

# **Buprenorphine Research into Injectable Opioids (BRIO)**

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# Disclaimer

- Rob van der Waal is currently undertaking a research project funded by Reckitt-Benckiser

# Background

- Some people in conventional OST ( e.g. oral methadone, SL buprenorphine) persist in injecting heroin and other drugs often resulting in
  - Multiple unsuccessful treatment episodes (including detox, rehab)
  - Criminal justice involvement
  - Poor health and social functioning
- RCT's have reported that supervised Injectable Opioid Treatment (IOT) can help retain people in treatment; reduce street heroin use; and improve health and social functioning

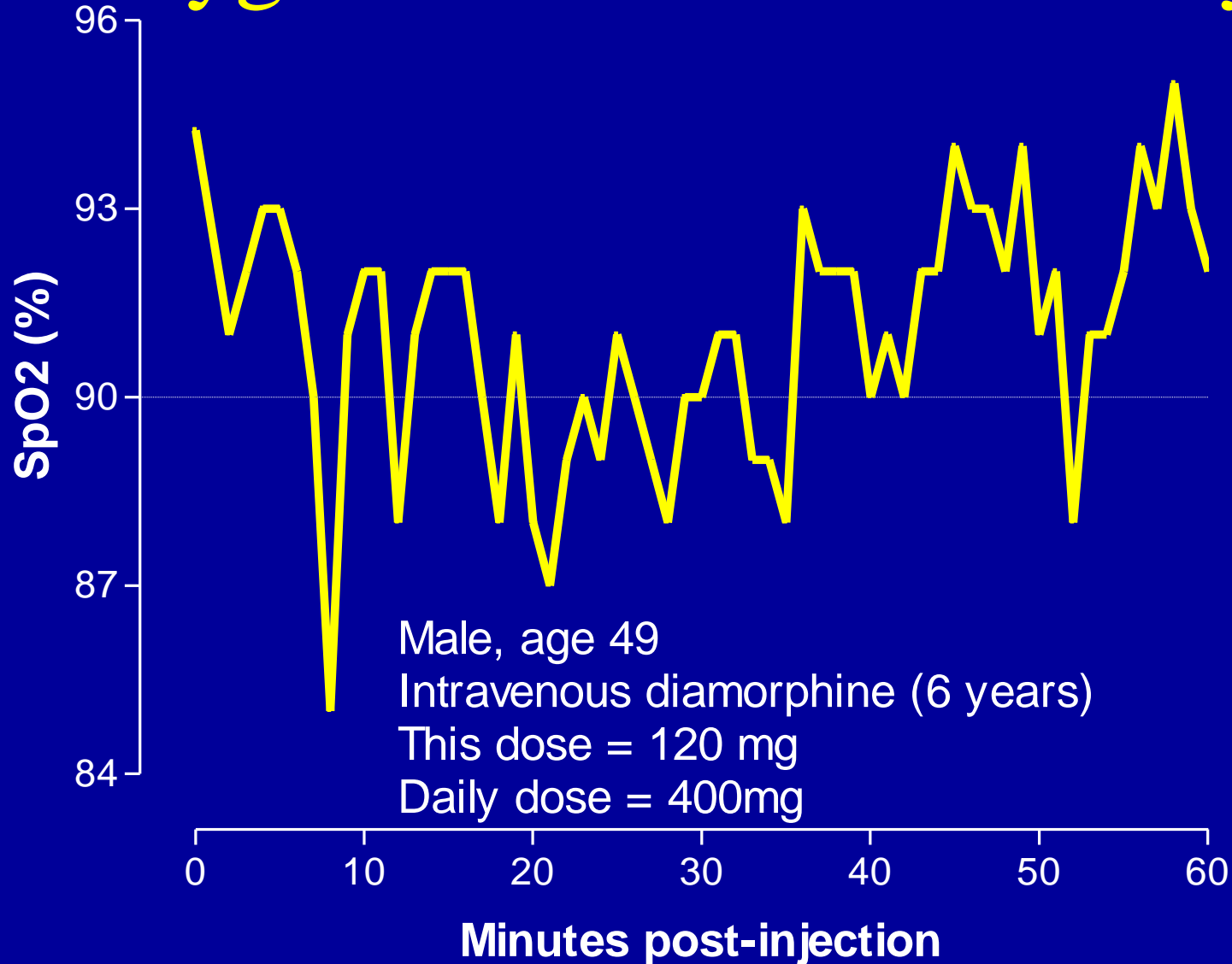
# Background

- In the UK supervised IOT is available as a second line treatment and consists of
- Diamorphine ampoules with additional oral methadone (or in some cases Controlled Release Oral Morphine)
- Methadone ampoules with additional oral methadone

