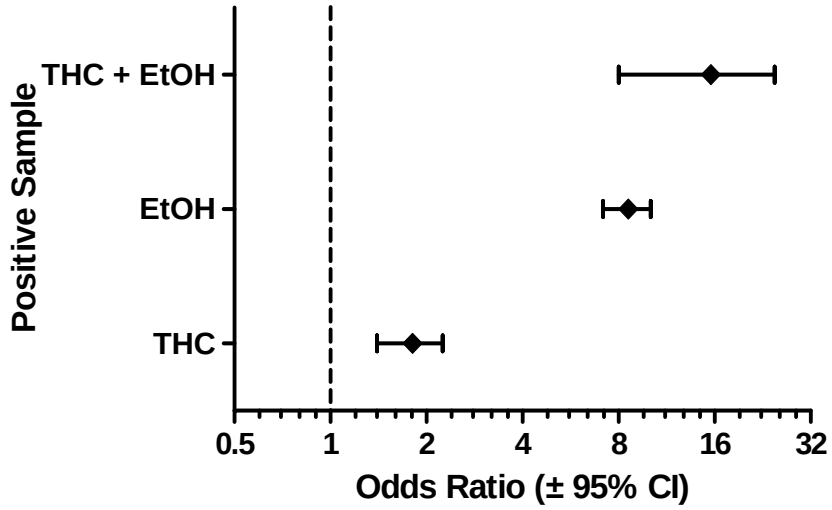
Cannabis:

A presentation was provided by Xxxxxx Xxxxxxx on cannabis (THC) and driving and the panel then considered evidence below from Laumon B *et al (BMJ 331, 1371, 2005).*

	N	Odds Ratio	Adjusted	Multivariate
			tetrahydrocannabinol	
Concentration of Δ^9 tetrahydrocannabinol (ng/ml):				
Negative	9013	1.00	1.00	1.00
<1	78	2.18 (1.22 to 3.89)	1.89 (1.03 to 3.47)	1.57 (0.84 to 2.95)
1 to 2	298	2.54 (1.86 to 3.48)	2.04 (1.47 to 2.84)	1.54 (1.09 to 2.18)
3 to 4	143	3.78 (2.24 to 6.37)	2.78 (1.61 to 4.78)	2.13 (1.22 to 3.73)
≥5	240	4.72 (3.04 to 7.33)	3.06 (1.93 to 4.84)	2.12 (1.32 to 3.38)
Present at any dose	759	3.17 (2.56 to 3.94)	2.37 (1.89 to 2.97)	1.78 (1.40 to 2.25)

Based on the odds of having an accident at a specific THC concentration the panel would recommend a threshold in blood of 5 microgram/L as an appropriate limit.

The panel also considered combined effects of alcohol and cannabis consumption in relation to driving. The scientific literature showed that the accident risk after drinking alcohol was doubled when the blood alcohol level was between 30 and 100 mg per 100ml blood. Evidence also showed that the odds of having an accident were significantly higher if alcohol and THC were combined (Laumon B *et al, 2005)*.



Indeed the risk of a driving accident was increased by 16 times when cannabis and alcohol were consumed concurrently by drivers.

It was noted that when plasma concentrations of cannabis were >3 mg/L and the blood alcohol content (BAC) was >50mg/100ml the odds of having a fatal road accident was increased 4-6 times. The panel members therefore agreed that a separate lower limit for THC and alcohol should be recommended where both drugs were present while driving. It was noted that DfT officials would have to consider and consult on how and whether this would be possible legally and operationally.

Xxxxxx Xxxxxxx raised his concerns about odds ratio data that was informed by cannabis concentrations from post mortem examinations of road traffic fatalities, as post mortem redistribution means that THC concentrations measured in the post mortem blood are not necessarily indicative of concentrations detected in drivers.

Action: Xxxxxx Xxxxxxxx to provide papers about post mortem redistribution.

8. Experts to invite

It was agreed that the following experts should be invited to give evidence to the panel, either by teleconference or through a separate meeting: Xxxxxxx Xxxxx, Xxxx Xxxxxxx, Xxxxx Xxxxxxxxx, Xxx Xxxxxxxxx and Xxxxx Xxxxxx.