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Addictions

UK Policy
the Role of Heroin Substitution

Presented in
Tehran, Iran

Presented by
Dr Cyrus Abbasian
BSc. MBBS MRCPsych MSc.
Consultant Adult/Addiction Psychiatrist
Honorary Senior Lecturer, College Tutor

2014

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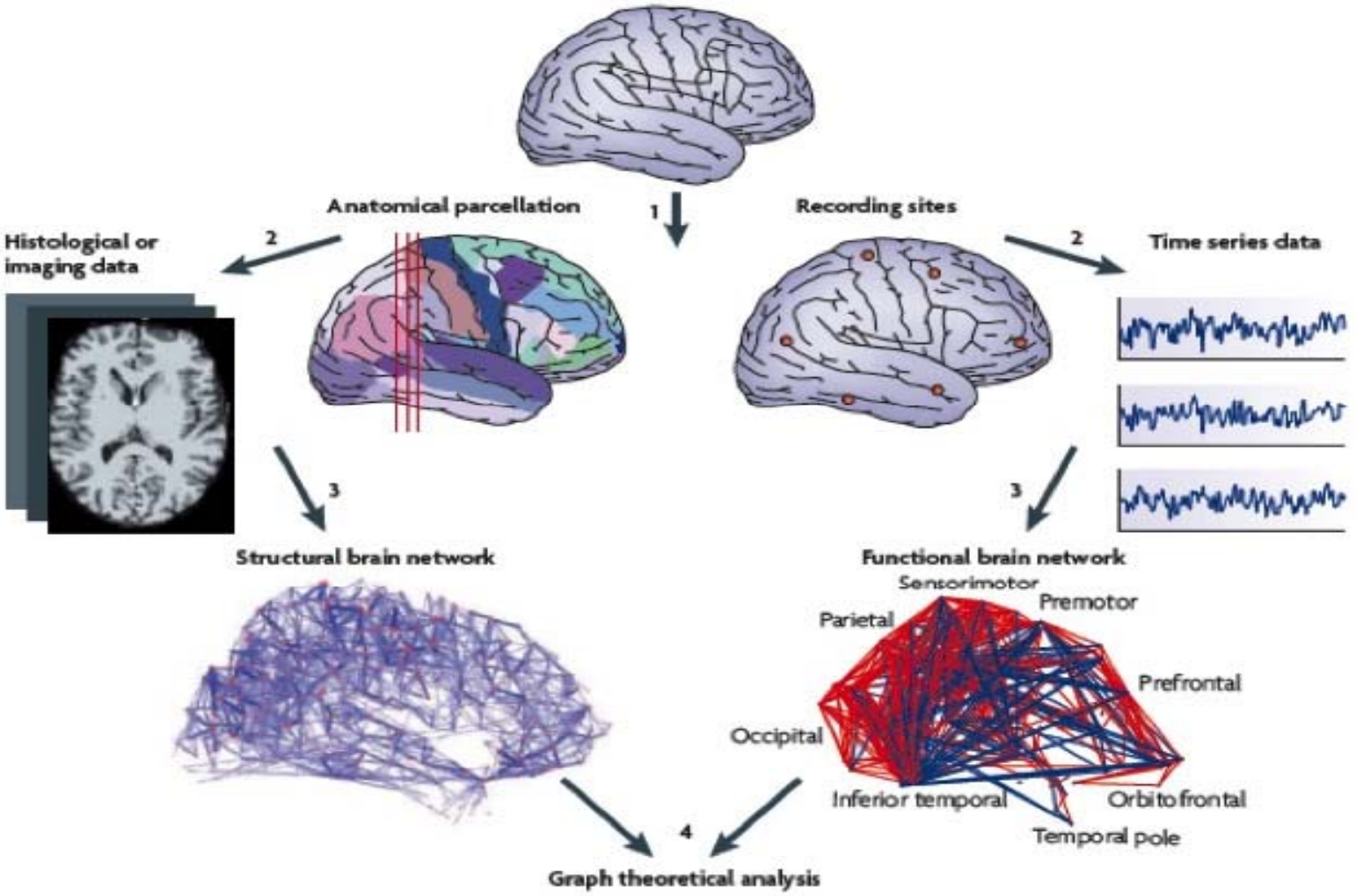
Salience Dysregulation Syndrome?


Anatomical parcellation
1
Recording sites
2
Histological or imaging data
2
Time series data
3
3
Structural brain network
Functional brain network
Sensorimotor
Premotor
Parietal
Prefrontal
Occipital
Inferior temporal
Orbitofrontal
Temporal pole
4
Graph theoretical analysis

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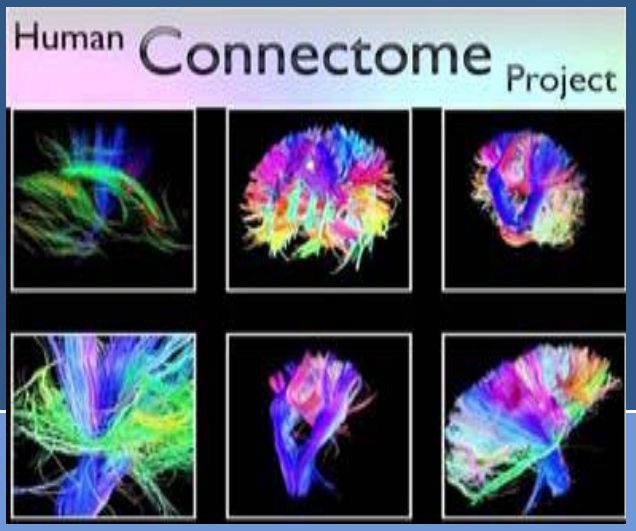
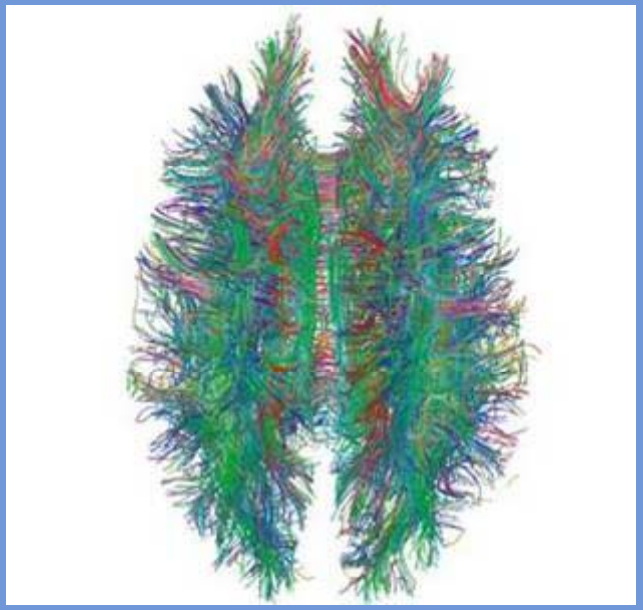


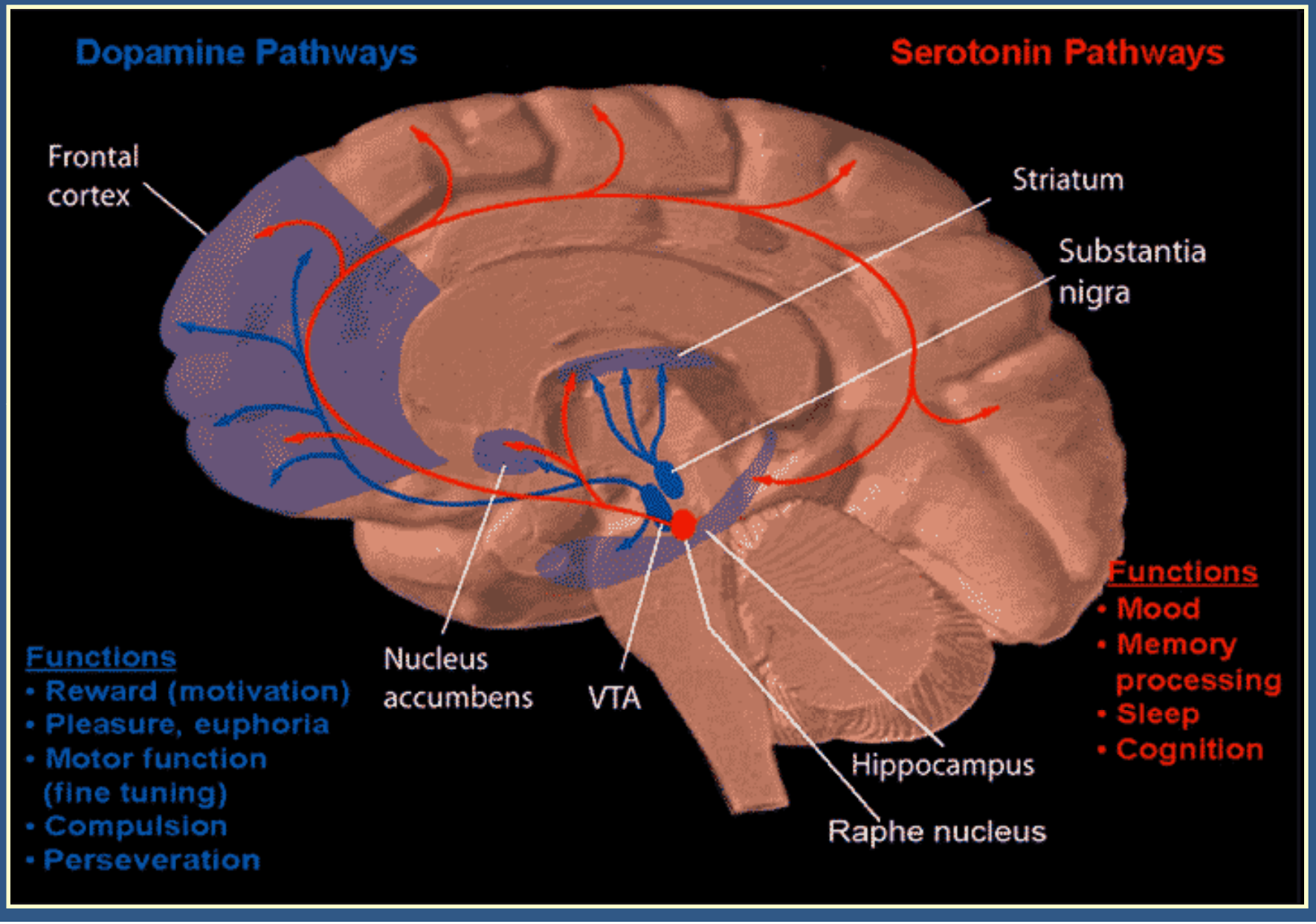
Tractography



WHAT IS ADDICTION?

- Historical context – *is addiction a habit???*
- Legal Context – being under influence of drugs cannot be used as a defence in court, while mental illness can (e.g. *diminished responsibility* in *homicide*)
- **Mental Health Act** 1983 (and 2007) excludes addiction – can forcibly detain and treat mental illness *NOT* for addictions

- New evidence; Addiction being seen as a '***disease of the brain'*** (Nora Volkow, NIDA)


Dopamine Pathways
Serotonin Pathways
Frontal cortex
Striatum
Substantia nigra
Nucleus accumbens
VTA
Hippocampus
Raphe nucleus
Functions
• Reward (motivation)
• Pleasure, euphoria
• Motor function (fine tuning)
• Compulsion
• Perseveration
Functions
• Mood
• Memory processing
• Sleep
• Cognition

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Mesolimbic system trumps all!

- Rats will press to receive injections of cocaine directly into areas of the reward pathway, such as the **Nucleus Accumbens** and the **VTA**.

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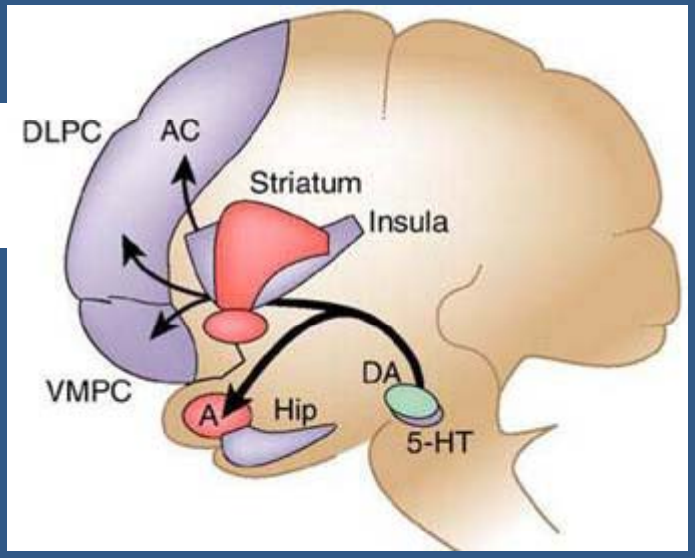
Biology of Addiction



E.g.

