



# More Options for the Treatment of Opioid Addiction

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Presentation to the  
New Mexico State Legislative Health and Human Services Committee  
November 8, 2018

# Oral Agonist Treatment (OAT)

- main treatment since 1960s
- methadone, buprenorphine
- for some patients, OAT works
  - decreases craving
  - decreases illicit injections
- but not effective for all
  - low retention rates
  - continued illicit drug use even during Rx

# After 50 years of OAT treatments

- effective for some but sub-optimal
- not successful for everyone
- highest risk of overdose death comes right after coming off OAT
- opioid dependence remains a major public health and social problem

# The Burning Clinical Question

How should we treat people who have not benefited from these existing treatments?

Try these existing treatments  
yet again?

Try something new?



**The Choices**

Try these existing treatments  
yet again?

Try something new?



**Randomized Controlled Trial**

**Injectable  
Diacetylmorphine  
(DAM)**



**Optimized  
Oral methadone**

## **Randomized Controlled Trial**

for chronic injection opioid users who previously did not benefit from available therapies and remain outside the addiction treatment system

# Theory of Injectable Opioid Treatment

- many drug users remain out of treatment
- if we could attract them into treatment
  - stop endless “grind” of crime and sex work
  - stabilize chaotic lives and improve health
  - avoid HIV, HCV, other diseases, and death
  - provide counselling
  - provide other treatments if desired