# Drawbacks of Injectable Diamorphine and Methadone

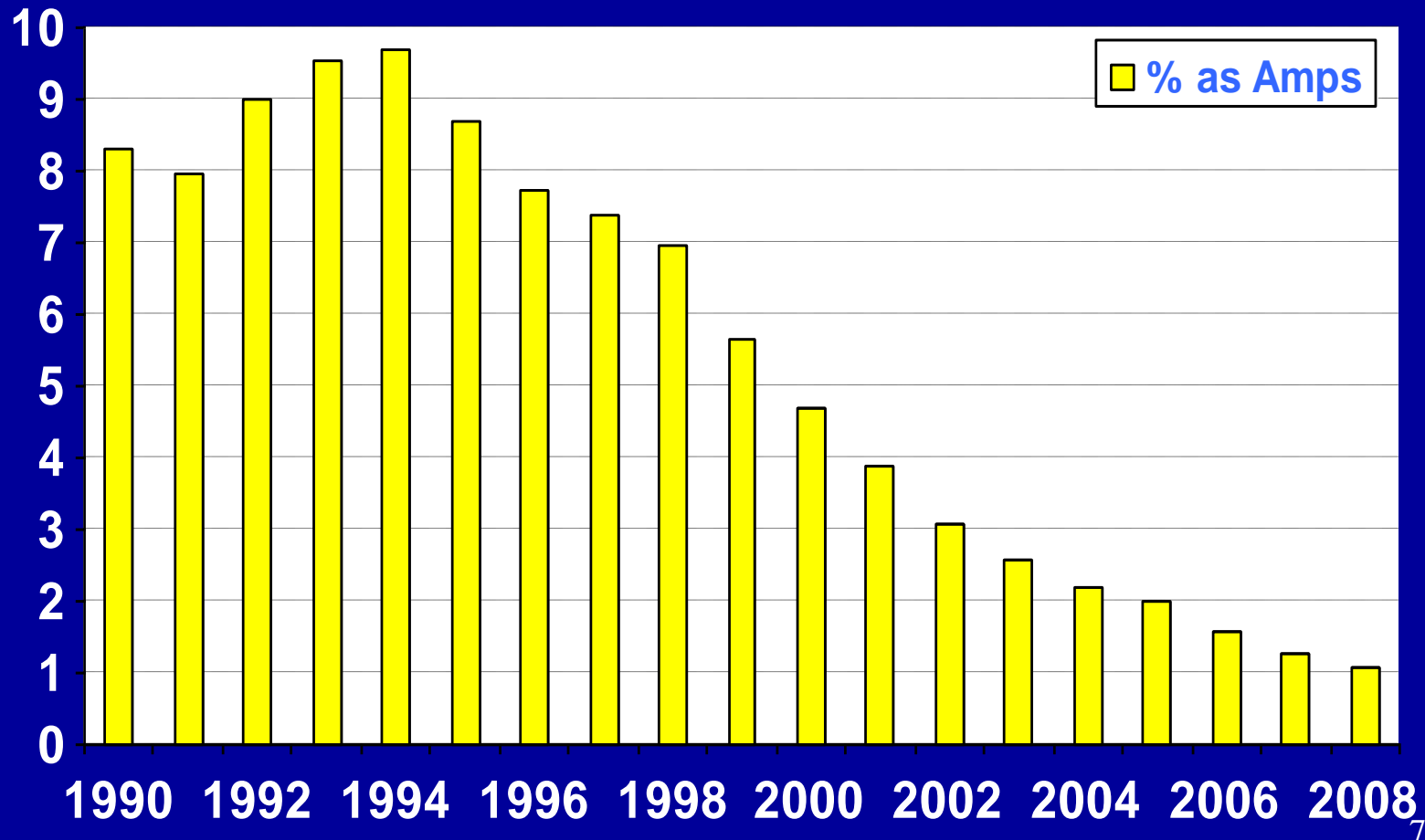
- Diamorphine ampoules – risk of hypoxia, higher frequency of attendance, higher costs
- Methadone ampoules – ‘stings’, unpopular with most patients, complications when administered IM