- **↓↓D2 Rec.**
  - ↓↓ social status
  - ↑↑ drugs use
  - Vicious circle!
  - Partial recovery upon cessation

(creative people had lower than expected thalamus D2 Rs - as schizophrenics (Fredrik Ullen))

- Substance use disorders: **50% Heritability**
  - E.g. **Type II Alcohol Use**, high inheritance: male, younger, anti-social
- Personality types (impulsive, adventure seeking, dissocial…)
- Mental health issues
- **Needs** environmental factors

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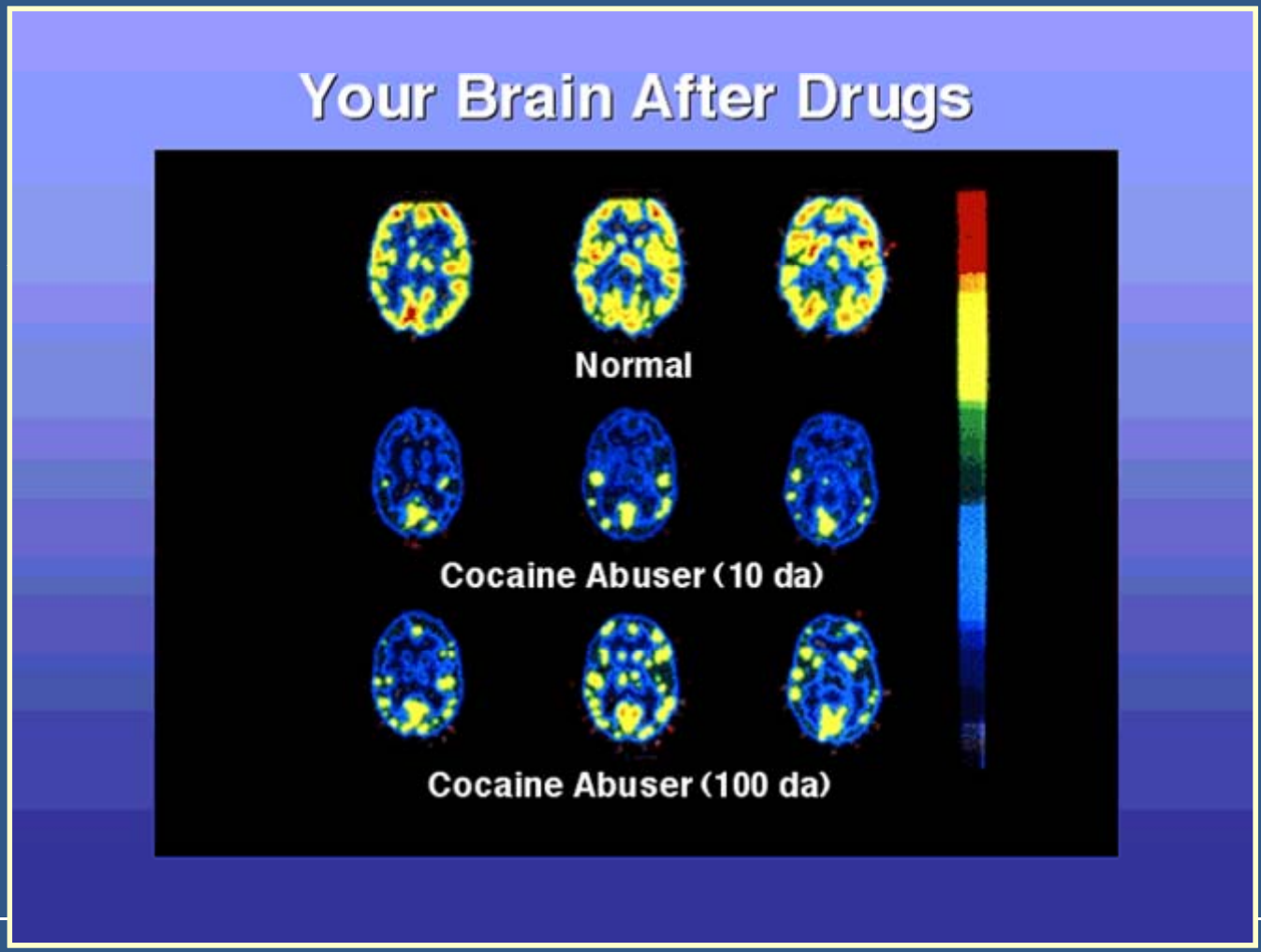
DECREASED D2 RECEPTORS

Cocaine Addict's Brain Activity (N*ora Volkow, NIDA)*



Psychosocial Effects of Alcohol

- Directly responsible for 15 000 deaths annually (Jones *et al*, 2008)
- **50%** violence in England is alcohol related; **20%** of violence occurs in/around pubs/clubs; **80%** A&E assault patients been drinking (**Mark Bellis** 2012 BMJ 3/11/12)
- Domestics issues
  - Abuse/Violence(1/3 is alcohol-related)
  - Divorce
  - Loss of job, custody of children
- NHS resources
  - >1 million hospital admissions per year (2009-10)
  - Cost >£2 billion (NAO 2009)

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ALCOHOL and Teens!

- Abuse
- School
- Accidents
- Crime

Emphasis in NICE 2011 Guidelines

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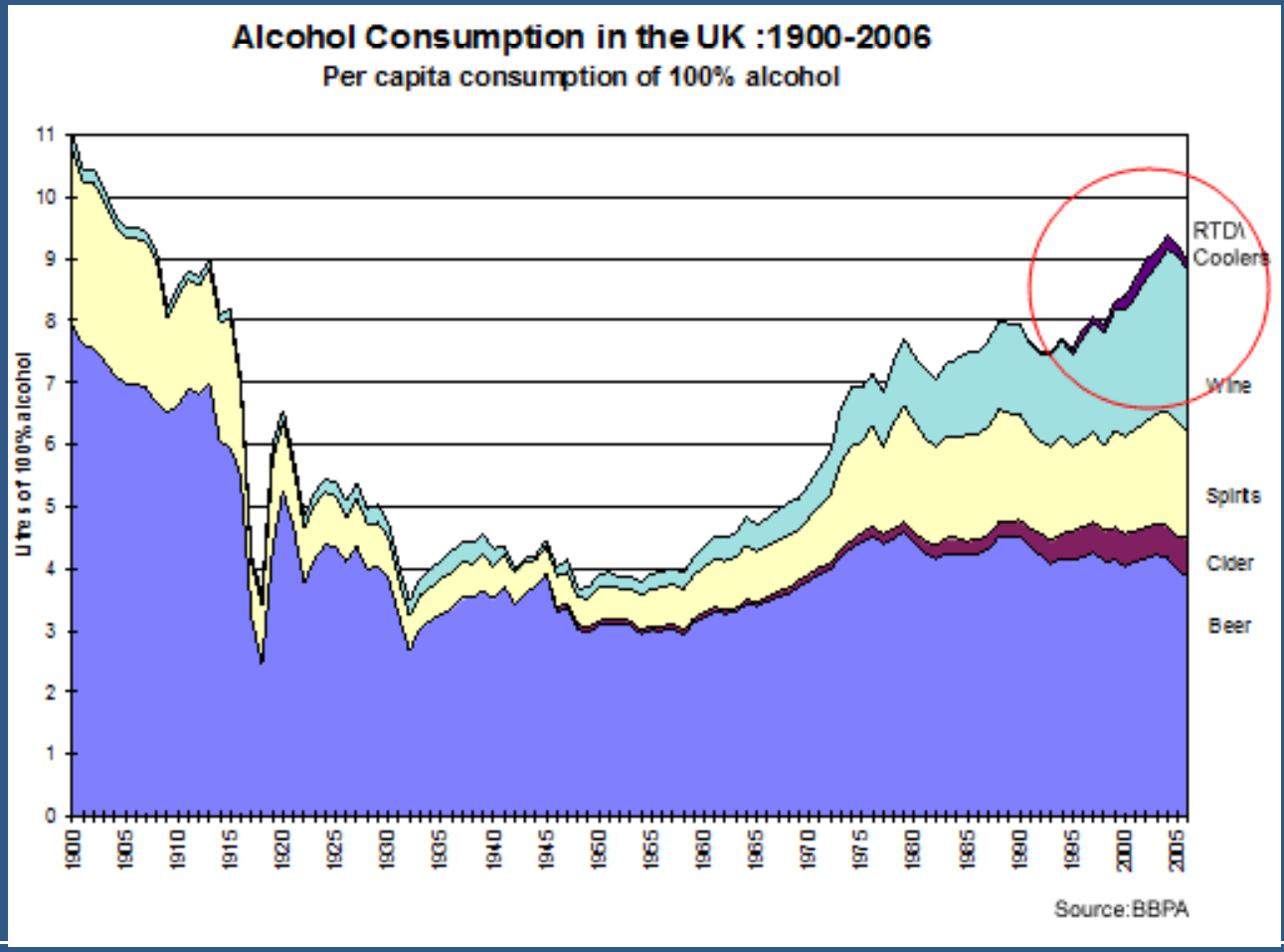
Medical profession are particularly at risk!

Be careful of the Alcohol Industry!



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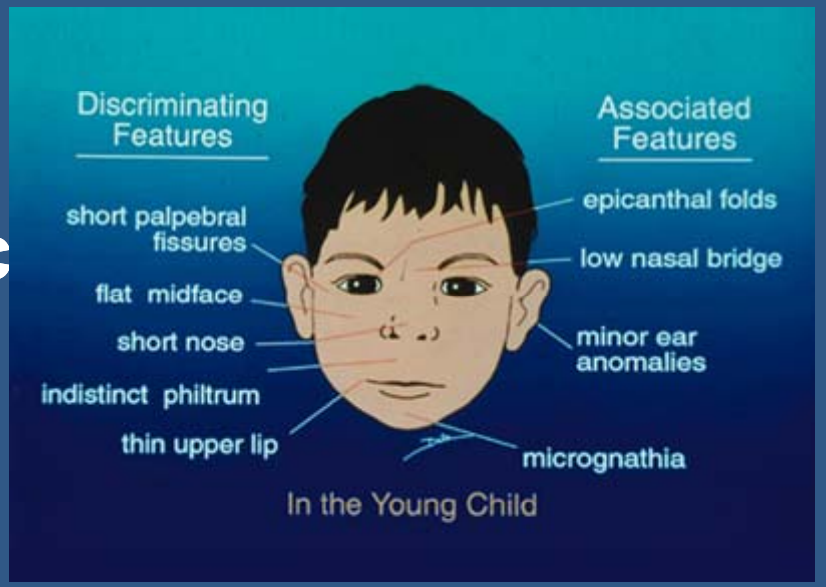
Effects on Pregnanc



- Effects on the mother
- Teratogenic
  - Nutritional Deficiency
  - **Foetal Alcohol Syndrome**

- Child protection issues
- how much women can drink in pregnancy? better safe than sorry! **"DON'T DRINK"**
  - Be careful of the Alcohol Industry!

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NICE Alcohol – June 2010

- **1 in 4 adults** drink too much damaging/risking their health.
  - (in UK 6.8% are Harmful drinkers)
- Cost to NHS > £2bn per year
- 1.2 million violent incidents a year

- Make alcohol "less affordable"
- *Minimum Price* per unit of 40p (45p Gilmore), per year:
  - 1,000 fewer premature deaths;
  - 40,000 fewer hospital admissions; and
  - 10,000 fewer violent crimes and criminal damage.
- Reducing number of outlets selling alcohol
- A complete ban on advertising?

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Cannabis!

- 1/3 UK adults tried
- 2 million regular smokers
- **THC/CBD** balance
  - THC, addictive & psychoactive
  - CBD sedates & relaxes
- **Skunk** – very potent (up to 20% THC) with contaminants

Legalization/Decriminalization Debate

- **Class B** again!
- Police raid 7000 **hydroponic** cultivation plants in 2010 – via heat emissions/electrify use…
- Growing equipment and seeds can be legally purchased (>£200), but growing cannabis is illegal??
- *"Hobby Growers"* – as harm reduction?
- in California can be Rx by doctors: 'patients' have card and medicate for 'illnesses'!!! Has become big business…

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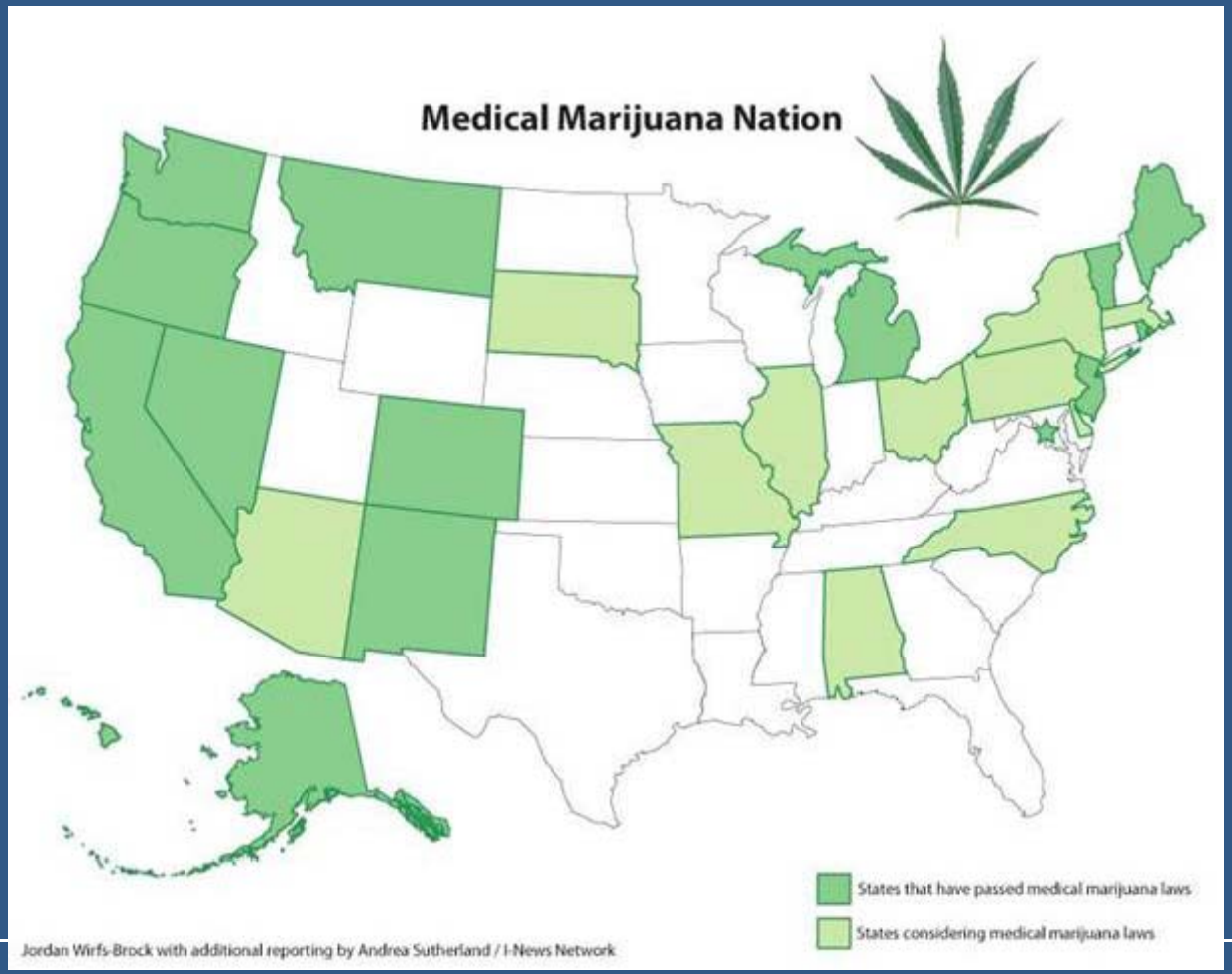

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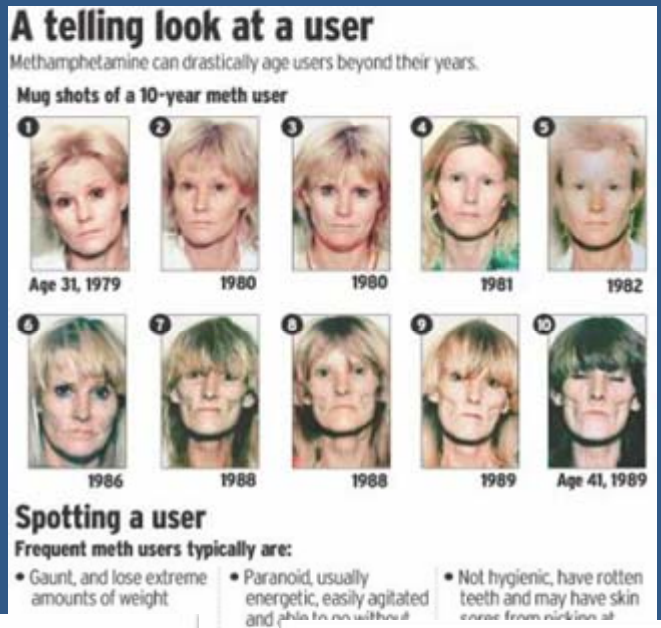
‘Party’ Drugs

- MDMA
- Amphetamines
- Cocaine
- Hallucinogens

BIG FOUR

- Ketamine
- Mephedrone
- GHB/GBL
- Crystal Meth.



