

Diamorphine Assisted Treatment (DAT)

Prescribing diamorphine for people suffering
from Opioid Use Disorder (OUD)



Drug Science was formed by a committee of scientists with a passionate belief that the pursuit of knowledge should remain free of all political and commercial interest.

Founded in 2010 by Professor David Nutt, following his removal from his post as Chair of the Advisory Council on the Misuse of Drugs, Drug Science is the only completely independent, science-led drugs charity, uniquely bringing together leading drugs experts from a wide range of specialisms to carry out ground-breaking research into drug harms and effects.

The Drug Science mission is to provide an evidence base free from political or commercial influence, creating the foundation for sensible and effective drug laws.

Equipping the public, media and policy makers with the knowledge and resources to enact positive change. Drug Science want to see a world where drug control is rational and evidence-based; where drug use is better informed and drug users are understood; where drugs are used to heal not harm.



The mission of the Society is to broaden and promote the scientific understanding of addiction, and we particularly aim to help clinicians and policy makers get research evidence into practice.

We support education, training and development of individuals in the field. We disseminate research via our journals, conferences and by supporting third-parties' projects and conferences; also, via our website and social media.



Opioids

✓ **Opioids act on opioid receptors in the brain to produce morphine-like effects i.e.**

- Feelings of euphoria
- Pain relief
- Drowsiness

✓ **Opioids can be prescribed or sourced illegally on the street**

✓ **Opioids can be natural or synthetic**

Examples = morphine, codeine, opium fentanyl and heroin [1]



Opioid Use Disorder (OUD)

“the chronic use of opioids that causes clinically significant distress or impairment”.

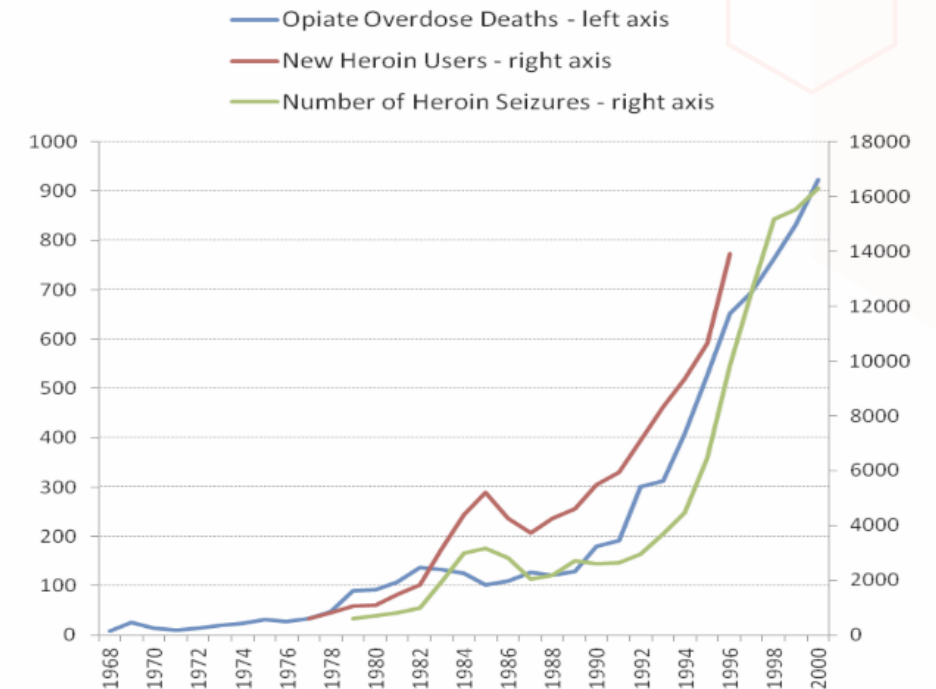
Those with OUD:

- have difficulties **keeping consistent work**
- are more likely to **commit crime** to fund their self-medication fuelling illegal drug markets [3]
- are more likely to **have mental and physical health problems** i.e., sharing needles increases risk of human immunodeficiency virus (HIV), hepatitis B.... [22][28]

