

A Sero-behavioural survey of blood borne viruses among injectors of Image & Performance Enhancing Drugs (I PEDs).



Vivian Hope, Sara Croxford, Andrea Marongiu*,
John Parry, & Fortune Ncube
Health Protection Agency

Jim McVeigh & Michael Evans-Brown†, *Liverpool John Moores University*;
Josie Smith, *Public Health Wales*

*now at Imperial College London.

† now at EMCDDA.

Background – IPED injection



| IPED | Psychoactive drugs |
|--|---|
| Used to change physical appearance or improve performance / strength. | Used to effect mood or perception. |
| Usually come in liquid form prepared for injection or as a sealed vial of powder for reconstitution (e.g. growth hormone). | Usually come as powders or tablets which need to be prepared for injection. |
| Mostly bought through the internet or in gyms. | Acquired on the 'street'. |
| Injected intramuscularly or subcutaneously. | Injected intravenously (though some intramuscular or subcutaneous injection). |

Anabolic Steroids (AS)



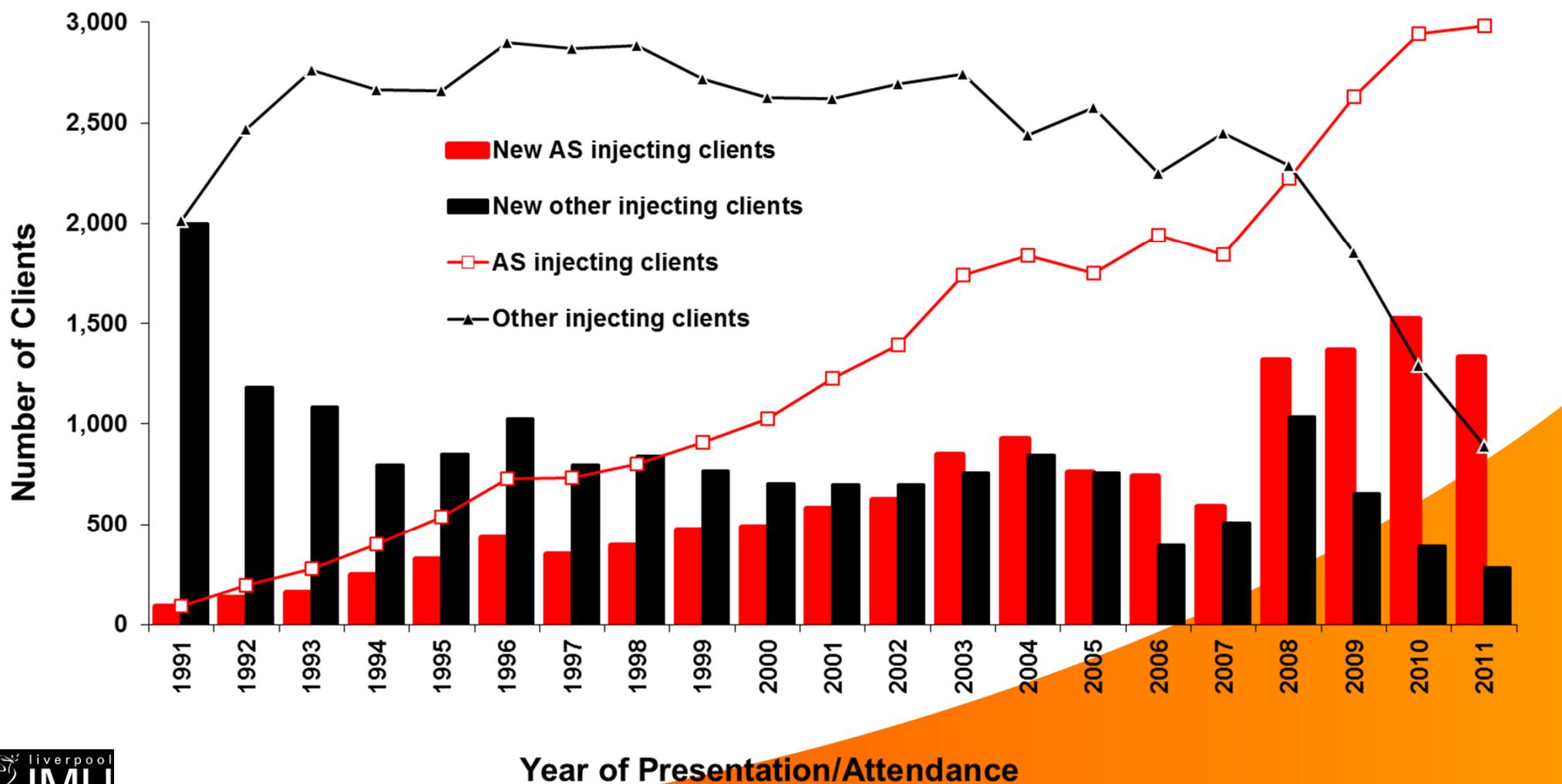
Anabolic steroids are the IPED with most known about their use. Probably the most commonly used type of IPED.