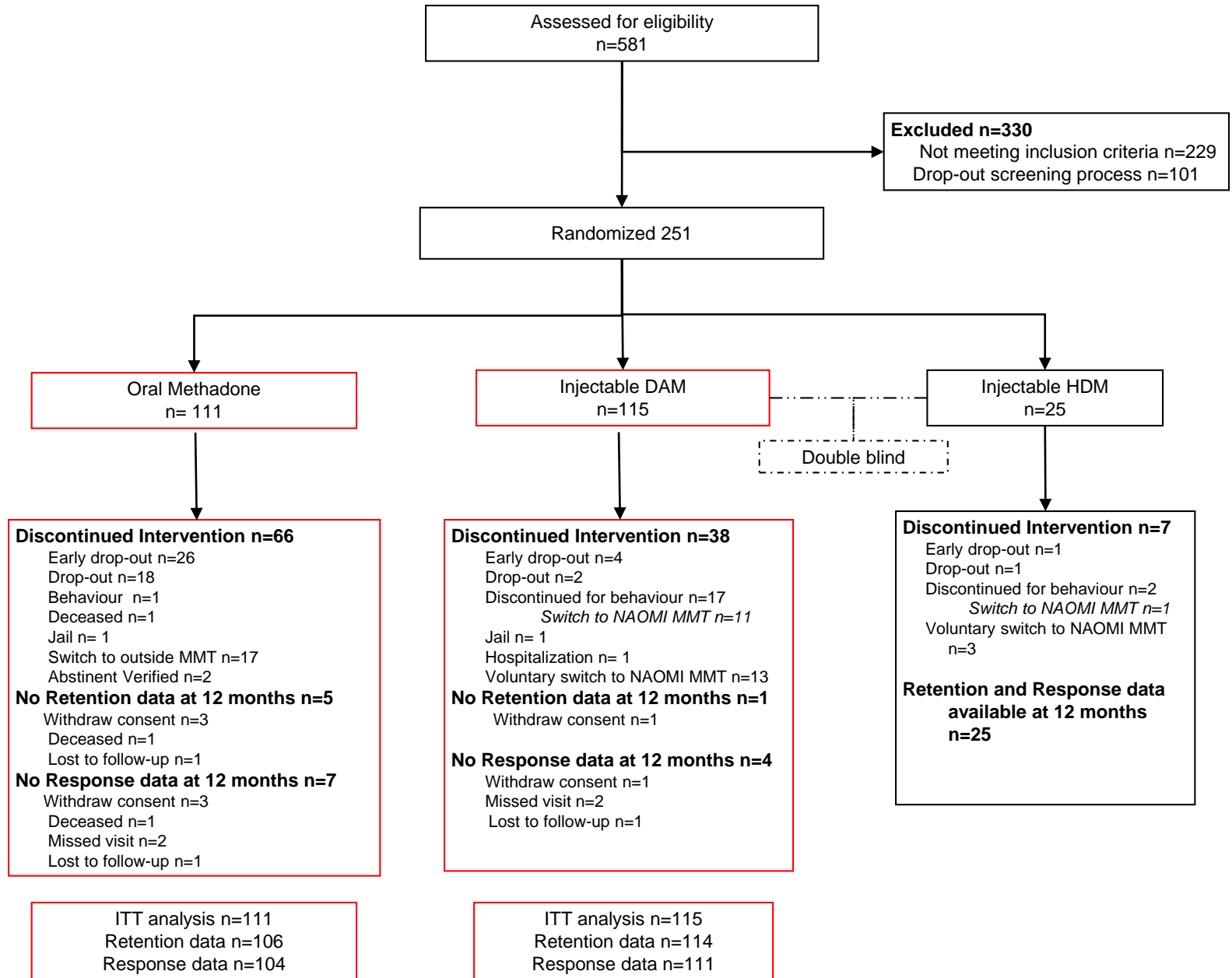


Enrolment

Allocation

Follow-up

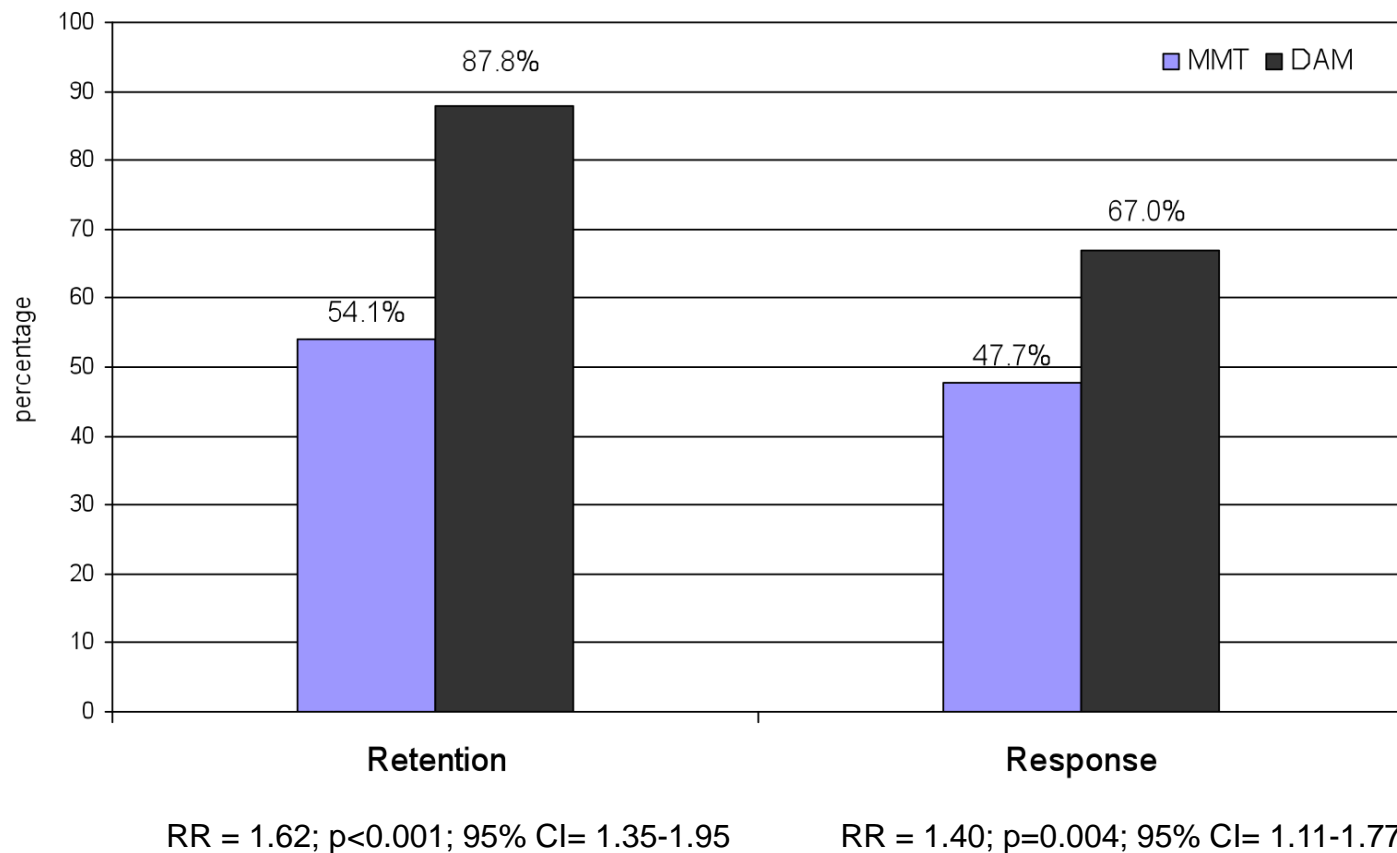
Analysis



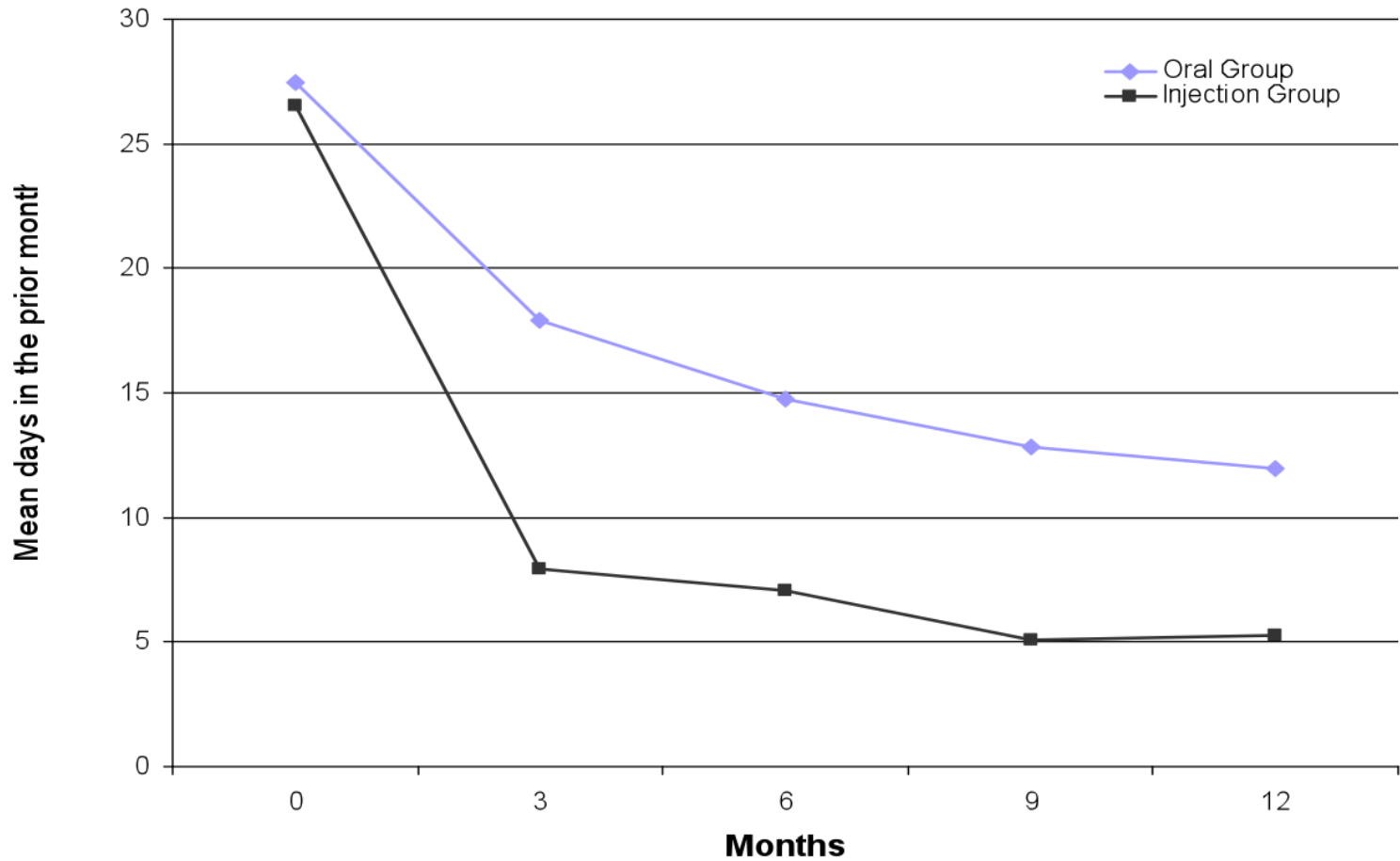
# Profile of the Participants

<b>Characteristics</b>	<b>Total (n=251) % or mean</b>
Age	39.7
Female Gender	38.6%
First Nation	23.9%
Precarious housing	72.9%
Unemployed over the past 3 years	70.9%
Public Assistance or Welfare	76.1%
Illegal Sources of Income	67.3%
Sex work	17.5%
Ever convicted in life	81.7%
Illegal activities, days in the prior 30	15
Money spent on drugs, prior month	\$1500