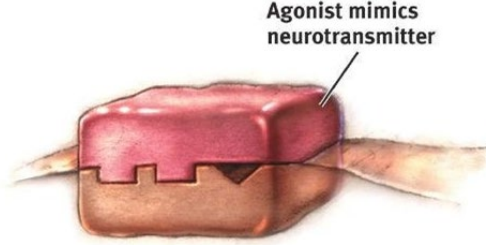
UNODC World Drug Report 2021 states the number of opiate users worldwide has **nearly doubled since 2010. The UK has the largest reported opioid-using population in Europe [30]**

UK rates of deaths involving opiates have been trending upwards. 2020 rates were **4.8% higher than in 2019 and **48.2% higher than in 2010** [6]**

Figure 64: Available Indicators Showing the Magnitude of the Heroin Epidemic

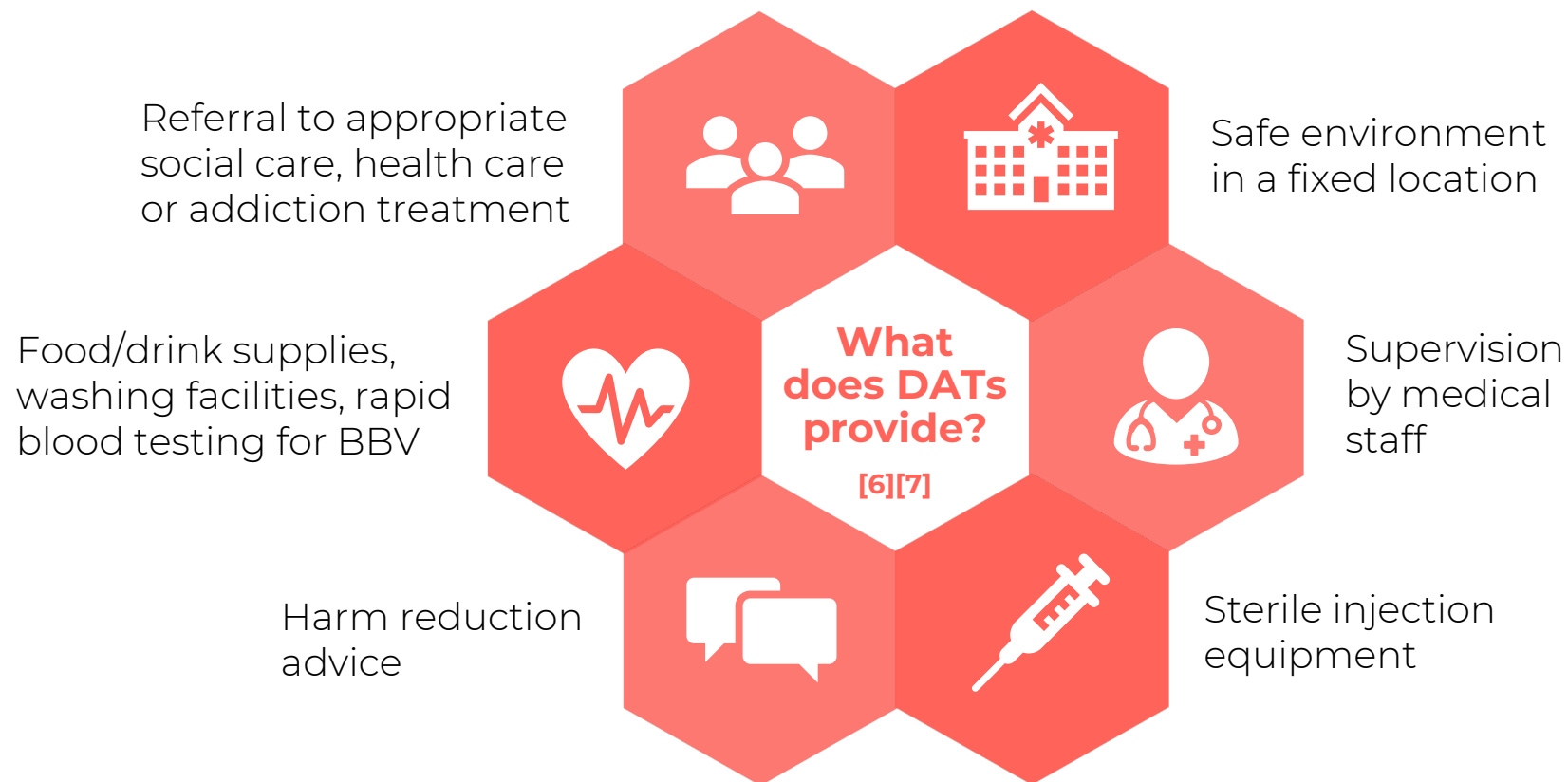


What's the difference between treatments for Opioid Use Disorder? [25]

Supervised Injection Facilities	Methadone/ Buprenorphine Maintenance Treatments	Diamorphine Assisted Treatment
<p>People bring their own pre-obtained 'street drugs' and consume them in a sanitary environment and with medical support available.</p>	<p><i>Opioid-receptor agonists</i></p> <p>Replicates opioid by blocking receptors, preventing the effects of opioid use for a short amount of time</p>  <p>The diagram shows a red, rectangular pill with a white line across its middle. A label 'Agonist mimics neurotransmitter' has a line pointing to the pill.</p>	<p>People are prescribed diamorphine and inject themselves with the purified drug. The diamorphine is prescribed by a doctor, therefore this service is legal.</p>

Diamorphine Assisted Treatment

The prescription and provision of hygienic, medical grade diamorphine to patients in a clinical set-up, patients attend a clinic once or twice a day depending on individual needs.



Diamorphine vs Street Heroin

Diamorphine is medical grade heroin, that's chemically identical, just purer and free of adulterants [2].

Other names for this service include:

HAT - Heroin Assisted Treatment

IOT - Injectable Opioid Treatment

How does DAT prevent overdoses and reduce health complications?