| Drug (2011/12) | Last year | Ever |
|--------------------------|------------------|-------------|
| Anabolic steroids | 70,000 | 228,000 |
| Heroin | 47,000 | 255,000 |

'All' & 'new' clients attending agency based SEPs in Cheshire & Merseyside (1991-2011).



Data provided by Centre for Public Health at Liverpool JMU.



Direct & indirect sharing by anabolic steroids users (UK studies)



| | Korkia & Stimson (1993) | Lenehan et al., (1996) | Pates & Barry (1996) | Burton (1996) | Crampin et al., (1998) | Bolding et al., (1999) | Midgely et al., (2000) | Grace et al., (2001) | Bolding et al., (2002) |
|---|-------------------------|------------------------|----------------------|---------------|------------------------|------------------------|------------------------|----------------------|------------------------|
| “Ever” shared | 5.7% (5/88) | 0.3% (1/386) | 1.7% (3/176) | 16% | 6% (8/134) | 0% | 2.1% (1/47) | 20% | 0 |
| Shared last month | N/A | N/A | N/A | N/A | ≤1% (1/134) | N/A | N/A | N/A | N/A |
| “Ever” shared multi-dose vial | N/A | N/A | N/A | 59% | N/A | 9.9% (8/81) | 23% (10/47) | N/A | 2.4% (2/85) |
| “Ever” reuse injecting equipment | N/A | N/A | N/A | 37% | N/A | 7.4% (6/81) | 4.2% (2/47) | N/A | 8.2% (7/85) |
| Reporting both behaviours | N/A | N/A | N/A | N/A | N/A | 3.7% (3/81) | 4.2% (2/47) | N/A | 1.2% (1/85) |

BBVs among IPED injectors



Only one published study from the UK - Crampin *et al.* (1998).

Opportunistic sample of IPED injectors captured in a large survey recruiting annual samples of PWID through specialist services. Survey collected Oral Fluid samples.

There were 149 participations by current steroids/HCG injectors 1991-1996 (1.4% of all participations by current injectors).

Three (2.0%, 2.7% adjusting for test sensitivity) had anti-HBc.

None had anti-HIV. Samples not tested for anti-HCV.

Aware of only one other study of BBV prevalence in IPED injectors. This purposively recruited a convenience sample through services in Australia (n=63, 1999/2000) - anti-HCV 9.5% (95% CI: 3.6–20); anti-HBc 12% (95% CI: 4.5–24).

Background – UAM Survey of PWID



Voluntary Unlinked Anonymous Monitoring (UAM) among PWID started in England & Wales in 1990 (+ Northern Ireland since 2002).

UAM recruits PWID through around 60 collaborating agencies providing needle & syringe programmes (NSPs) and/or opiate substitution therapy.

Participants provide a biological sample and self-complete a brief questionnaire.