Number of prior Methadone Treatments	3
Number of previous treatments	7
Overdoses in life	4.1

# The Primary Outcomes



# “Street” Heroin Use



The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

# Diacetylmorphine versus Methadone for the Treatment of Opioid Addiction

Eugenia Oviedo-Joekes, Ph.D., Suzanne Brissette, M.D., David C. Marsh, M.D.,  
Pierre Lauzon, M.D., Daphne Guh, M.Sc., Aslam Anis, Ph.D.,  
and Martin T. Schechter, M.D., Ph.D.

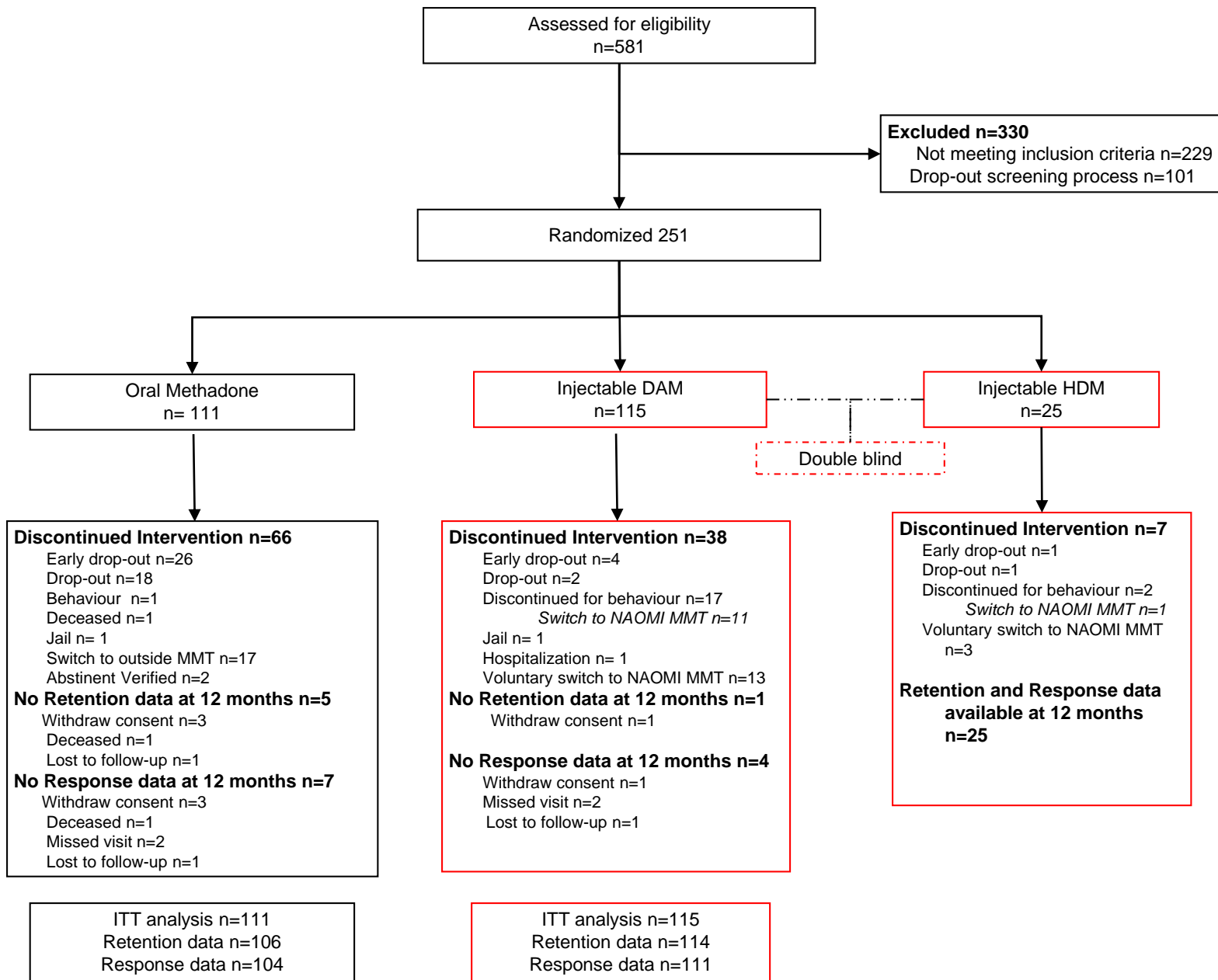
N ENGL J MED 361;8 NEJM.ORG AUGUST 20, 2009