Street heroin varies wildly in strength [4]

- Reduces risk of overdose - As a weak dose of street heroin might convince someone with OUD to use a much higher dose next time to achieve the desired effect. Carefully measured doses of medical-grade diamorphine removes this inconsistency and risk of contamination. Furthermore, by monitoring a patients dosing needs, it allows patients the opportunity to reduce their dosages between uses.
- If someone does experience an overdose, trained staff are there to help with immediately effective treatments i.e. **Naloxone**. ←
- Street heroin is often consumed using dirty/shared needles. [6][28] This puts people at risk of abscesses, heart problems, HIV, hepatitis...Many infections caused by injection heroin use, result in hospitalisation and long-term health problems.

Naloxone

Blocks the effect of opioids (e.g heroin) to rapidly reverse an opioid overdose

What's are the aims of DAT?

[6] [7] [12] [14] [15] [16] [19] [24] [26] [22][23]



Reduce crime

6+ months of DATs, saw a significant reduction in involvement in crimes as i.e., supply no longer needs to be funded by the individual with OUD Access to DAT defunds illegal drug markets and prevents diversion of prescribed heroin to the illicit market.



Improve community cohesion

by addressing problematic drug use. This can also benefit the surrounding community by reducing drug related litter and the visibility of public drug use.



Reduce drug related health complications

Reduced wounds, infections and transmission of Bloodborne Viruses BBV.



Provide an alternative treatment option

for people who have tried other interventions that have not been effective.



Increase contact

Increases engagement and access to addiction treatment services.