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Opiate OD **deaths**
more than doubled from 1993 to 2000
(Joseph Rowntree Foundation, 2003)

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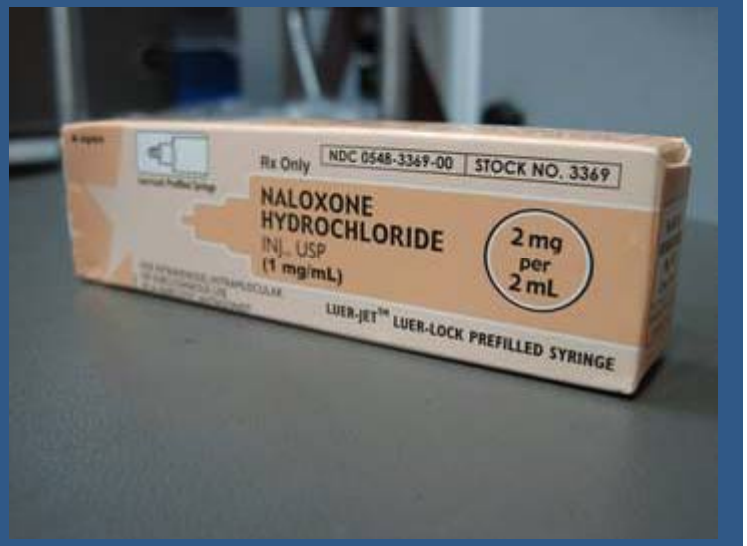


NHS
National Treatment Agency for Substance Misuse

Small pilot study of carers being given Naloxone: prevents death from OD

MOST DANGEROUS DRUGS

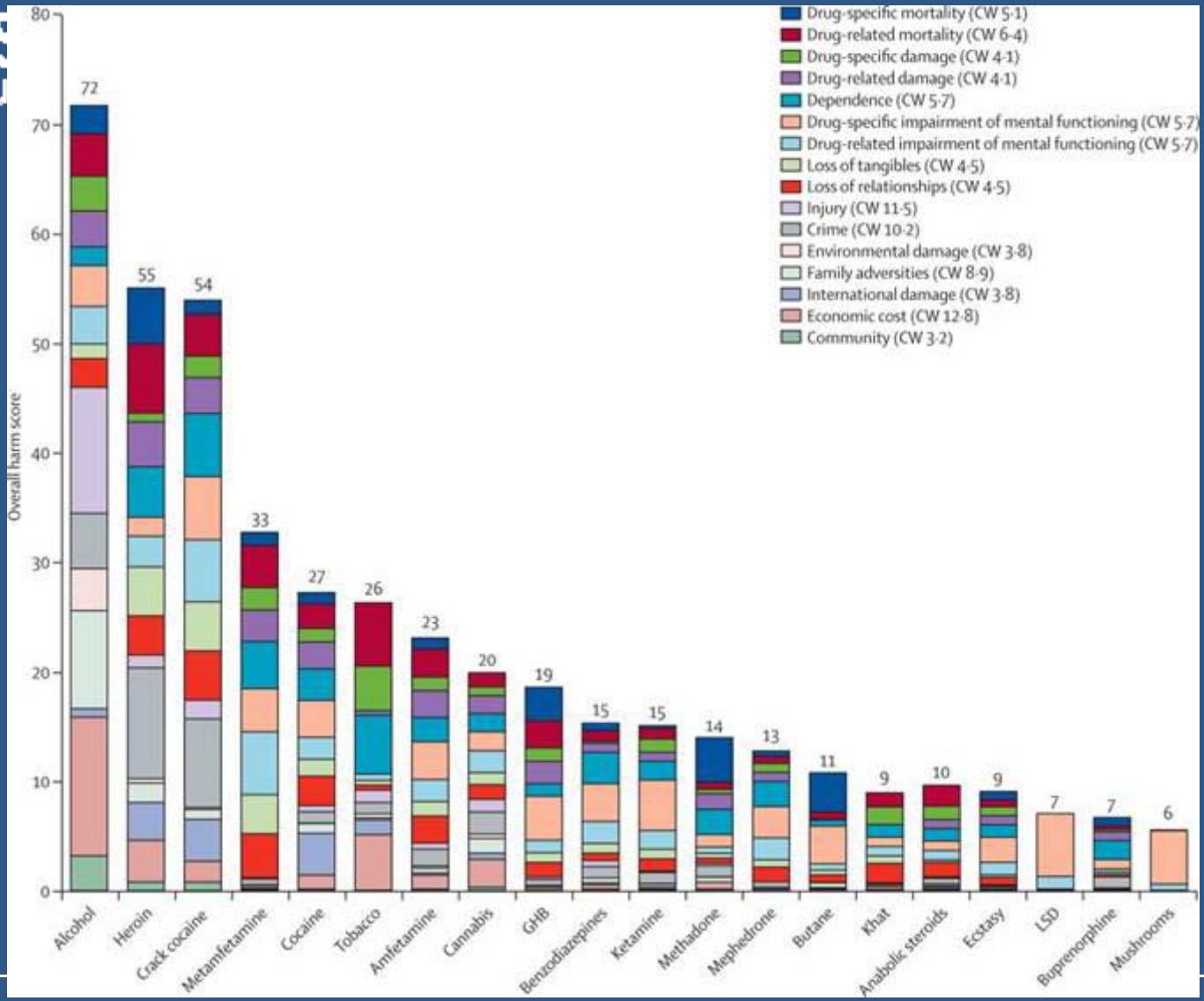
Factors determining harm :

- ***physical harm to user***
- ***drug's potential for addiction***
- ***impact on society of drug use***

1. **Heroin**
2. Cocaine
3. Barbiturates
4. Street methadone
5. Alcohol
6. Ketamine
7. Benzodiazepines
8. Amphetamine
9. Tobacco
10. Buprenorphine
11. Cannabis
12. Solvents
13. 4-MTA
14. LSD
15. Methylphenidate
16. Anabolic steroids
17. GHB
18. Ecstasy
19. Alkyl nitrates
20. Khat

"Drug Harms in the UK: a Multicriteria Decision Analysis."

Nutt et al *The Lancet* (2010)



PROBLEM IN UK (Home Office stats)

- 2/3 of crimes drug-related
- 3/4 of crack/heroin users commit crime

- **56% sex worked before starting 'hard' drugs**
- **80%** problem drug users are Sex Workers

=> High suspicion for female Heroin/Crack addicts

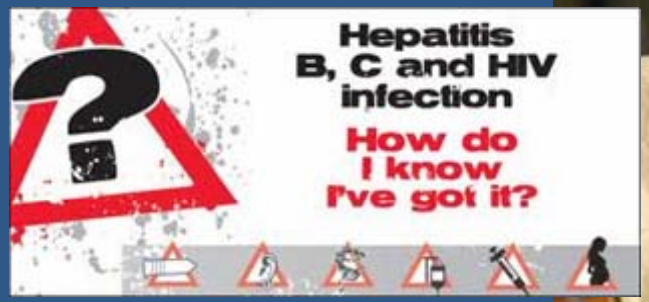
being Sex Workers

Khat and 'Substituted' Cathinone

- structure-based ban of entire compound class; e.g similar to mephedrone *(Advisory Council on the Misuse of Drugs, April 2010)*
- US Style "Analogue act"
  - analogues of existing controlled substances banned?
- 28 compounds specifically named

Harm Minimisation

Abstinence vs **Harm Minimisation** (e.g. clean needles, safe sex, substitute prescribing)



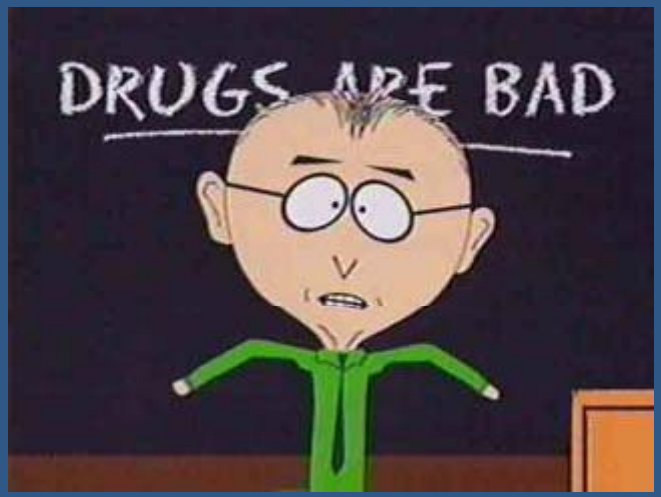
The NTA also issued the following advice on reducing the risk of overdose:

- Stop using heroin if you can
- Look at getting drug treatment
- Test your heroin before using your usual amount
- Avoid injecting if you can
- Avoid using other drugs or alcohol with heroin
- Don't use alone
- Get overdose training

OD

Brief Interventions (alcohol)

- 10-15 minute ‘counselling’ session with a health care worker (GP)
- Focus on: raising awareness, safe limits, current knowledge on long term use.
  - Low cost
  - Modest time investment
  - Minimal professional involvement
- *25-35% reduction in drinking at 6-12 months after 5-10 minutes’ advice*



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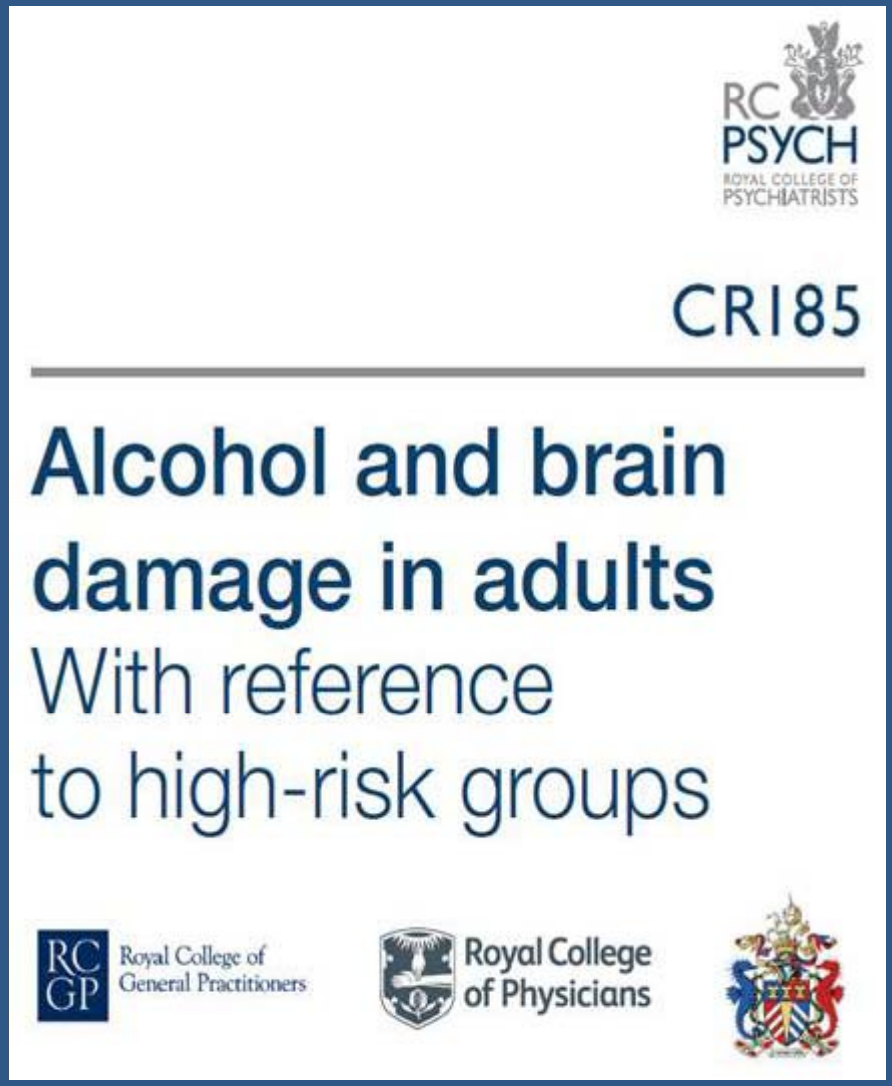
Alcohol-related brain damage (ARBD)

- 0.5-1.5% of the general adult population
- 75% of people with ARBD improve with appropriate care
- appropriate care reduces acute hospital bed-day usage by 85%
- **Rx: Pabrinex, Acamprosate, Nalterxone, Disulfiram, Baclofen**



- **Substitution**
  - Methadone (>60mg)
  - Buprenorphine
  - Diamorphine
- **Psychosocial**
  - **Harm Reduction**
  - Day Centres
  - Group Therapy
  - CBT
  - Residential Rehabilitation

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Opioids

- Substitution:
  - **Methadone** - opioid agonist
  - **Buprenorphine** (Subutex) sublingual - partial opioid agonist *(combined with naloxone = Suboxone)*
    - stabilise on oral dose
    - Detoxification vs. Maintenance ?
- Non-opioid detoxification:
  - **Lofexidine** – α_2 adrenergic agonists
- Post-detox:
  - **naltrexone** (psychosoial package)

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Self-Help: AA & NA

- Based on the ***"Twelve Steps"***
- No records kept of meetings
- Support and camaraderie
- New activities and friends
- Al-Anon & Al-Ateen
  - for partners & children of alcoholics

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Rehabilitation

- Residential or Day Centres

- Psycho-education
- Psychotherapy:
  - individual 1:1
  - group work
- Most residential rehabs are Twelve Step (Minnesota Model)
- Few inpatient units now (£) but some complex patients require them

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Social Interventions

- Housing
- Employment advice
- Education/training
- Government policy

Making addicts a valuable member of society; employed and paying taxes!