Enrolment

Allocation

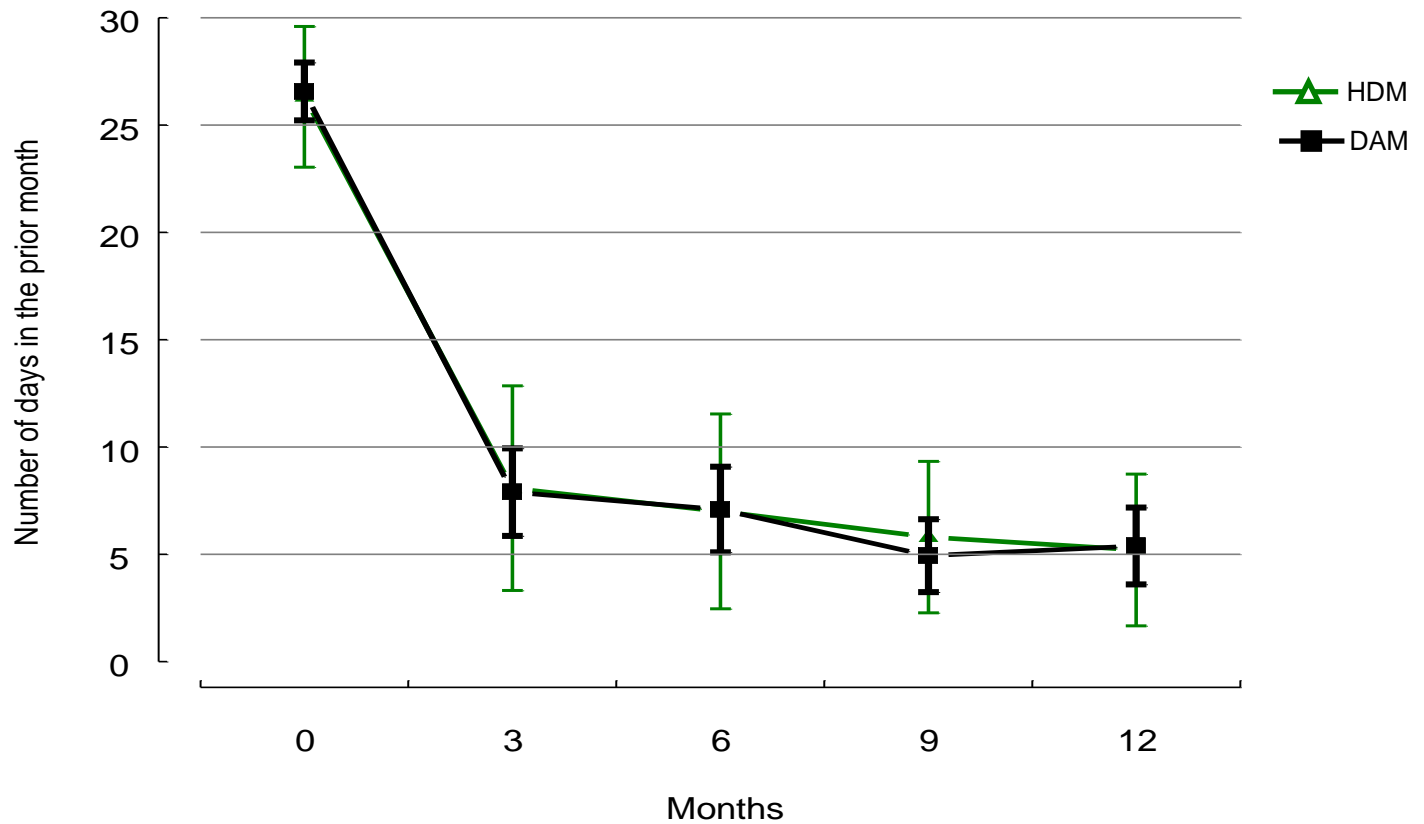
Follow-up

Analysis



# The Hydromorphone Surprise

## Street heroin use



# The Hydromorphone Surprise

Type of opioid the patient thought s/he received during treatment	DAM (n=115)	HDM (n=25)	Total (n=140)
Heroin definitely – n (%)	53 (46.1)	8 (32.0)	61 (43.6)
Heroin possibly – n (%)	18 (15.7)	8 (32.0)	26 (18.6)
Not sure – n (%)	22 (19.1)	4 (16.0)	26 (18.6)
Dilaudid® possibly – n (%)	9 (7.8)	3 (12.0)	12 (8.6)
Dilaudid® definitely – n (%)	3 (2.6)	<b>0 (0.0)</b>	3 (2.1)
No data* – n (%)	10 (8.7)	2 (8.0)	12 (8.5)