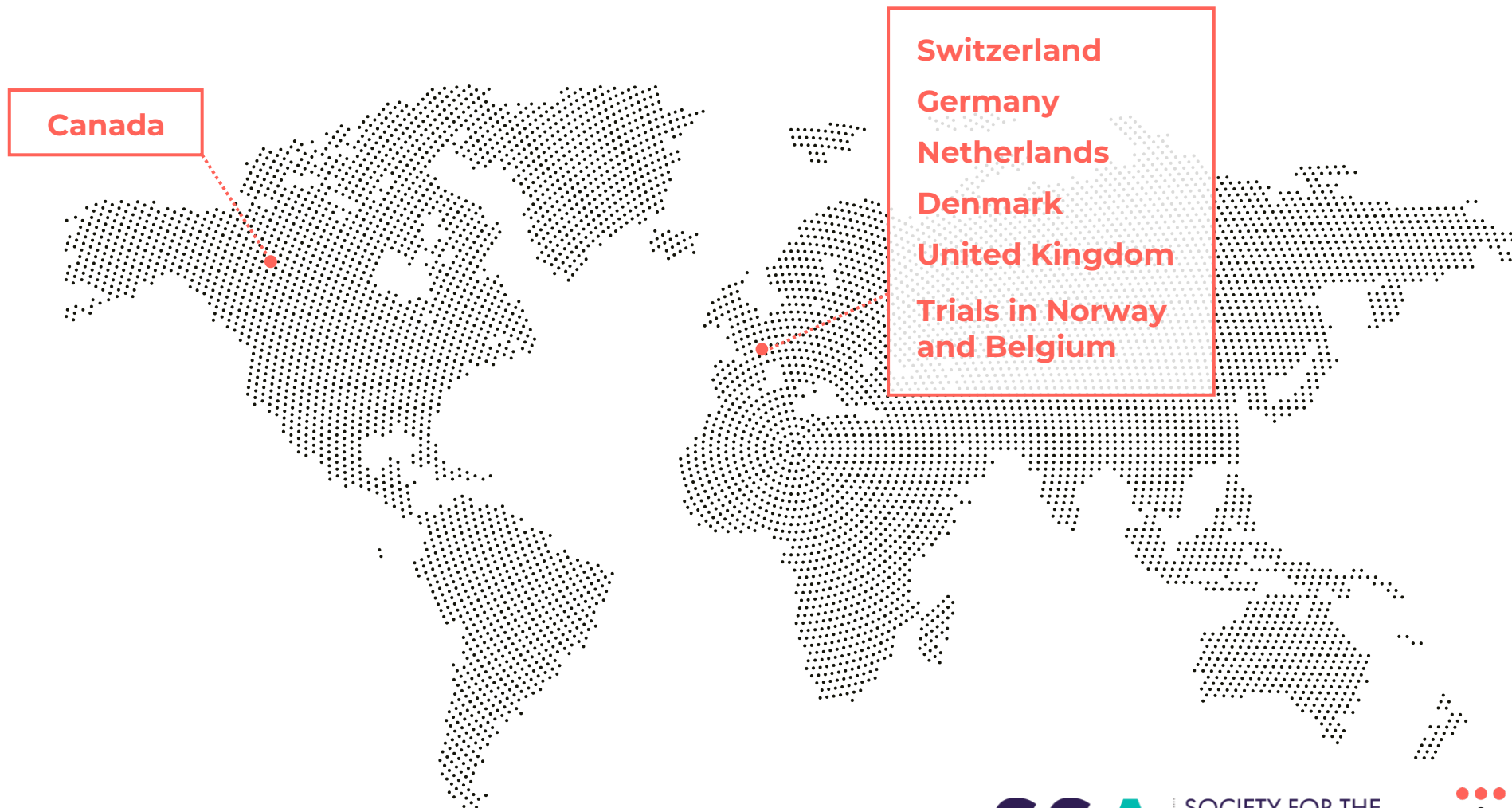
Improve social stability

DAT has also been proven to be associated with higher social functioning.