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Elephant in the room…

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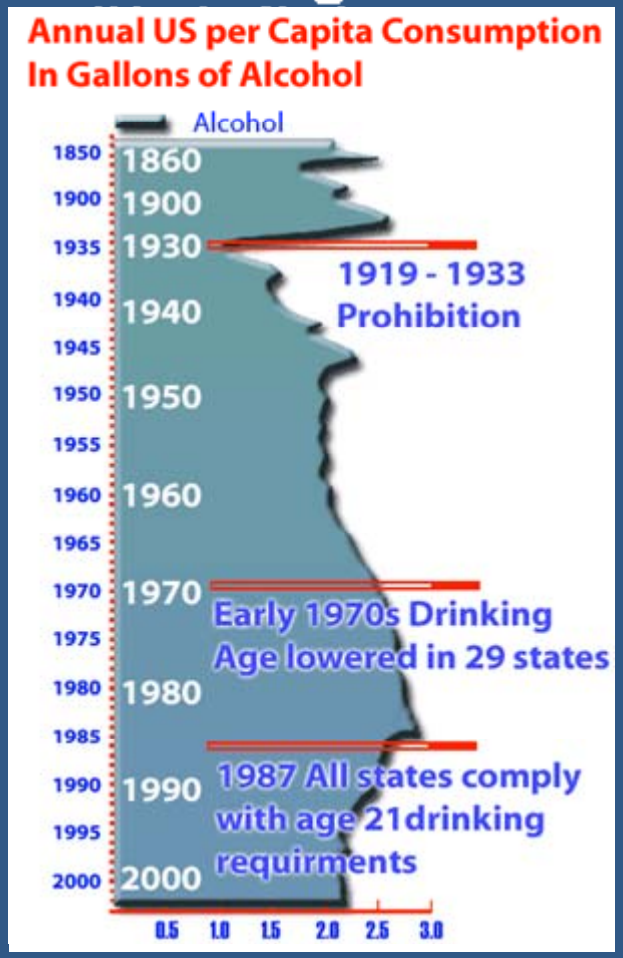
Annual US per Capita Consumption
In Gallons of Alcohol
Alcohol
1850
1860
1900
1900
1935
1930
1940
1940
1945
1950
1950
1955
1960
1960
1965
1970
1970
1975
1980
1980
1985
1990
1990
1995
2000
2000
1919 - 1933
Prohibition
Early 1970s Drinking
Age lowered in 29 states
1987 All states comply
with age 21drinking
requirments
0.5
1.0
1.5
2.0
2.5
3.0


Murder in America
Homicides per 100,000 population
1900 - 1997 (FBI Uniform Crime Reports)
10
9
8
7
6
5
4
3
2
1
0
Alcohol prohibition
1919 - 1933
"War on Drugs"
1969 - present
1900
1915
1930
1945
1960
1975
1990

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1920-1933

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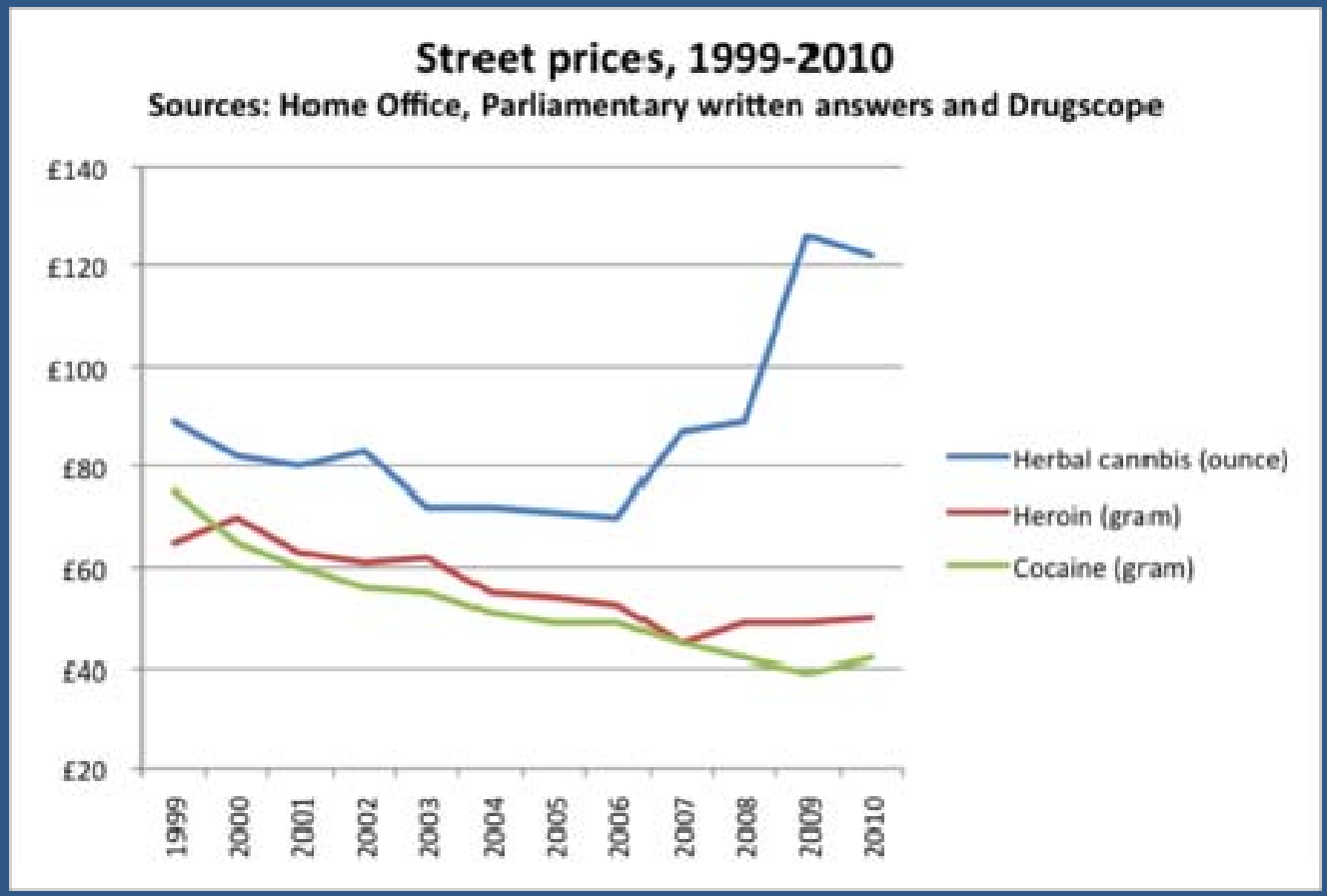

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“meow meow”

(BCS, 2011)

- since **mephedrone** possession was criminalised:
  - 300,000 16-24 yo (4.4%) used in 2010
  - Ranked joint second popular drug, with cocaine! (2011)
  - Price remained stable (initially then doubled by 2012. ALSO Less pure and less use, with more IVI (short half-life)

“People don't take anything because it's legal, they take it because they like it."

Government Policy

- **Liberalisation in past 10 years!**
  - Increase in number of outlets
  - Decrease in the real price
  - Increase in strength
  - Powerful Alcohol Lobby (where tobacco was 30 years ago! History repeating itself)
    - Be careful of Alcohol Industry!
    - Alcohol is 'No Ordinary Commodity'

NOW SLOWLY REVERSING....

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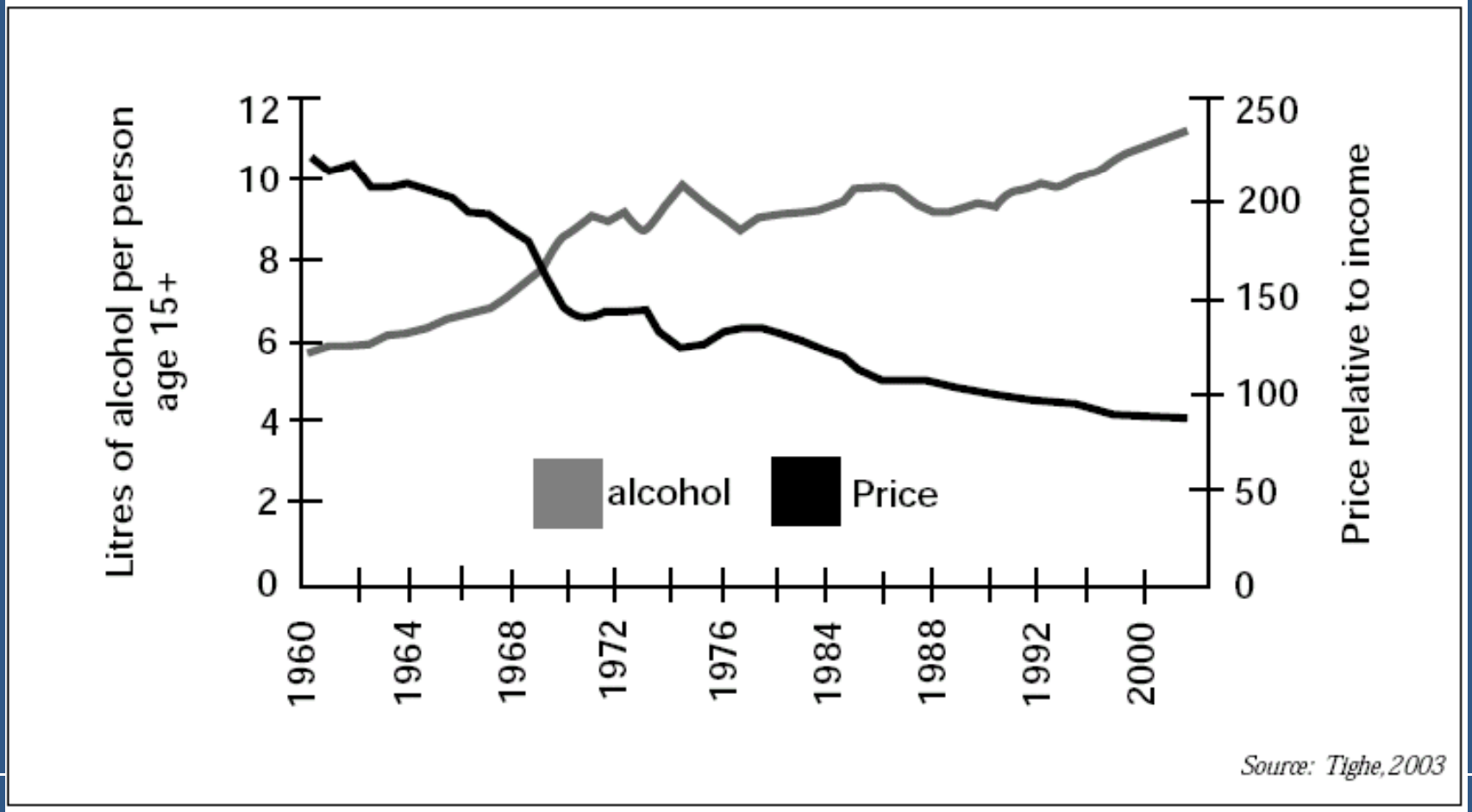
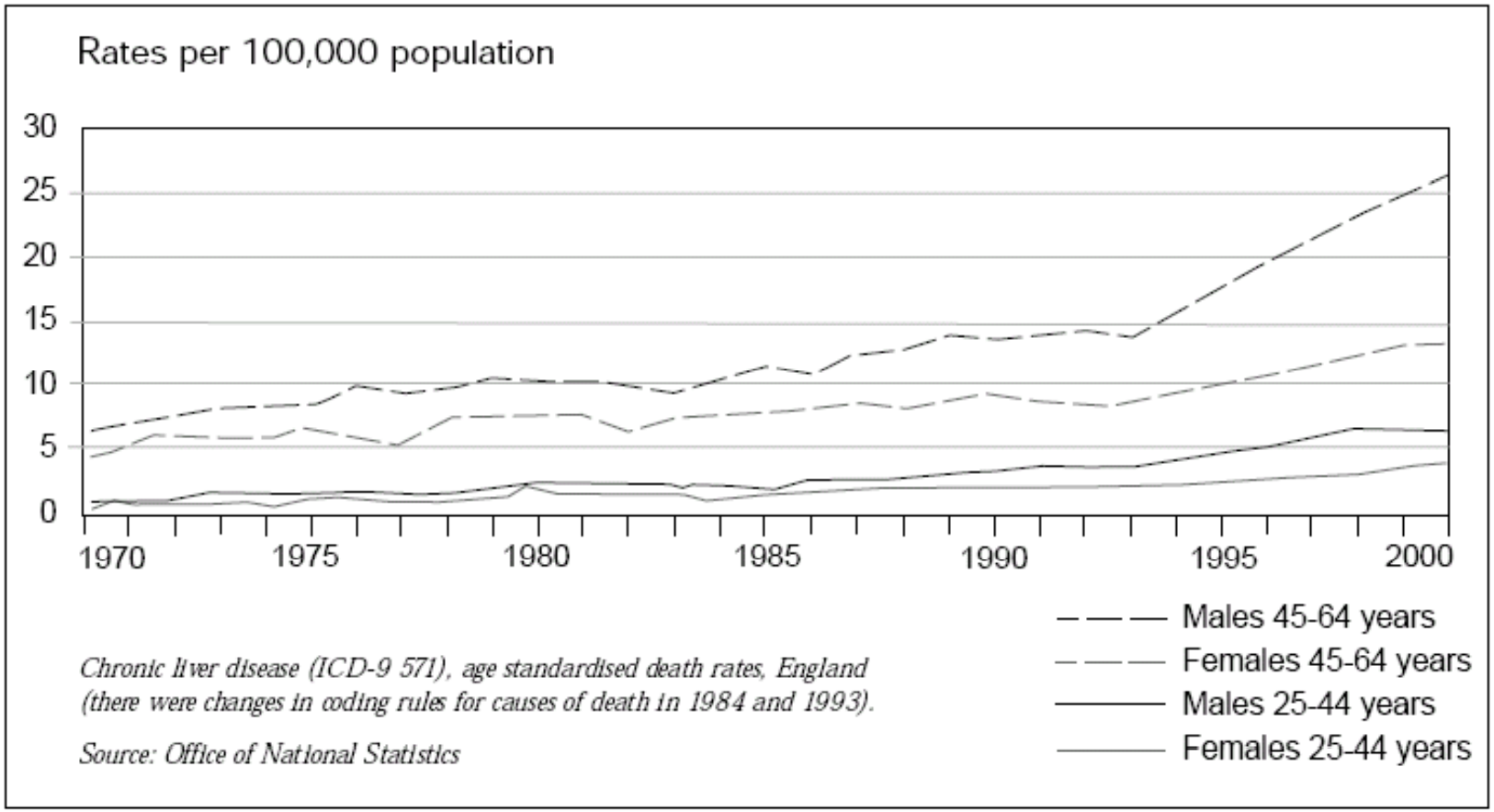
Figure 5 - *Consumption of alcohol in the UK (per person aged 15+) relative to its price: 1960-2002*



Source: Tighe, 2003

Deaths from chronic liver disease

Figure 2 - *Rising trend in deaths from chronic liver disease: 1970-2000*



Chronic liver disease (ICD-9 571), age standardised death rates, England (there were changes in coding rules for causes of death in 1984 and 1993).