# Oxygen saturation: case study



# Methadone: ampoules as proportion

proportion of NHS methadone prescriptions as Ampoules (England, annual data, 1990-2008)



# Injectable Buprenorphine?

- Significant number of people prescribed SL buprenorphine continue to inject street heroin
- Previously required switch to oral methadone to start supervised IOT
- Buprenorphine ampoules may provide better treatment options for those patients



# Injectable Buprenorphine?

- Are people interested?
- Does it deter people from injecting street heroin?
- Is it sufficiently reinforcing?
- Is it safe?

# Research question

- The study will examine whether subjects not responding to conventional substitution treatment will remain in injectable buprenorphine treatment, and will reduce their use of non-prescribed opioids. In addition, the study will investigate subjective and physiological responses to injectable high-dose buprenorphine, and will investigate responses across a range of doses.

# Primary objectives

- Feasibility of recruiting and maintaining people
- Reduction or cessation of injecting street heroin
- Subjective and physiological responses
- Optimal dose range of injectable buprenorphine (Agonist/ antagonist effects at high doses? )
- Safety of Injectable Buprenorphine
- Ascertaining appropriate power calculations to conduct a full RCT

# Sample

- 10 participants
- In buprenorphine treatment for a minimum of 3 months this episode, and for a total of 12 months on methadone or buprenorphine
- Persisting in injecting heroin > 3 days per week as evidenced by UDS, client self-report of regular injecting heroin use in the preceding 3 months, and of injecting heroin use on at least 50% of days in the past month
- No significant liver and/or respiratory disease

# Setting

- Supervised Injecting Clinic (AD 2005)
  - South London and Maudsley NHS Foundation Trust
  - For daily supervised administration
- Respiratory unit
  - Kings College Hospital
  - For respiratory monitoring on day 1, 8, 183