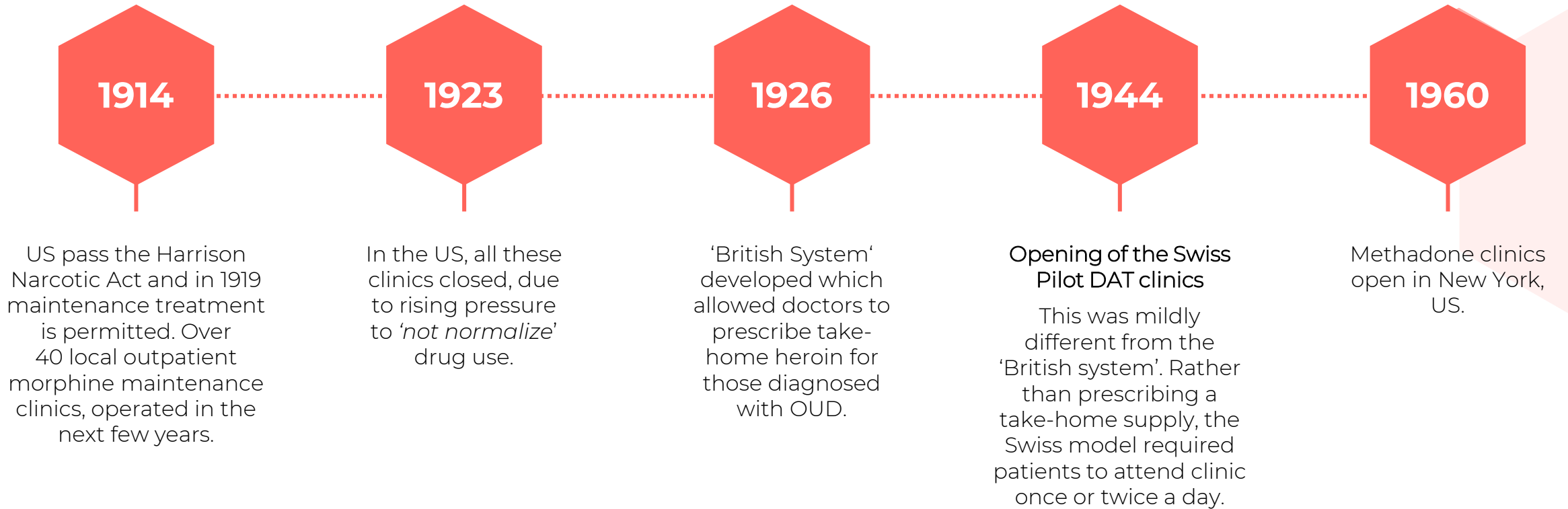
Saves lives by preventing overdoses.

Current DAT Locations Worldwide



Brief recent timeline of DAT developments

[5][6][29]



Brief recent timeline of DAT developments

[5][6][29]

1971

Introduction of Misuse of Drugs Act. Move towards increasing abstinence through prevention and treatment clinics. This also led to a reduction in take home heroin wasn't successful. Drug overdose deaths and dependence on heroin started drastically increasing. This led to many health-related complications and financial implications at a societal level.

1983

John Marks opens maintenance clinic in the in the Northwest of England.

1994

Switzerland conducting large-scale trials to show effectiveness of DAT which motivated other countries to adopt the model.

2009

The UK opened three successful pilot NHS supervised injecting clinics in London, Glasgow and Brighton.