Source: Office of National Statistics

Calling Time (2004), Ac Med Sci

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Costa Del Sol!

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28 November 2012 Last updated at 10:34

Minimum price plan to end cheap alcohol sales

COMMENTS (1815)

By Nick Triggle
Health correspondent, BBC News

Ministers are proposing a minimum price of 45p a unit for the sale of alcohol in England and Wales as part of a drive to tackle problem drinking.

The Home Office has launched a 10-week consultation on the plan, arguing it will help reduce the levels of ill-health and crime related to alcohol.

It is also considering banning multi-buy promotions, such as two-for-the-price-of-one.

The 45p proposal is 5p higher than the figure suggested by ministers in March.

It comes after pressure has been mounting on the government to follow Scotland's lead, where 50p has been proposed.

Guy Mason from Morrisons believes minimum unit prices for alcohol would punish responsible customers

Related Stories

Why are we so unhealthy?

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45p per Unit

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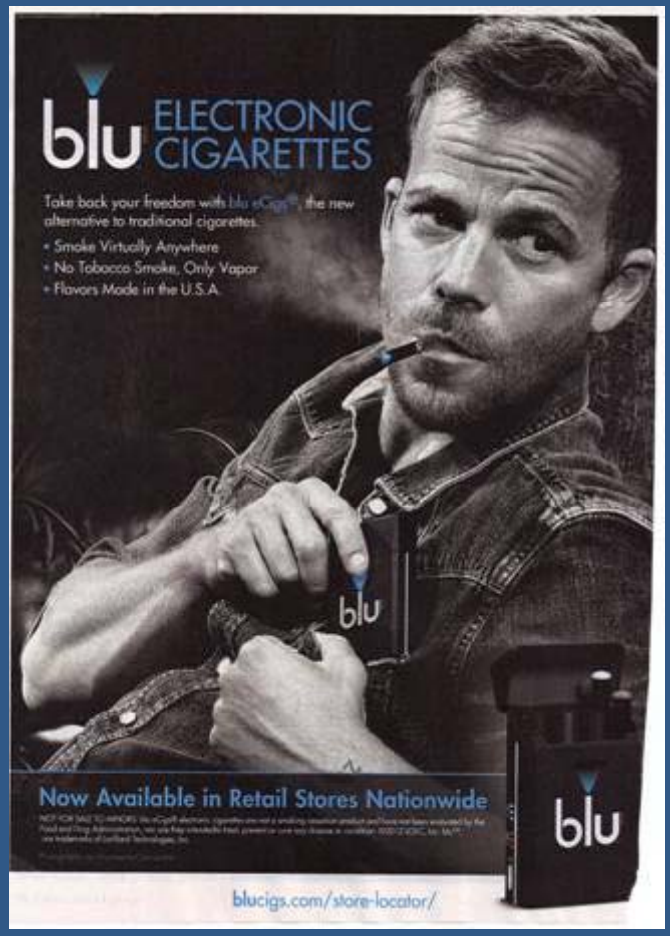

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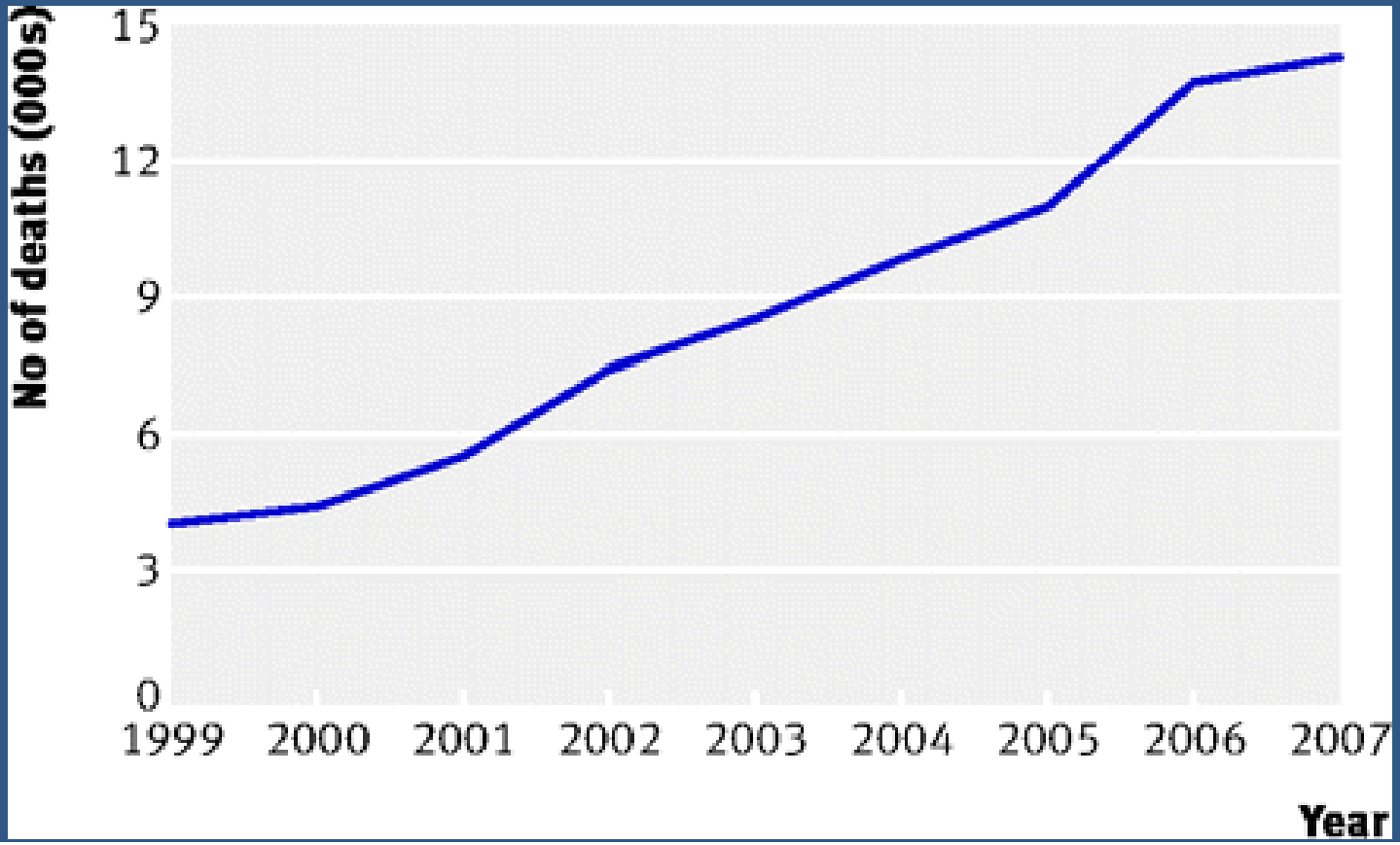
US Opioid Analgesics Deaths



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Be careful what you prescribe!

- *"mother's little helper"*
- *"safer"* than Barbiturates

- 1.5 million **Benzodiazepine Addicts** in E&W 2011 and prescriptions rising
- *"Pain in excess of W/D from heroin"*
- *Hidden* patients, as don't commit crime
- Can purchase online from overseas…
- Very few NHS services
- Patients may sue…

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Stigma!

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RIOTT

(Randomised Injectable Opioid Treatment Trial)

National Addiction Centre

Institute of Psychiatry, Kings College London &
South London and Maudsley NHS Trust

Institute of Psychiatry at The Maudsley

KING'S College LONDON University of London

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Background

- Heroin addiction is usually **long-term**
- Long-term treatment 'works' well for most people:
  - Detoxification (Subutex)
  - Rehabilitation programs
  - Methadone Maintenance Treatment (MMT)
- **A proportion of patients (5-15%) do not make major improvements even though they are in treatment**

Those who do not ‘get better’

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- The ‘problem’
  - Ongoing heroin (+other drug) use most days
  - Ongoing health problems (e.g. HIV, hepatitis, overdoses)
  - Ongoing crime (90% of crime committed by 10% patients)
  - Ongoing social & personal costs
- Management options:
  - Discharge from treatment - usually things get worse
  - Prison – expensive & rarely a long-term solution
  - Provide **‘better treatments’**

Injectable Opioids in UK
turn of century

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- Diminishing treatment modality in UK
- Increasing European evidence base (clinic systems)
- Increasing emphasis on drug treatment to reduce crime (Home Office)
- Calls from Government to increase Heroin prescribing
  - Home Office Drugs Policy 2002: prescribe for 'all in need'
  - Parliamentary Select Committee 2002
- NTA Guidance Report May 2003
  - consensus expert committee

Research Evidence Summary

"No definitive conclusions about the effectiveness of Heroin prescription…. Heroin use in clinical practice is still a matter of research in most countries"

Cochrane Review 2003

- Heroin treatment is 'feasible' & at least **as effective** than 'standard' oral methadone

‘Van Der Brink’ Holland (2003)

Medical prescription of heroin
to treatment resistant heroin addicts

- 549 heroin addicts, 12 months
- Heroin plus Methadone: significantly more effective than treatment with Methadone alone in the trial of **inhalable** Heroin
- Supervised **co-prescription** of Heroin is: ‘feasible, more effective, and probably as safe as methadone alone in reducing: many physical, mental, and social problems of treatment resistant heroin addicts.’
- Discontinuation of the co-prescribed Heroin resulted in a **rapid deterioration in 82%** (94/115**)** of those who responded to the co-prescribed heroin.

‘Rehm’ Swiss (2005)

Mortality in heroin-assisted treatment in Switzerland 1994-2000

- Death rate of patients in Heroin-assisted treatment was 1% per year.
- The standardized mortality ratio for the entire observation period: **9.7** (95% C.I. 7.3-12.8)
- ‘Mortality in Heroin-assisted treatment was **low** compared to the mortality rate of Swiss opioid users 1990s’

‘Haasen’ German 2007

Heroin-assisted treatment for opioid dependence

- 1015 heroin addicts
- Injectable heroin (*n*=515) or oral Methadone (*n*=500) for 12 months
- **Retention** was higher in Heroin (67.2%) than in the Methadone group (40.0%)
- ‘Assisted treatment is more effective for people with opioid dependence who **continue** intravenous heroin while on methadone maintenance or who are **not enrolled** in treatment’

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naomi
NORTH AMERICAN OPIATE MEDICATION INITIATIVE

NOAMI Canada 2008

- 251 participants, 12-15 month: injection opioids or oral methadone.
- Heroin Assisted Treatments and Methadone Maintenance Treatments achieved high **retention rates**: 88% and 54% respectively
- **Both** effective: reduce crime and improve health
- "Our data show remarkable **retention rates** and significant improvements in **illicit** heroin use, **illegal** activity and **health** for participants receiving injection assisted therapy, **as well as** those assigned to optimized methadone maintenance"

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Evidence *'gaps'* for RIOTT

- No study has:
  - examined whether prescribing of injectable opioids is **more effective** than attempts at enhancing the conditions of oral maintenance treatment, in those patients performing 'poorly' in current treatment
  - compared **safety & efficacy** of injectable Methadone & injectable Heroin
  - used objective measures for the 'primary' outcome of illicit heroin use

National Treatment Agency for Substance Misuse (NTA) 2007

- Small Selection of Population
- Having Corrected Sub-optimal Dosing (?)
- Second line
- 'Eight' NTA principles:
  - Package of Care (psycho-social)
  - Optimised MMT failed
  - Stepped care
  - Long-term

NTA Guidance: Key points

- IOP **integrated** with other treatments
- Patients who do not respond to standard oral maintenance drug treatment should be offered other options in a **series of steps**:
  - **optimised** oral Methadone, then
  - **injectable** Methadone or Heroin maintenance treatment
- Must have capacity for **supervised** consumption. Injectable drugs greater risks than oral drugs and require greater levels of supervision

"A new treatment modality"

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RIOTT Research Question

- How should we respond to individuals who continue to regularly inject heroin despite being in methadone treatment?
  - Optimise their oral Methadone treatment