Survey main Aims are to:

- measure the prevalence of HIV and viral hepatitis in PWID.
- monitor changes in related risk & protective behaviours.

However, survey is aimed at injectors of 'psychoactive' drugs, such as, opiates and stimulants.

Background – IPED injectors and the UAM Survey



IPED injectors very rarely take-part in the UAM Survey because either participation is not offered to them or those that are offered participation decline it – as UAM Survey not targeted at this group.

A modified UAM Survey questionnaire was developed with Liverpool John Moores University – it was focused on the use of IPED, rather than psychoactive drugs.

UAM Survey of IPED injectors ran from the Autumn of 2010 to the Spring of 2011. Oral fluid samples were collected.

Findings presented here are preliminary & unpublished.

The sample



Overall, 410 individuals took part in the study through 19 services – 17 in seven regions of England, two in Wales.

There were 5 women and 10 participants who did not report any injecting. These 15 have been excluded from the analysis here. Those with gender missing (20) have been assumed to be men.

The following is preliminary analysis of data from these 395 individual's – i.e. 'male' IPED injectors.

Sample characteristics



| | | Proportion having done so | n |
|-------------------------|---------------------------|---------------------------|-----|
| Age, years | Under 25 years | 27% | 106 |
| | 25 to 34 years | 34% | 134 |
| | 35 years and over | 27% | 107 |
| | <i>Median (IQR), Mean</i> | <i>28 (13), 30.6</i> | |
| | Not Reported | 12% | 48 |
| Had ever been in prison | | 16% | 63 |

Among the male injectors of psychoactive drugs taking part in the UAM Survey in 2011:-
The median age was **35 years (IQR 11)**, mean was 35.33 years.
78% had ever been in prison.

IPED Use



| | | Proportion having done so | n |
|-------------------------------|---------------------|---------------------------|-----|
| Years since first used a IPED | Less than 5 years | 36% | 141 |
| | 5 years or more | 32% | 128 |
| | <i>Median (IQR)</i> | <i>4 (8)</i> | |
| | Not reported | 32% | 126 |

Among the male injectors of psychoactive drugs taking part in the UAM Survey in 2011:-
Median years injecting was 12 years (IQR 12), mean was 12.8 years.

IPED: Oral use



| | Proportion having done so | n |
|---|---------------------------|-----|
| Anabolic Steroids | 57% | 226 |
| Anti-oestrogens | 23% | 92 |
| Clenbuterol | 15% | 60 |
| Ephedrine | 20% | 78 |
| Thyroid Hormones | 9% | 37 |
| PDE5i (Viagra / Cialis) | 6.6% | 26 |
| Other PIED (inc. Diuretics, DNP and Pro/designer) | 12% | 46 |

IPED: Injected



| | Proportion having done so | n |
|---|---------------------------|-----|
| Anabolic Steroids | 86% | 340 |
| Growth Hormone | 32% | 128 |
| HCG | 16% | 62 |
| Insulin | 5.6% | 22 |
| Melanotan | 8.6% | 34 |
| Other PIED (inc. EPO, IGF-1 and Nubain) | 5.1% | 20 |

Use of other illicit drugs



| | Proportion having done so | n |
|--|---------------------------|-----|
| Ever injected illicit drug other than an IPED | 4.8% | 19 |
| Snorted cocaine in the last year | 46% | 181 |
| Snorted, drunk or swallowed amphetamine in the last year | 12% | 47 |

Injecting practice



| | | Proportion having done so | n |
|---|--------------|---------------------------|-----------|
| Who usually injected you in last year? | Someone else | 17% | 68 |
| | Myself | 74% | 294 |
| | Not reported | 8.4% | 33 |
| Intramuscular (IM) injection in the last year | | 88% | 346 |
| Subcutaneous (SC) injection in the last year | | 39% | 154 |
| Ever shared needle, syringe or vial | | 8.9% | 35 |