2021

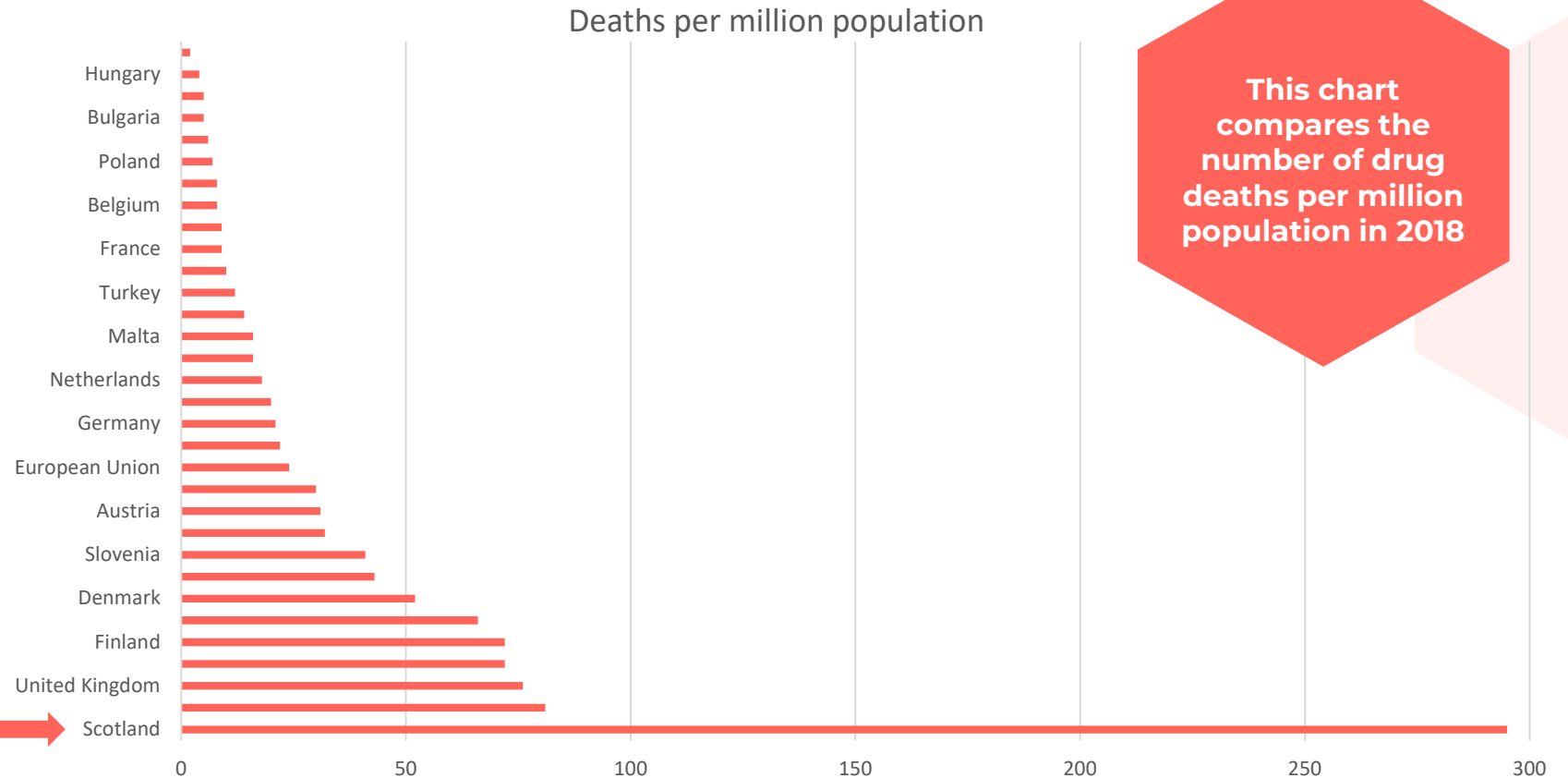
Scottish government announced its intention to take this initiative nationwide.

How do drug-related death rates compare between countries in Europe?

Data is from [EMCDDA](#). This data shows us 'Deaths per million population'.