Or

  - Consider treatment with **injectable** Methadone or Heroin

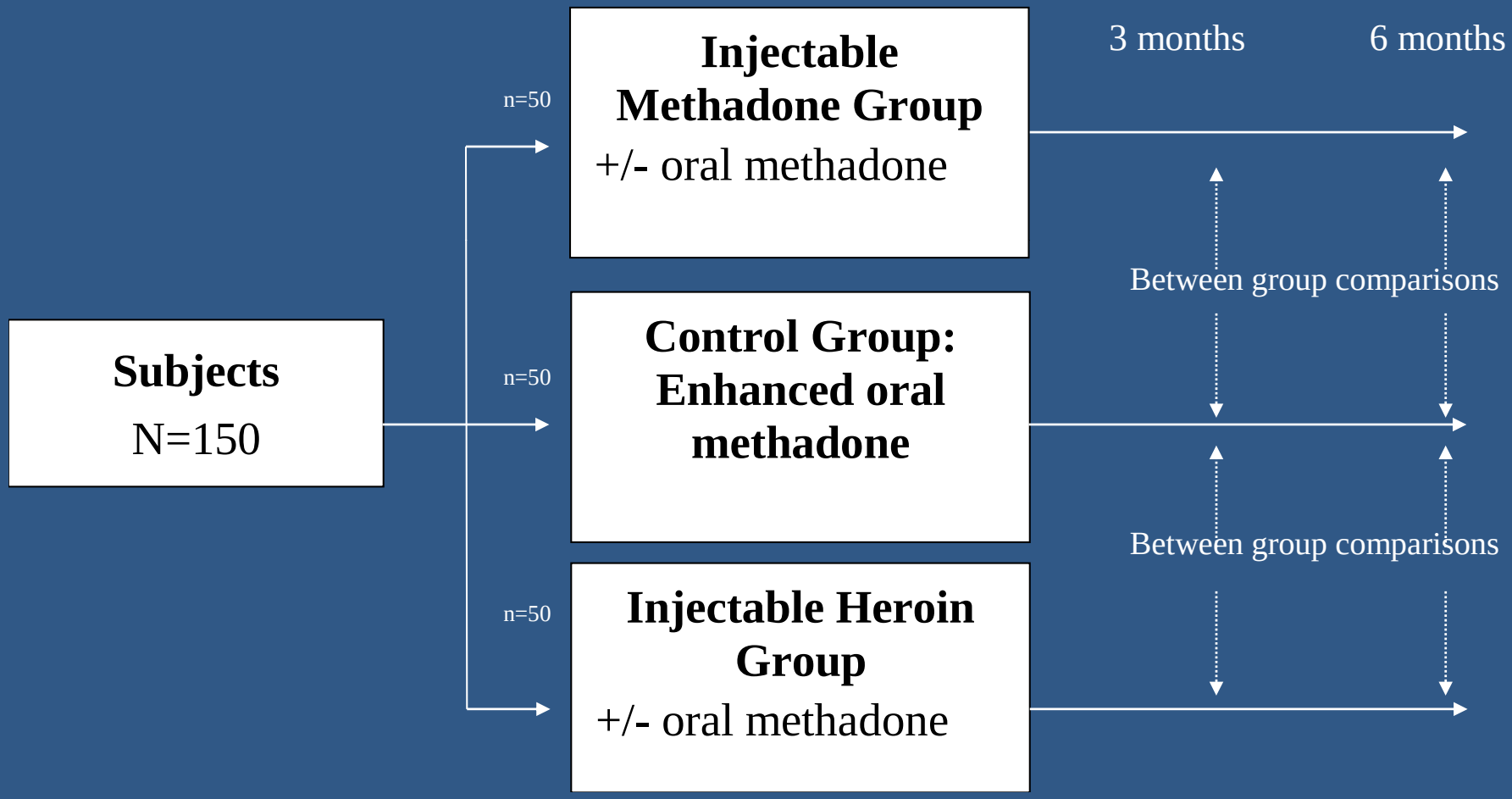
Primary Research Objectives

- Examine the safety, efficacy and cost effectiveness of treatment with optimised MMT compared to injectable methadone/heroin, for patients not responding to current MMT, RE:
  - illicit heroin and other drug use,
  - high risk injecting practices,
  - indices of general health and psychosocial functioning,
  - criminal activity,
  - treatment retention,
  - incremental cost-effectiveness in enhancing quality of life indices and reducing illicit heroin use.

Overview RIOTT

- Prospective 3 year multi-site RCT comparing 3 conditions
  - optimised oral Methadone
  - injected Methadone (+/- oral methadone)
  - injected Heroin (+/- oral methadone)
- 150 subjects ‘not responding’ to standard methadone treatment
- Measure a *variety of outcomes* over 6 months

Research Design



Eligibility Criteria

- Age 18 years or over
- > 3 year history of injecting Heroin use
- Currently in Methadone treatment (continuous > 6 month)
- Regular injecting Heroin use – defined as in past 3 months
  - opiate (+)ve UDS; evidence regular injecting on clinical exam
  - use of heroin on at least 50% of days in past month (self-report)
- Not pregnant; no active significant medical or psychiatric condition
- Not currently Alcohol dependent or unstable Benzodiazepine use.
- Able and willing to participate in the study procedures

Selection criteria

Target long-standing heroin users who frequently inject heroin whilst in current methadone treatment

- Lambeth or Southwark resident
- age 18 years or over; > 3 year history of injecting heroin use;
- in continuous methadone treatment for > 6 months this episode;
- regular injecting heroin use past 3 months
  - opiate (+)ve UDS; evidence of regular injecting on clinical examination
  - use of heroin on at least 50% of days in past month on self-report
- not pregnant / breastfeeding
- no active significant medical or psychiatric condition
- not currently alcohol dependent or unstable benzodiazepine use.
- able and willing to participate in the study procedures

Treatment procedures: Optimised MMT

- Adequate doses (e.g. >**100 mg** methadone: **200mg** max)
- Dispensing conditions based upon client's drug use, attendance at treatment, general health & social conditions
- Intensive **key work** & medical reviews
- Access to psychosocial services (+ psychology)
- Treatment of co-morbidity as required (care plans)
- Weekly Urinary Drug Screen (research related)
- (Not mandatory, but subsequent post-trial access to IOT requires 6 months 'optimised' treatment consistent with NTA Guidance)

Treatment Procedures: Injectable Methadone

- Adequate doses of injectable Methadone
  - Up to **200 mg/day**
- Supervision of ALL injected Methadone in 1–2 injections per day
- Clients can access oral Methadone either on regular basis, or if unable to attend for injected methadone
- Intensive key working & medical reviews
- Access to psychosocial services (+ psychology)
- Treatment of co-morbidity as required (care plans)
- Weekly UDS (research related)

Treatment Procedures: Injectable Heroin

- Adequate doses of injectable heroin
  - Up to **900 mg/day** (up to 450mg / injection)
- Supervision of all injected Heroin in 1–2 injections per day
- Clients can access oral methadone either on regular basis, or if unable to attend MH for injected heroin
- Intensive key work & medical reviews
- Access to psychosocial services (+ psychology)
- Treatment of co-morbidity as required (care plans)
- Weekly UDS (research related)

Induction into Heroin group

Pre-conversion Oral Methadone Dose (mg)	Post-conversion Total Daily Doses (mg)		Post-conversion Daily Medication Regimes (mg)	
	Methadone (oral)	Heroin (injected)	Morning	Afternoon
50	15	110	55mg H	55mg H 15mg M
60	20	120	60mg H	60mg H 20mg M
70	25	140	70mg H	70mg H 25mg M
80	25	160	80mg H	80mg H 25mg M
90	30	170	85mg H	85mg H 30mg M
100	35	190	95mg H	95mg H 35mg M

Example of Flexibility

- Option A - Heroin 250mg IV morning
  Heroin 250mg IV afternoon
  Methadone oral 30mg

  OR
- Option B - Heroin 250mg IV per day
  Methadone oral 100mg

  OR
- Option C - Methadone oral 170mg

Outcome Measures

Outcome	Measures
Drug use	UDS & self-report
Treatment retention	Clinic records (& self report)
Injecting practices	Frequency, risk & complications
Psychosocial functioning & Quality of Life Measures	SF-36, EQ-5D, OTI
Crime	Self-report (drug related expenditure & criminal activity)
Cost effectiveness	Service costs (internal & external)
Community Impact Evaluation	‘Nuisance’ issues for local community

Clinical Research

- Compare how good the 3 treatment approaches (injected heroin, injected and oral methadone) in
  - Reducing illicit heroin use
  - Reducing other drug use
  - Reducing injecting complications
  - Improving health & social functioning
  - Reducing crime
  - Patient satisfaction and goal attainment
  - Cost-effectiveness
- Follow each client up for 6 months
- Final research findings in 2 –3 years

Social research

- Community impact evaluation
  - Look at impact of injecting clinic upon local community
  - Monitor range of issues before & after clinic set-up
  - ‘Key informant’ interviews to identify ‘relevant outcomes’ to be measured
  - Identify ways of measuring these outcomes
  - Collect data & feedback findings

Post-trial (?)

- If continued clinical funding for Injecting Clinics:
  - Defer post-trial treatment decisions until after completion data collection for each client. Decisions made by each client & service providers
  - IOT clients: if substantial benefits from IOT: continue

    if no substantial benefits: transfer to oral methadone
  - Oral methadone clients who adhered to optimised conditions & still injecting: eligible for IOT
- If no continued clinical funding: clients return to 'standard care' methadone treatment
  - Emphasis from outset for clients that no guaranteed funding beyond life of the trial

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Longer term future (?)

- Pilot services aim to operate for 2–3 yrs
- Clinical research evaluation will identify is this type of treatment worth doing?
  - does it work, is it cost effective?
- Social research evaluation will identify impact upon local communities in running such services
- If these are favourable, then consider broader dissemination across England

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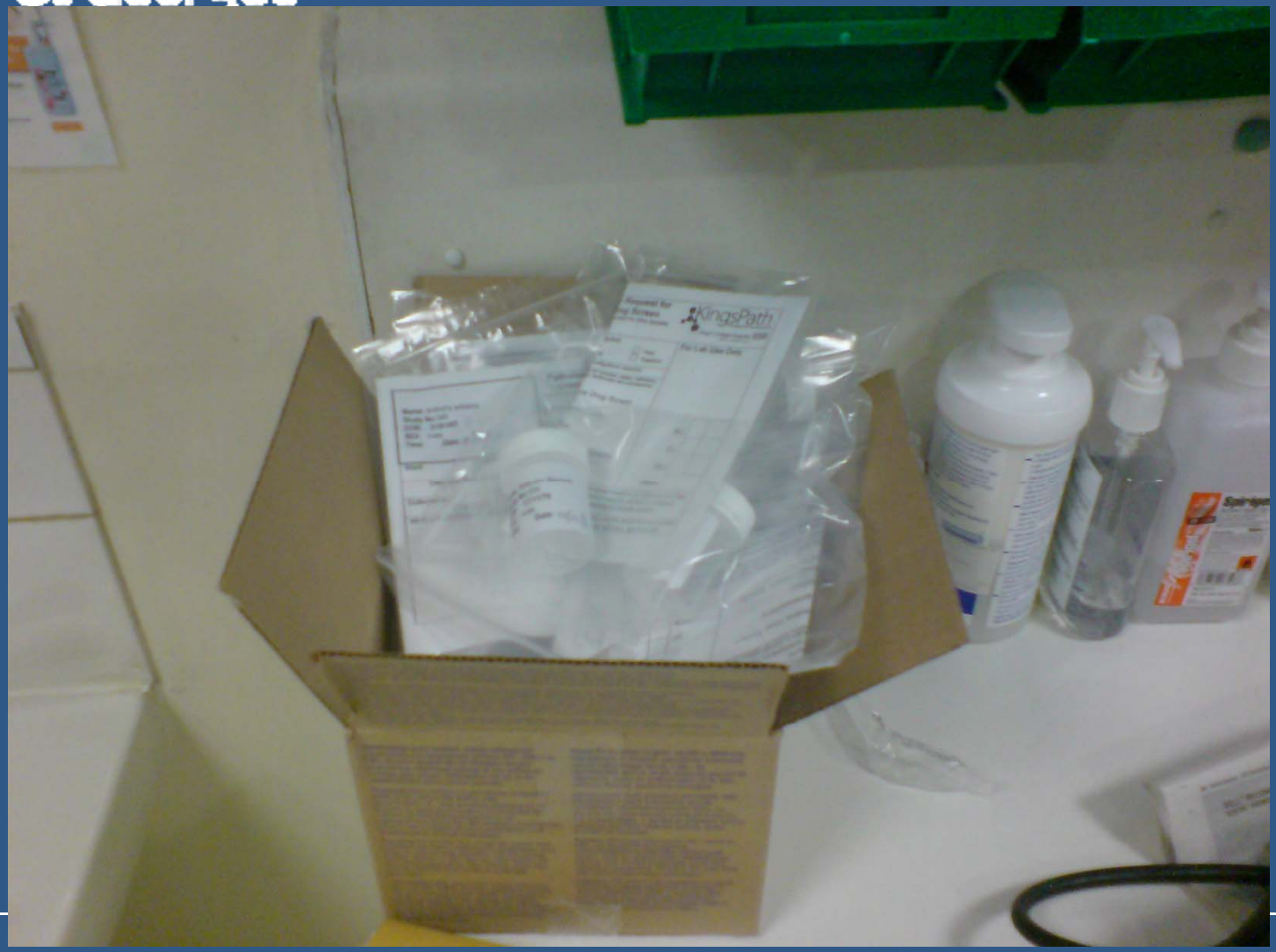

Detecting illicit heroin use

- No ‘objective’ measures of illicit heroin use in prior trials
- Street heroin has opioid impurities
  - acetylcodeine, noscapine, **papaverine**
- Differentiate between street & pharmaceutical heroin by GC/MS technology
- Recent study confirmed sensitivity of UDS for detecting **papaverine metabolites** (+ Imperial College Toxicology Unit)

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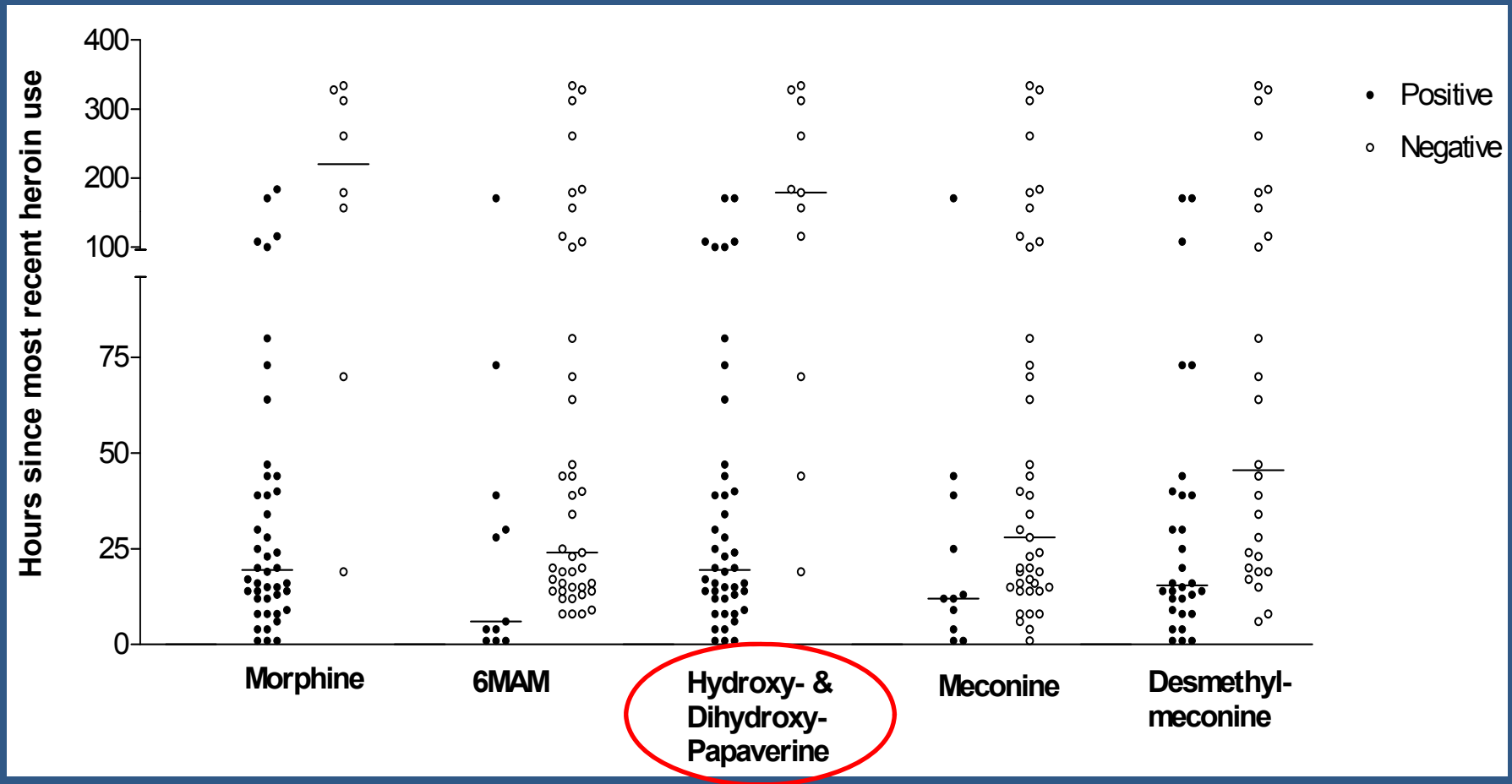

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Water for Injections

Alcohol (drink-drive!)