Sexual behaviours



| | | Proportion having done so | n |
|--|---------------------|---------------------------|-----|
| Number of sexual partners last year | One | 38% | 152 |
| | Two or more* | 47% | 187 |
| | Not reported/No sex | 14% | 56 |
| Gender of sexual partners last year | Male partner(s) | 3.3% | 13 |
| | No male partners | 82% | 323 |
| | Not reported/No sex | 15% | 59 |
| Always condom for anal/vaginal sex, or no sex, last year | | 20% | 78 |

* 80 (20%) had 5 or more female partners, including 33 reporting 10 or more partners

Among the male injectors of psychoactive drugs taking part in the UAM Survey in 2011:-
34% had one partner in last year, 36% more than one partner, and 29% had not had sex.

Health Service Usage



| | Proportion having done so | n |
|---|---------------------------|-----|
| Had ever used a NSP | 75% | 298 |
| Had seen a GP in the last year about their health | 45% | 178 |
| Had got advice at an A&E/Walk-in in the last year | 16% | 64 |
| Had taken/used medication prescribed by a doctor in last year | 28% | 111 |
| Had got advice from a GUM clinic in the last year | 17% | 68 |

Markers of infection: HIV and bacterial infections



| | Prevalence | n |
|--|-------------------------------|-----|
| Anti-HIV +ve | 1.5% (95%CI 0.56% to 3.3%) | 6 |
| Ever had redness at an injection site? | 43% | 168 |
| Ever had an abscess/sore/open wound at injection site? | 7% | 27 |

Among the male injectors of psychoactive drugs taking part in the UAM Survey in 2011:-
1.4% (95% CI 0.88% to 2.2%) anti-HIV.

26% reported abscess/sore/open wound at injection site during preceding year.



Markers of infection: Hepatitis B and C

Note: Oral Fluid sample test sensitivity for anti-HBc is ~75% and anti-HCV 92%.

| | Prevalence, adjusted for test sensitivity | Proportion | n |
|-------------------|---|------------|----|
| Anti-HCV positive | 5.5% (95%CI 3.5% to 8.3%) | 5.1% | 20 |
| Anti-HBc positive | 8.8% (95%CI 6.3% to 12%) | 6.6% | 26 |

Among the male injectors of psychoactive drugs taking part in the UAM Survey in 2011:-
45% (95%CI 43% to 48%) had anti-HCV.
16% (95%CI 14% to 18%) had anti-HBc.



Factors associated with having anti-HBc & anti-HCV

Preliminary Multivariable analyses suggest that:-

- for HIV and hepatitis B that **sexual behaviour** may be associated infection.
- for hepatitis C the **injection of psychoactive drugs**, and also **sexual behaviour**, may be associated infection.

However, as around one in 11 reported ever sharing injecting equipment, **IPED injecting probably has a role in exposure.**

Uptake of testing and Vaccination



| | Proportion having done so | n |
|--|---------------------------|-----|
| Had taken up the vaccine against hepatitis B | 23% | 90 |
| Had ever had a blood test for hepatitis C | 22% | 85 |
| Had ever had a blood test for HIV | 31% | 122 |

Among the male injectors of psychoactive drugs taking part in the UAM Survey in 2011:-
78% had taken up the vaccine against hepatitis B.
84% had ever a blood test for hepatitis C.
77% had ever a blood test for HIV.

Summary



Findings need to be generalised with caution, but they indicate that among injectors of IPEDs:

- 1 in 18 has been exposed to hepatitis C & 1 in 11 to hepatitis B. Levels of these two infection are much lower than among injectors of psychoactive drugs.
- 1 in 65 have HIV, similar to among injectors of psychoactive drugs

Just under a quarter have received one or more doses of the hepatitis B vaccine.

Just over a fifth have ever been test for hepatitis C, almost one-third for HIV.

IPED injectors sexual behaviours and their use of psychoactive drugs are probably putting them at risk of BBV infection. They are also at risk of infection from their IPED injection practices.