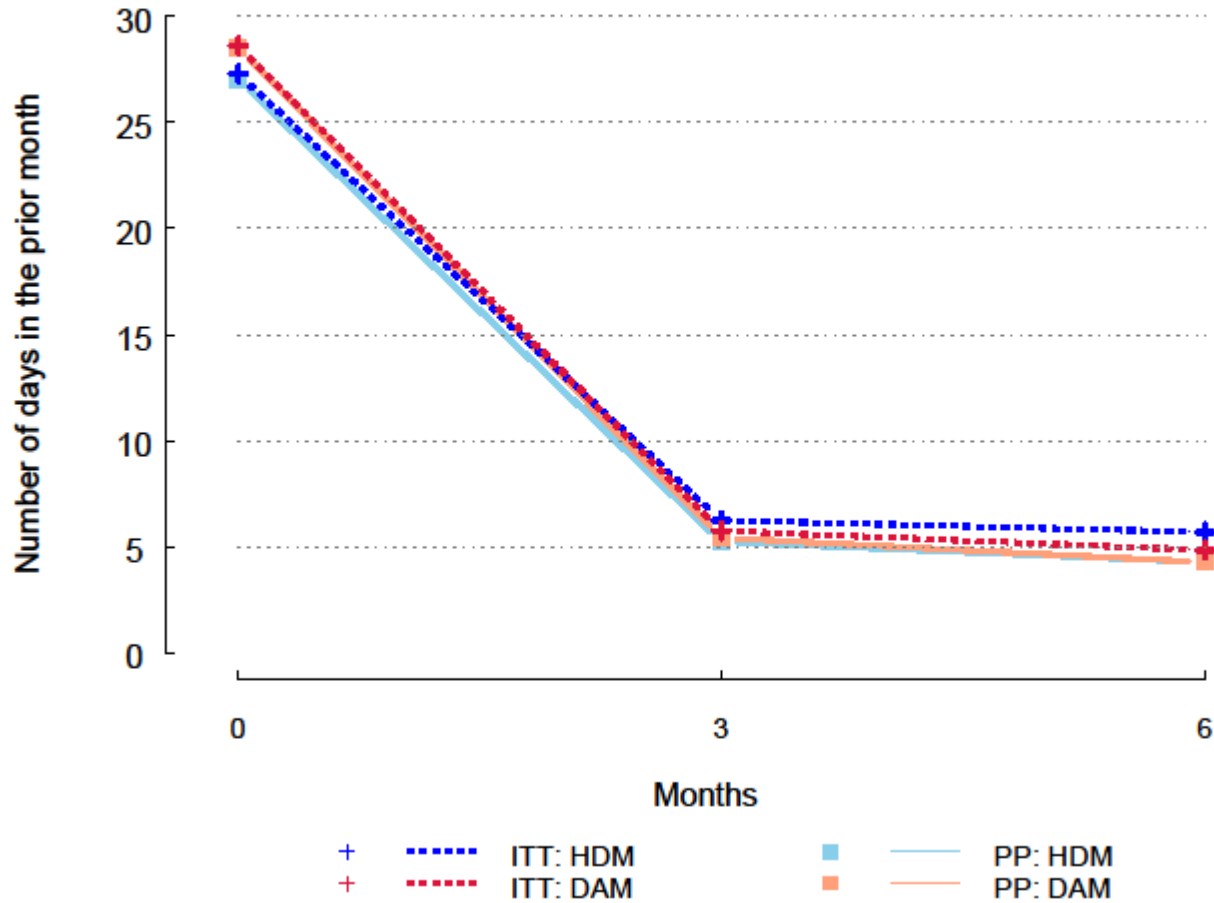
(\*) One participant switched to oral methadone without receiving any HDM dosage; 2 participants did not complete the treatment retention questionnaire after leaving the clinic; 9 participants completed the retention questionnaire before the evaluation of the double blind was introduced.



# SALOMÉ

Study to Assess Longer-term Opioid  
Medication Effectiveness

# SALOME: Total Street Acquired Opioid Use





Research

Original Investigation

## Hydromorphone Compared With Diacetylmorphine for Long-term Opioid Dependence A Randomized Clinical Trial

Eugenia Oviedo-Joekes, PhD; Daphne Guh, MSc; Suzanne Brissette, MD; Kirsten Marchand, BSc; Scott MacDonald, MD; Kurt Lock, BA; Scott Harrison, MA; Amin Janmohamed, MSc; Aslam H. Anis, PhD; Michael Krausz, MD; David C. Marsh, MD; Martin T. Schechter, MD

# Questions about Injectable Opioid Treatment

1. Can this be done safely?

# Vancouver Injection Room





- addiction medicine specialists
- nursing
- safety procedures
  - pre and post-injection assessments
  - time and identifier bar codes
  - pharmaceutical GMP
  - emergency protocols