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Hygiene

Injecting procedures

On entry into injecting room

- Wash hands
- Given personal container with injecting equipment and pre-drawn syringe containing methadone / heroin
- Client inject themselves under supervision of 2 nurses
- Clients have 20 minutes in which to inject
- Clients responsible for cleaning up booth & disposing of used equipment

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Supervised injecting

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- All injecting sites subject to **risk assessment**
  - active / recent inflammation (infections / thrombosis)
  - chronic conditions: sinuses, sclerosis, venous insufficiency
  - immunosuppression / coagulation disorders
- Injecting sites: **heirarchies of risk**
  - IV Sites: arms / hands / feet & legs / groin
  - IM sites: upper arm / buttocks / thighs
- Time-limits for clients to inject: oral/IM if unable IV
- Post-trial: consider other routes (e.g. intranasal)

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Injecting sites

- Injecting sites part of risk assessment
  - preference for superficial veins, not deep veins
  - clients must be assessed by Medical Officer to authorise deep vein injecting (e.g. **groin**)
  - no injecting into veins with evidence of active / recent inflammation (infections / thrombosis)
  - limits re: genital / breast / neck injecting
  - injecting technique important

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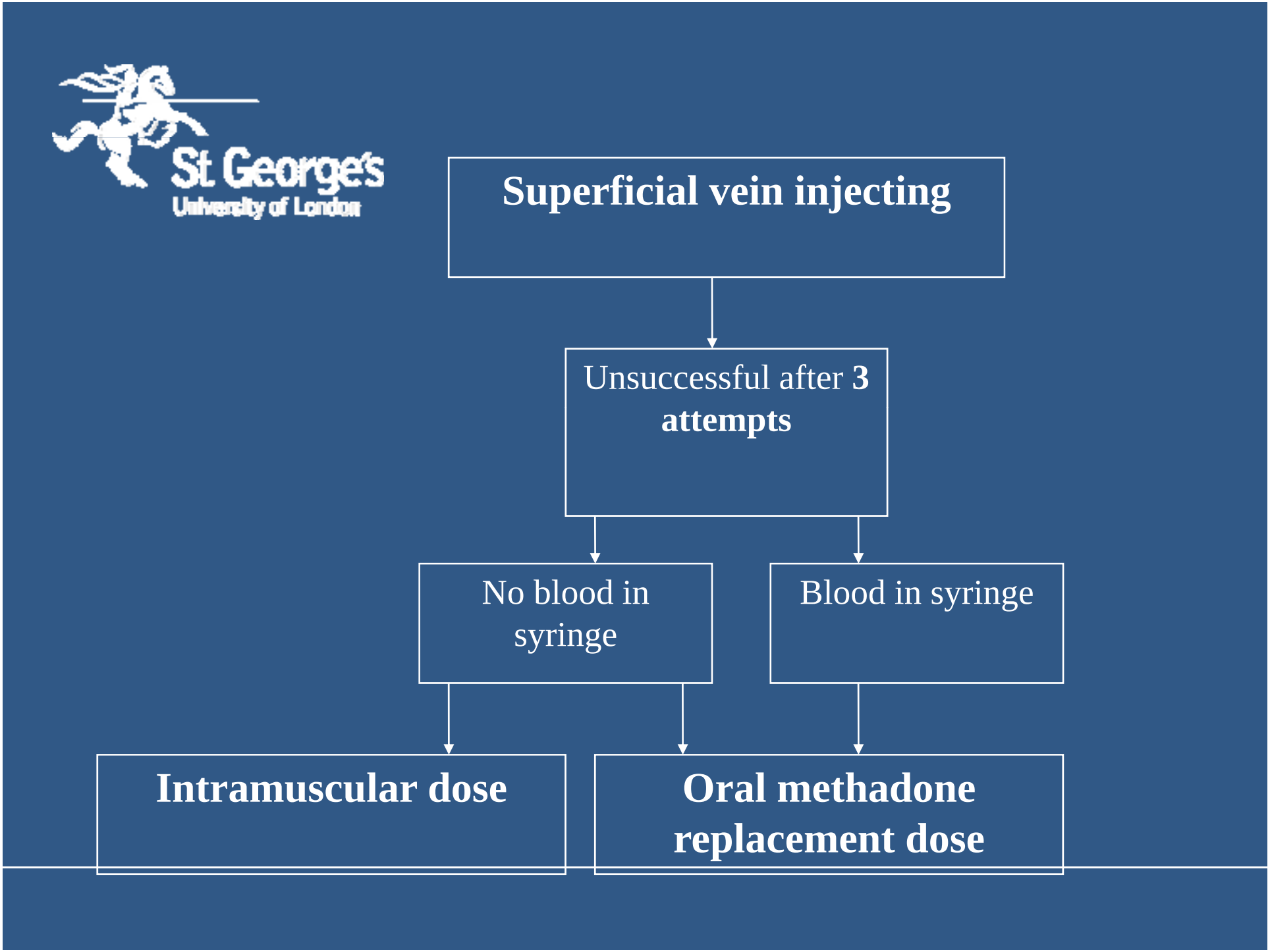
Groin injecting

Consider if …

- no other veins available & not satisfied with IM injecting
- client has history of groin injecting
- no evidence of current inflammation
- no recent problems (e.g. DVT, infection)
- good groin injecting technique
- aim to limit frequency of groin injecting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Superficial vein injecting
Unsuccessful after 3 attempts
No blood in syringe
Blood in syringe
Intramuscular dose
Oral methadone replacement dose

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Na

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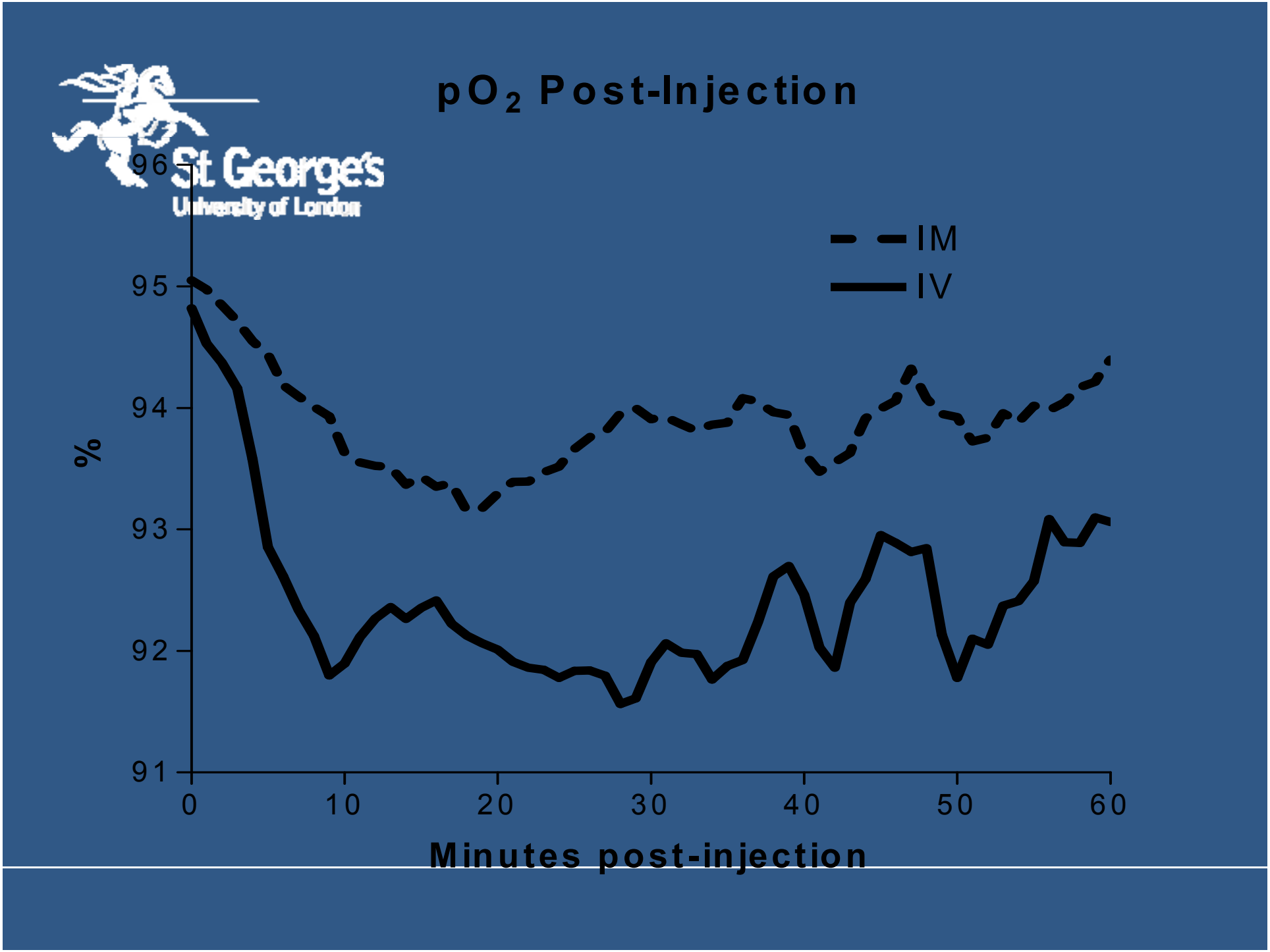
Things that can go wrong …

- Missed the vein …

- Emergency procedures for
  - **Overdose**
  - Anaphylactic shock
  - Seizures
  - Arterial injection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pO2 Post-Injection
IM
IV
%
96
95
94
93
92
91
0
10
20
30
40
50
60
Minutes post-injection

Safety concerns re: IV heroin

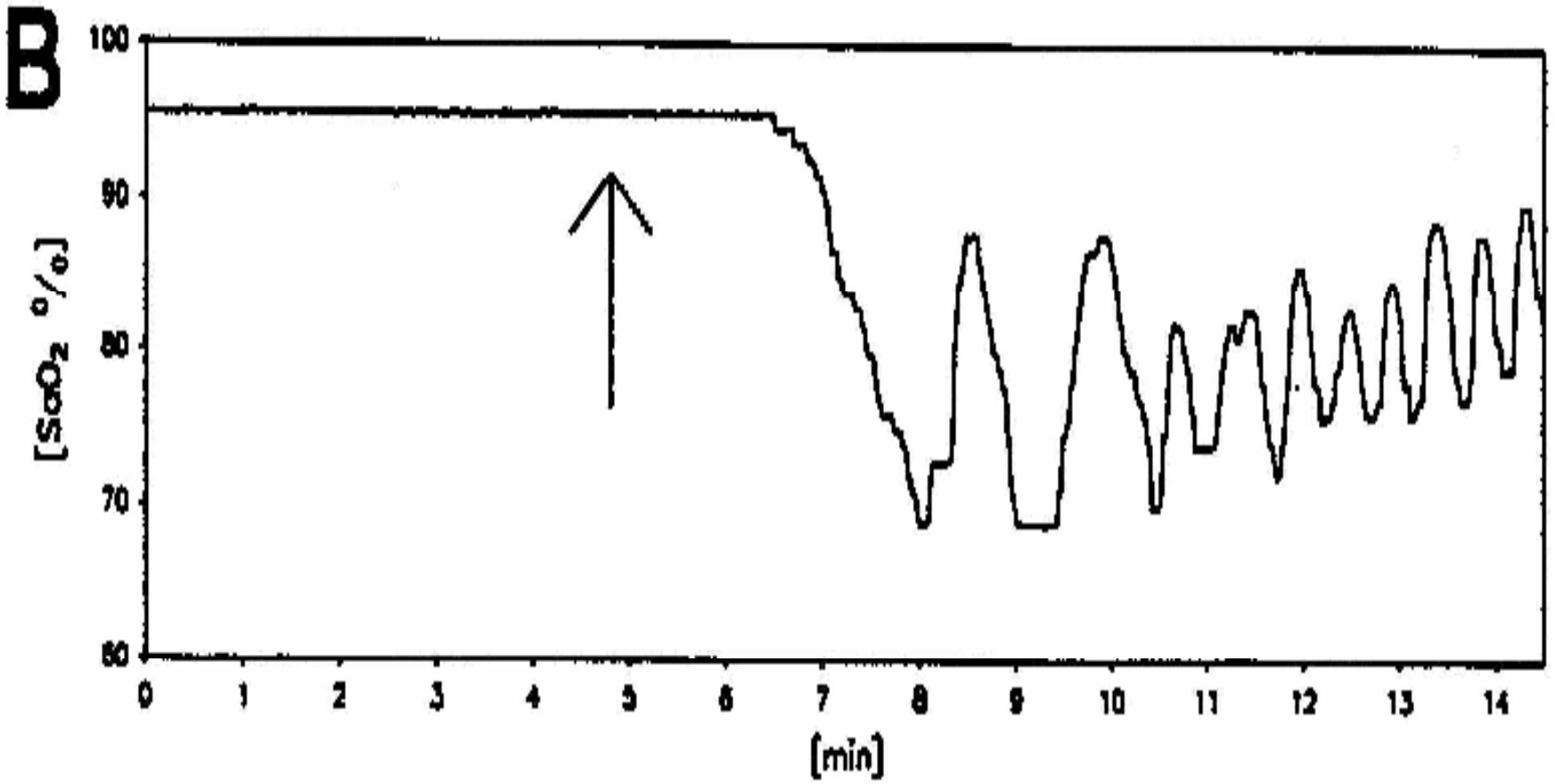

Fig. 2. Cortical hemoglobin and pulsoxymetry after intravenous heroin. Effects of 300 mg intravenous heroin on [HbO_2] and [HbR] in the frontal cortex (panel A) and on simultaneously registered oxygen saturation (panel B) of a representative opioid-dependent subject. In comparison, panel C shows the effects of intravenous saline (5 ml) on [HbO_2] and [HbR] in the frontal cortex of a representative control subject. Arrows indicate time of injection.