# Study design

## TITRATION

- 21 days
- 3 stages

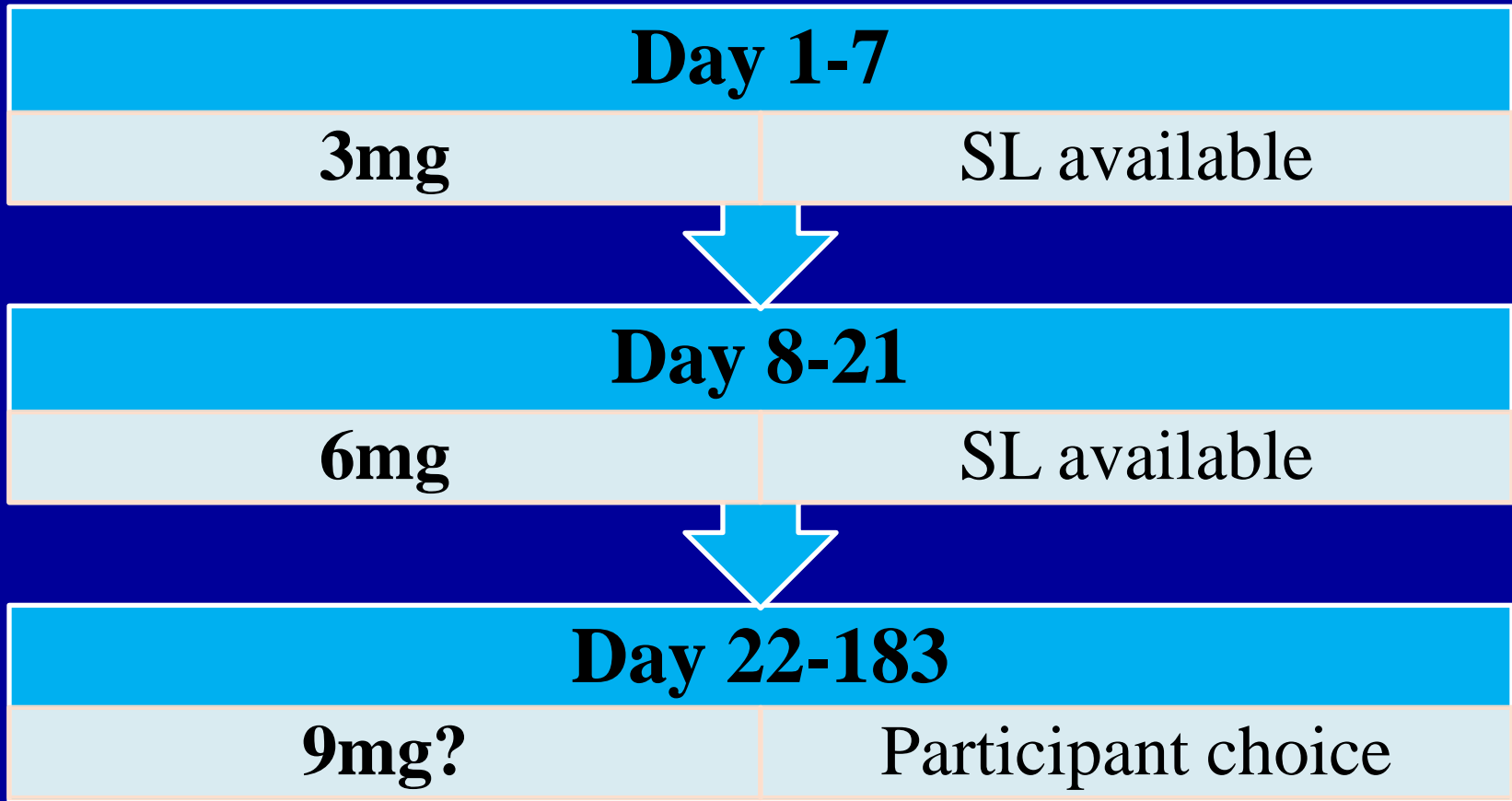
## MAINTENANCE

- 23 weeks
- Dose changes optional

## EXTENSION

- 2 months
- Participant choice

# Buprenorphine titration



# Routine Monitoring

- Prior to each injection clinic staff complete a routine check to ensure it is safe to administer medication (include injecting sites)
- Monthly key-worker and medical reviews (alternating, therefore a comprehensive review every two weeks)



# Extended Monitoring

- 2 hour observation period at day 1, 8 and 183-physiological and cardio respiratory measures
- At each dose change in maintenance stage or when there are concerns, pulse, blood pressure, respiratory rate, pupil size, SpO<sub>2</sub> will be monitored

# Outcome measures

Outcomes	Measures
Reduction in street heroin use Successful outcome = 50% reduction	Weekly UDS & self-report
Treatment retention Successful outcome > 60%	Clinic records

# Outcome Measures

Outcomes	Measures
Drug effects	<ul style="list-style-type: none"><li>• Clinical Opioid Withdrawal Scale (COWS)</li><li>• Visual Analogue Scales (VAS) –<ul style="list-style-type: none"><li>• Perceived liking<ul style="list-style-type: none"><li>• Negative</li><li>• Positive</li></ul></li><li>• Perceived effectiveness</li><li>• Craving experienced</li></ul></li><li>• Short Form Research Centre Inventory (SF ARCI)</li></ul>

# Outcome measures

Outcomes	Measures
Safety	Adverse events; symptoms checklist, inspection of injecting sites; biochemical, haematological, hormonal; and respiratory parameters [ respiratory muscle electromyography (EMG), Transcutaneous (TcCO <sub>2</sub> ) and End-Tidal Carbon Dioxide Monitoring (ETCO <sub>2</sub> ), Peripheral Oxygen Saturation (SP0 <sub>2</sub> ) ]

# Outcome Measures

Outcomes	Measures
Attitudes and perceptions of injected buprenorphine	<ul style="list-style-type: none"><li>•Injecting Drug Users Quality Of Life questionnaire (IDUQOL)</li><li>•Leeds Dependence Questionnaire</li><li>•Qualitative interviews regarding reasons for continued documented illicit drug use (if applicable)</li></ul>

# End of Trial

- Continue on injectable buprenorphine (as long as stocks last)
- Transfer to injectable diamorphine + SL buprenorphine
- Transfer back to SL buprenorphine

# Support and Funding

- Supported by Action on Addiction & National Addiction Centre, King's College London
- Co-Sponsors - Kings College London, and the South London and Maudsley NHS Foundation Trust

# Chief Investigator

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# Thank You

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