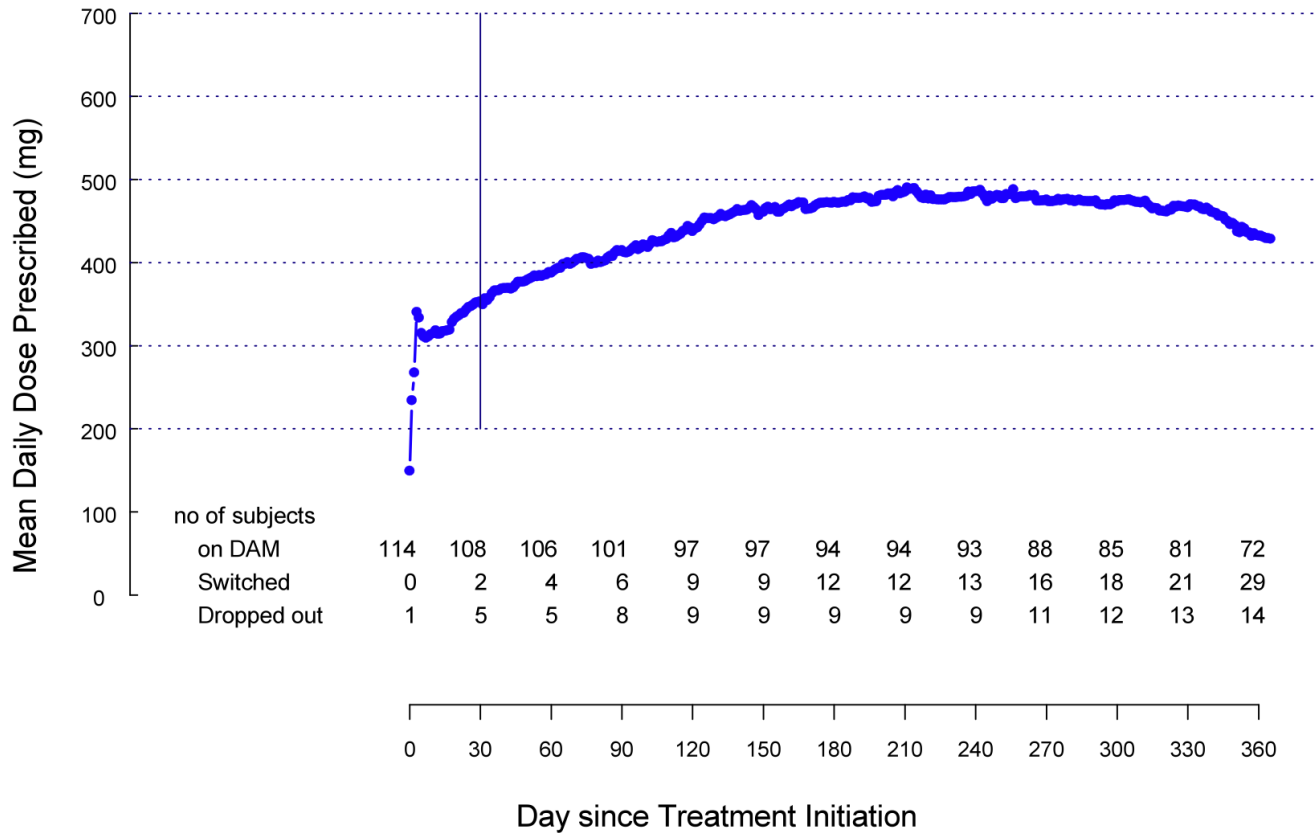
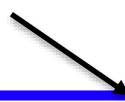
- 109,171 treatment injections
- common expected side effects:
  - drowsiness
  - local histamine reaction (itchiness, pins and needles)
- only 13 episodes of serious over-sedation
  - 1 per 8,400 injections
  - treated on site with O<sub>2</sub> and naloxone
  - no hospitalizations; no lasting effects
  - often associated with benzodiazepines

# Questions about Injectable Opioid Treatment

1. Can this be done safely?
2. Won't drug users want ever higher doses?



Maximum dose = 1000 mg



Average Daily Dose of DAM

# Questions about Injectable Opioid Treatment

1. Can this be done safely?
2. Won't drug users want ever higher doses?
3. How can we possibly afford this?

# Cost Considerations

- Dutch findings:
  - program costs more
  - decreased crime, enforcement, medical costs
  - overall savings: 12,793 euros (p.p. per year)
- NAOMI Cost-effectiveness Evaluation
  - about \$23 per day for DAM treatment
  - dominant strategy – better outcomes, lower cost
- SALOME Cost-effectiveness Evaluation
  - about \$23 per day for DAM treatment
  - dominant strategy – better outcomes, lower cost

# Cost utility analysis of co-prescribed heroin compared with methadone maintenance treatment in heroin addicts in two randomised trials

Marcel G W Dijkgraaf, Bart P van der Zanden, Corianne A J M de Borgie, Peter Blanken, Jan M van Ree, Wim van den Brink