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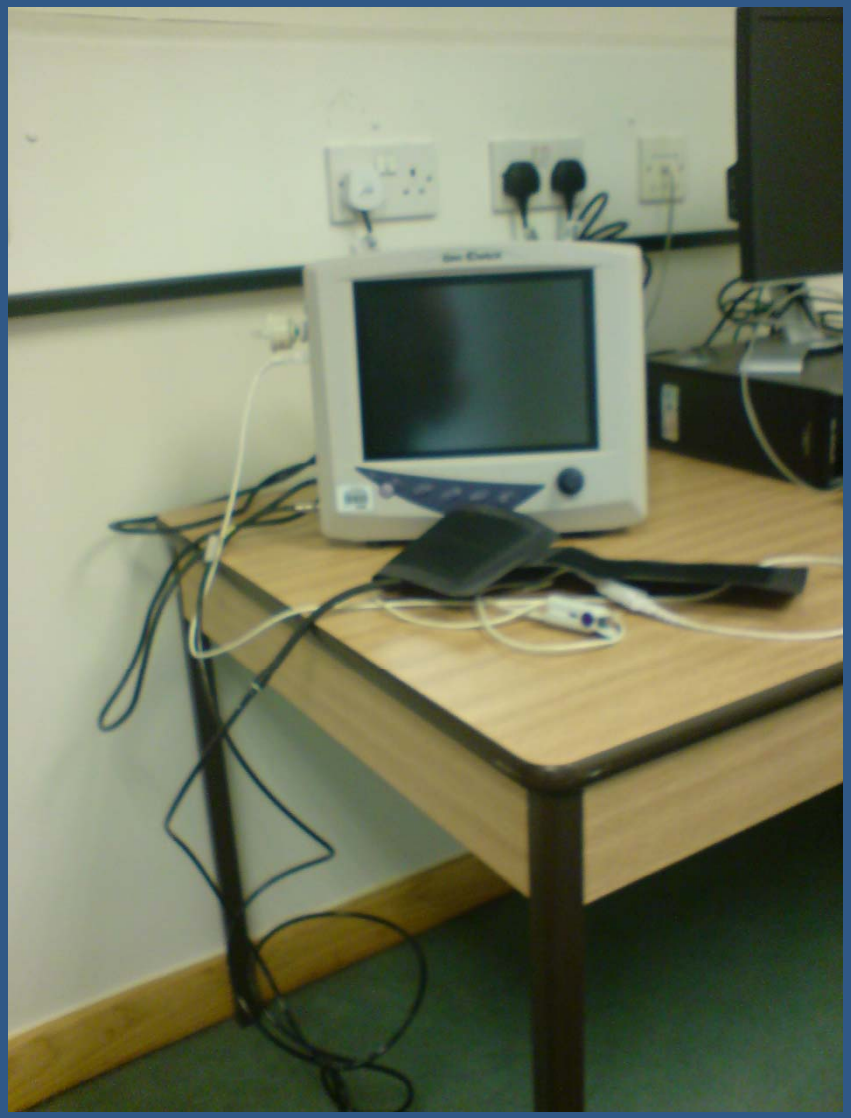
Monitor



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Monitoring

- Formal monitoring occurs during dose induction, after dose increase, or if there are concerns
- Monitor:
  - Pulse rate, blood pressure, respiratory rate, pupil size
  - Blood oxygen levels (pulse oxymeter)
  - Client and staff rating of withdrawal; sedation
- Monitored before injection, and 5, 15 & 30 minutes after injection.

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Other Medication!

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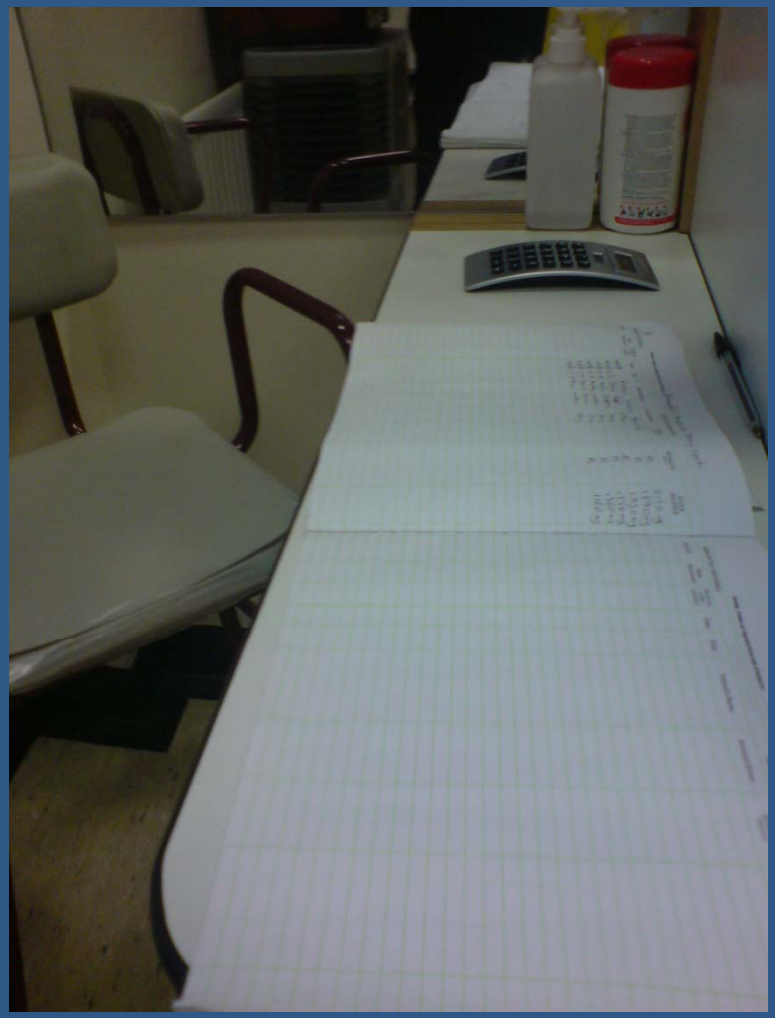
Record Keeping



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Waste

Possible Pathway of Care

6 months (Engagement)	12 months (Stabilization)	18 months (Recovery)	24 months (Discharge)	Follow-up
More Flexible Criteria for referral, From: Tier 3, GP, Forensic (Drugs Act 05), Private sector, obstetric, (EI model) "*Heroin Addicts whose have not made progress with the available resources"*	IV Diamorphine (Possible MXL)	Transfer to MMT, (or MXL) Group therapy, day programs Contingency Management UDS (LCMS) OT/SW input; education, job and housing with aim of reintegration	Detoxification Rehabilitation	Shared Care Tier 3 Detox & Rehab Maintenance team?


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Documents
Strang review July 2014.pdf
Heroin on trial: a review of randomised trials of diamorphine-prescribing as treatment for refractory heroin addiction
John Strang, Teodora Groshkova, Ambros Uchtenhagen, Wim van den Brink, Christian Haasen, Martin T Schechter, Nick Lintzeris, James Bell, Alessandro Pirona, Eugenia Oviedo-Joekes, Roland Simon and Nicola Metrebian
John Strang*, MD, MBBS, FRCPsych, FRCP, Professor of the Addictions, King's College London; and Director of the National Addiction Centre, (Institute of Psychiatry & the Maudsley NHS Foundation Trust), London, United Kingdom.
Teodora Groshkova**, PhD, Researcher, King's College London, National Addiction Centre, (Institute of Psychiatry and the Maudsley NHS Foundation Trust), London, United Kingdom.
Ambros Uchtenhagen, MD, PhD, em. Professor of Social Psychiatry, Zurich University and Chairman, Research Foundation for Public Health and addiction (a WHO Collaborating Centre affiliated with Zurich University), Switzerland.
Wim van den Brink, MD, PhD, Professor of Psychiatry and Addiction, Academic Medical Center, University of Amsterdam; & Director of the Amsterdam Institute for Addiction Research, Amsterdam, Netherlands.
Christian Haasen, MD, PhD, Director, Centre for Interdisciplinary Addiction Research, University Medical Center Hamburg-Eppendorf, Hamburg, Germany.
Martin T Schechter, OBC, MD, PhD, FRSC, FCAHS, Professor and Director, School of Population and Public Health, University of British Columbia, Canada.
Nick Lintzeris, MBBS, PhD, FAChAM, Associate Professor, Facility of Medicine, Sydney University; & Director, Drug and Alcohol Services, SESLHD (c/o The Langton Centre), NSW, Australia.
James Bell, MD, FRACP, FAChAM, Consultant Physician, South London and Maudsley NHS Foundation Trust, London, United Kingdom.
Alessandro Pirona, MSc, PhD, Scientific Analyst in Health and Social Responses, European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), Lisbon, Portugal.
Eugenia Oviedo-Joekes, PhD, Assistant Professor, School of Population and Public Health, University of British Columbia, Centre for Health Evaluation and Outcome Sciences, Providence Health Care, Vancouver, Canada.
Roland Simon, Head of unit, Interventions, best practice and scientific partners, European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), Lisbon, Portugal.
Nicola Metrebian, PhD, Senior Research Fellow, King's College London, National Addiction Centre, (Institute of Psychiatry and the Maudsley NHS Foundation Trust), London, United Kingdom.
* Author for correspondence: Professor John Strang, National Addiction Centre, Kings College London, London SE5 8BB, UK
email: john.strang@kcl.ac.uk
** Co-first-author
Word count: 3 940 words excluding abstract, references, headings, etc
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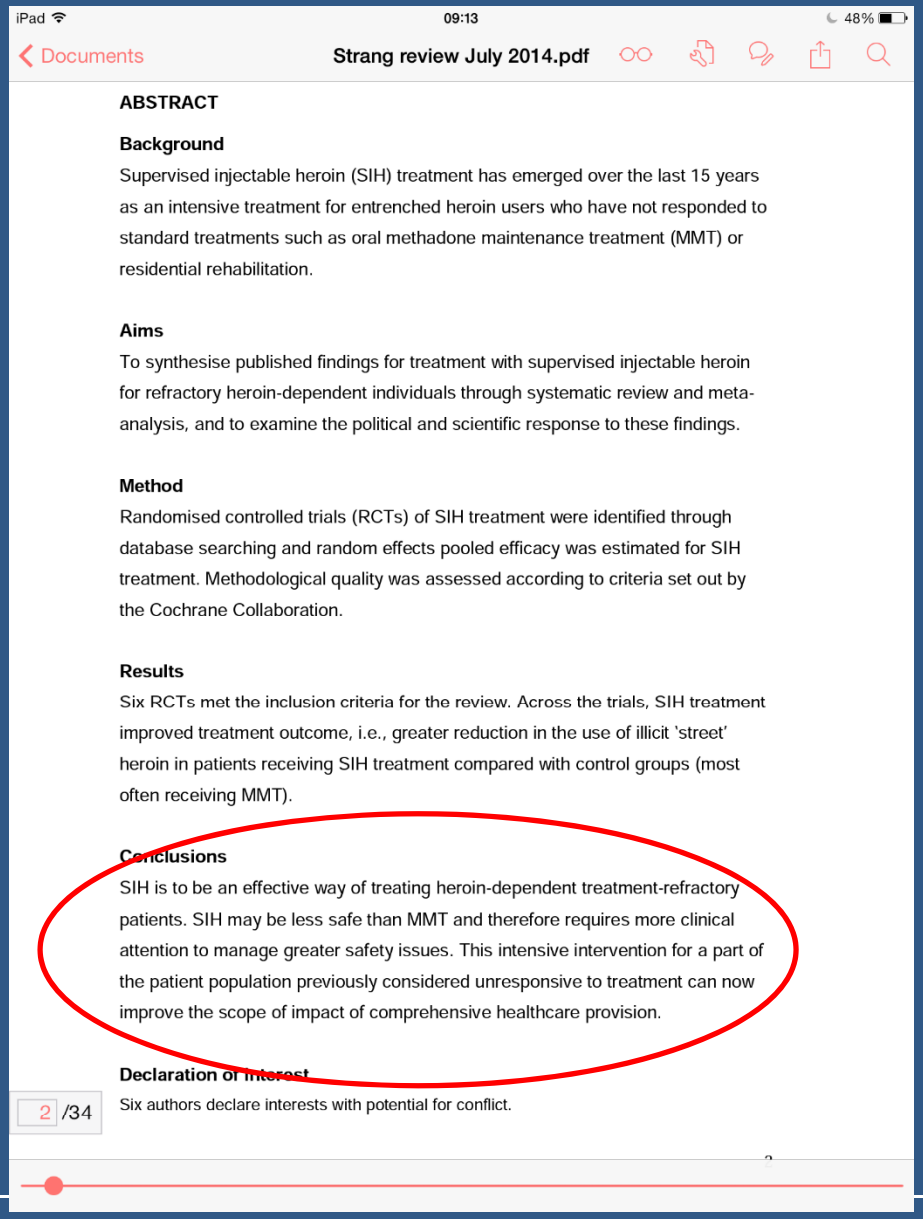
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Documents
Strang review July 2014.pdf
ABSTRACT
Background
Supervised injectable heroin (SIH) treatment has emerged over the last 15 years as an intensive treatment for entrenched heroin users who have not responded to standard treatments such as oral methadone maintenance treatment (MMT) or residential rehabilitation.
Aims
To synthesise published findings for treatment with supervised injectable heroin for refractory heroin-dependent individuals through systematic review and meta-analysis, and to examine the political and scientific response to these findings.
Method
Randomised controlled trials (RCTs) of SIH treatment were identified through database searching and random effects pooled efficacy was estimated for SIH treatment. Methodological quality was assessed according to criteria set out by the Cochrane Collaboration.
Results
Six RCTs met the inclusion criteria for the review. Across the trials, SIH treatment improved treatment outcome, i.e., greater reduction in the use of illicit 'street' heroin in patients receiving SIH treatment compared with control groups (most often receiving MMT).
Conclusions
SIH is to be an effective way of treating heroin-dependent treatment-refractory patients. SIH may be less safe than MMT and therefore requires more clinical attention to manage greater safety issues. This intensive intervention for a part of the patient population previously considered unresponsive to treatment can now improve the scope of impact of comprehensive healthcare provision.
Declaration of Interest
Six authors declare interests with potential for conflict.
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Questions?

EMAIL: cyrus.abbasian@nhs.net