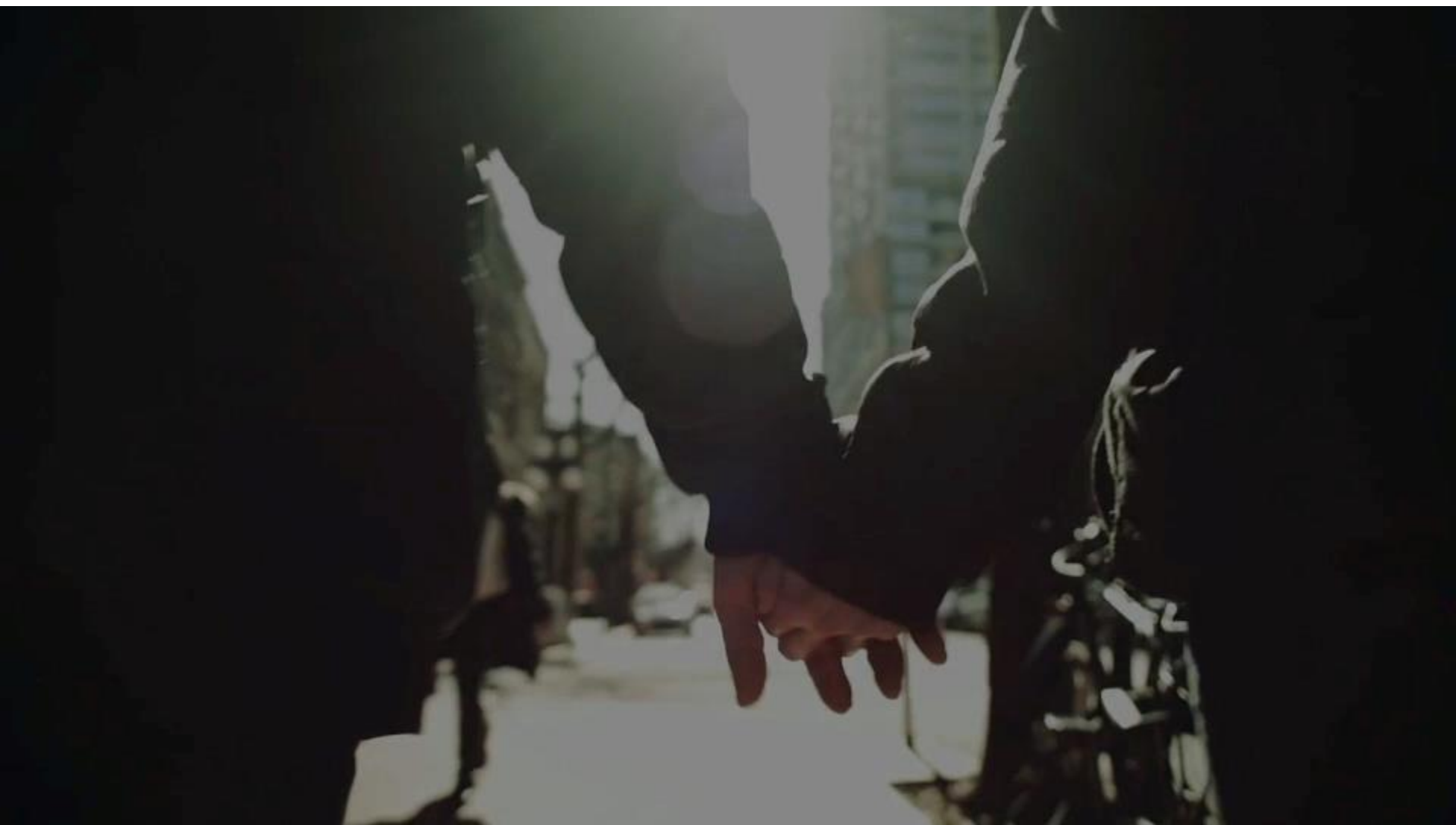
## **Cost-effectiveness of diacetylmorphine versus methadone for chronic opioid dependence refractory to treatment**

Bohdan Nosyk PhD, Daphne P. Guh MSc, Nicholas J. Bansback PhD, Eugenia Oviedo-Joekes PhD, Suzanne Brissette MD, David C. Marsh MD, Evan Meikleham MSc, Martin T. Schechter MD PhD, Aslam H. Anis PhD

# Cost-effectiveness of hydromorphone for severe opioid use disorder: findings from the SALOME randomized clinical trial

**Nick Bansback<sup>1,2</sup> , Daphne Guh<sup>1</sup>, Eugenia Oviedo-Joekes<sup>1,2</sup>, Suzanne Brissette<sup>3</sup>, Scott Harrison<sup>4</sup>, Amin Janmohamed<sup>1</sup>, Michael Krausz<sup>1,5</sup>, Scott MacDonald<sup>4</sup>, David C. Marsh<sup>6</sup>, Martin T. Schechter<sup>1,2</sup> & Aslam H. Anis<sup>1,2</sup>**

Centre for Health Evaluation and Outcome Sciences, Providence Health Care, St Paul's Hospital, Vancouver, British Columbia, Canada,<sup>1</sup> School of Population and Public Health, Faculty of Medicine, University of British Columbia, Vancouver, Canada,<sup>2</sup> Centre de Recherche du Centre Hospitalier de l'Université de Montréal, Montréal, Québec, Canada,<sup>3</sup> Providence Crosstown Clinic, Providence Health Care, Vancouver, British Columbia, Canada,<sup>4</sup> Department of Psychiatry, University of British Columbia, Vancouver, Canada<sup>5</sup> and Northern Ontario School of Medicine, Sudbury, Ontario, Canada<sup>6</sup>



**Thank you for your attention**





Heroin

# The Harms of Opioids

## Harm

---

euphoria/sedation

withdrawal

constipation

flushing

overdose and death

viral infections

bacterial infections

violence

illegal activity

social disintegration

---



# Harm

The Drug?

The Circumstances?

---

euphoria/sedation

X

withdrawal

X

constipation

X

flushing

X

overdose and death

X

viral infections

X

bacterial infections

X

violence

X

illegal activity

X

social disintegration

X



### Societal Additives

crime, prison, violence, disorder,  
disintegration, hospitalization,  
infection, death.....

**Remove the  
Societal  
Additives**

### Physical Additives

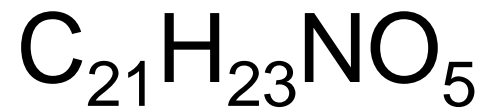
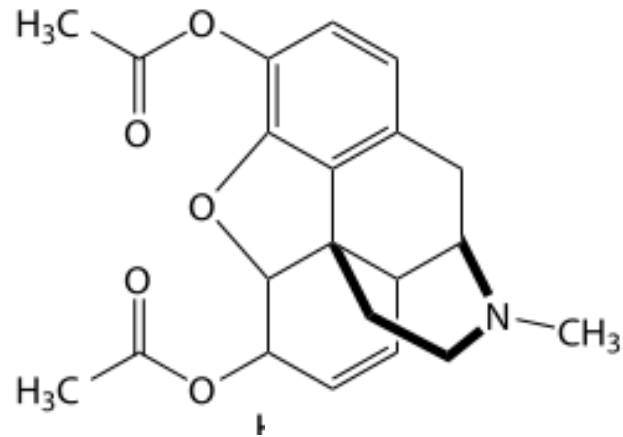
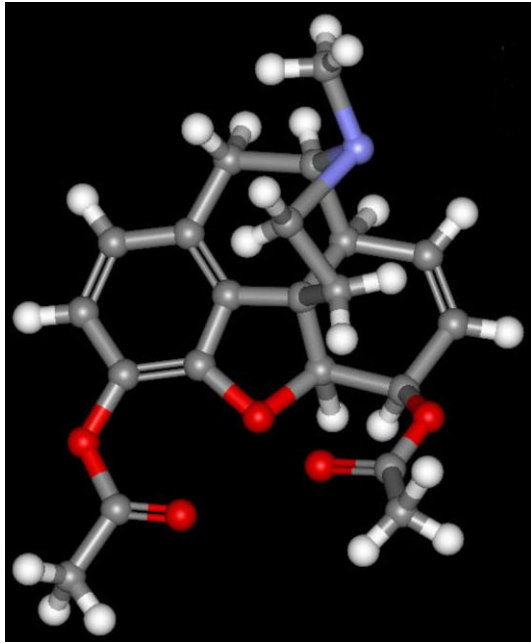
fentanyl, starch, icing  
sugar, puddle water.....

**Remove the  
Physical  
Additives**

**What would be left?**



Heroin



Diacetylmorphine  
or  
Diamorphine





# Heroin



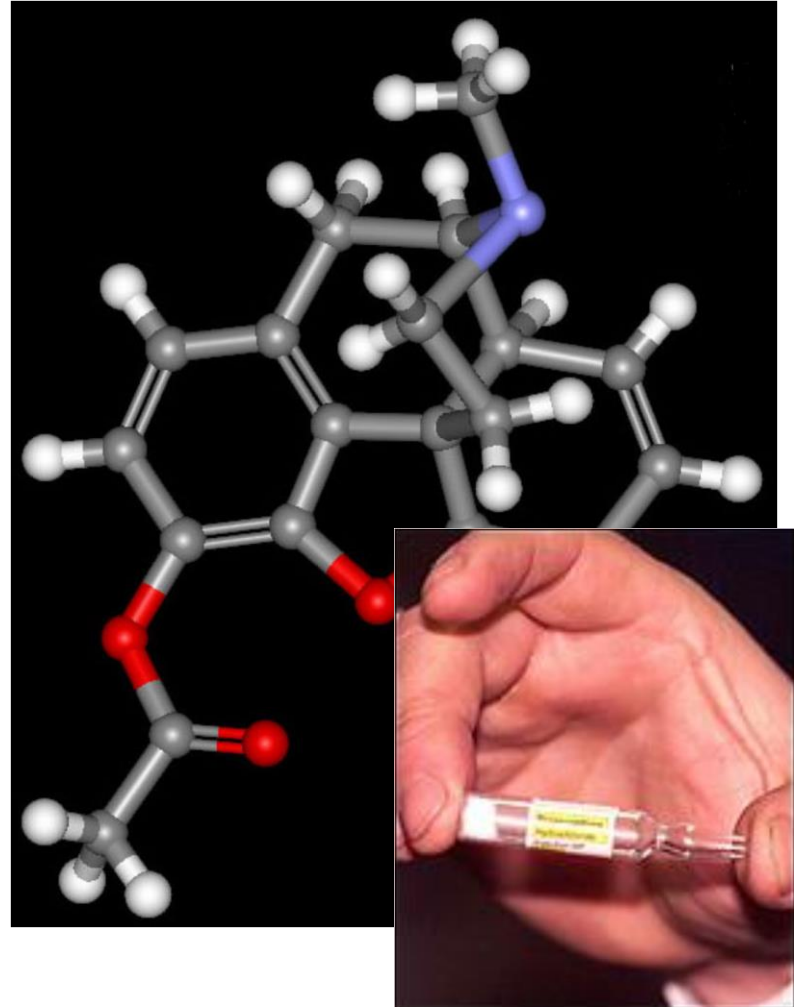
**dangerous street drug**

# Heroin



**dangerous street drug**

# Diacetylmorphine



**medicine**



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\* marketing name from the German "*heroisch*" for "heroic, strong"



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                  } OFFICE, 287

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