Data for most countries is from 2018, apart from the 'UK-wide' figure which is from 2017 and is reflective of drug-related deaths in England, Wales and Scotland (not inclusive of Northern Ireland). Data shown for Scotland is from 2018. [30]

Highest drug-related death rate in Europe



This chart compares the number of drug deaths per million population in 2018

Case Study – Middlesbrough^[17]

- Launched in 2019 and is part funded by Cleveland's Office of Police and Crime Commissioner, using money seized from criminals under the Proceeds of Crime Act. Led by Daniel Ahmed.
- For people with long-term dependency on heroin, who have not responded to traditional drug treatments such as methadone in the past.
- They collaborate with local mental health teams and treat the patients like victims as opposed to criminals in the "War on Drugs", in an attempt to reduce stigma associated with intravenous drug use.



Results with 1 year of DATs (n=6)

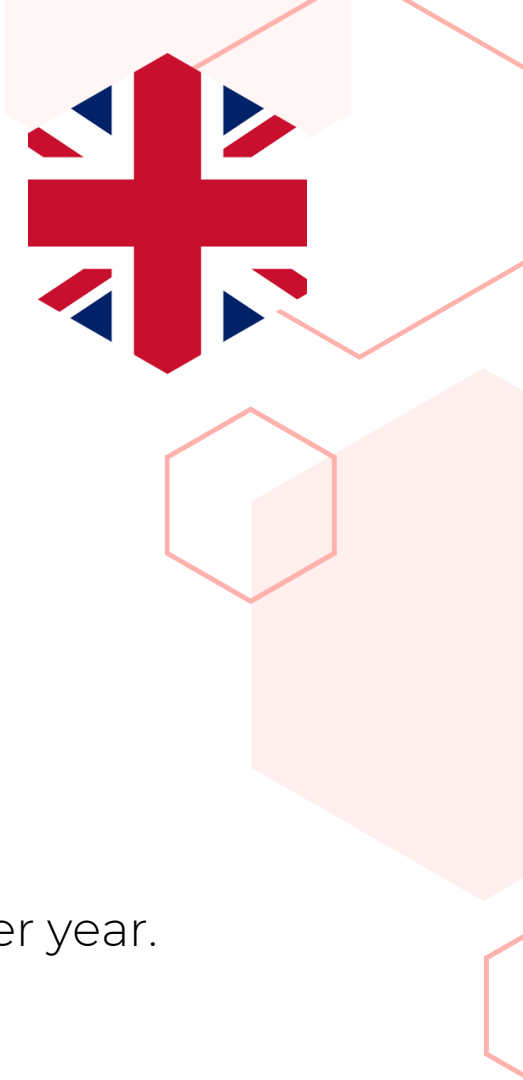
quality of life
improved by 200%

attendance rates
equalled 98%

use of illegal
opioids reduced by
almost 98%

overall substance
use has gone
down by 48%

Evidence For DATs – United Kingdom



Evidence from British Randomised Injecting Opioid Treatment Trial (RIOTT trials) (Kings Health Partners, 2009) ^{[19][20][21]}

Participants

40 patients surveyed after 6 months of treatment

- Self-reported crime **dropped two-thirds**.
- Spending on illegal drugs dropped from **£300 to £50 a week**.
- Cost of treatment for “difficult to treat” group is around £15,000 per patient per year.

Evidence from Glasgow NHS (2017) ^[9]

- Reductions in HIV related healthcare, put savings to the public purse at more than £940,000 annually.

Evidence For DATs – Spain



Evidence from Spain Andalusia trial (2006) (March et al, 2006) [31]

Participants

Sixty-two opioid-dependent participants

Interventions

Experimental group received injected diamorphine, 2x day, plus oral methadone, once a day, for 9 months. Control group received only oral methadone, once a day.

- Injected diamorphine plus methadone was more efficacious than methadone alone.
- Diamorphine group showed 2.5x improvement in terms of physical health, and 1.6x improvement in terms of risk behaviour for HIV infection.
- Reduced use of street heroin and less contact with the illicit drug milieu and use of shared needles.
- Reduced involvement in crime.
- No differences were observed between the groups regarding psychosocial and quality-of-life variables.

Evidence For DATs – Switzerland



Evidence from Swiss Trial (1998) 6 years after treatment (Guttinger et al., 2003) [8]

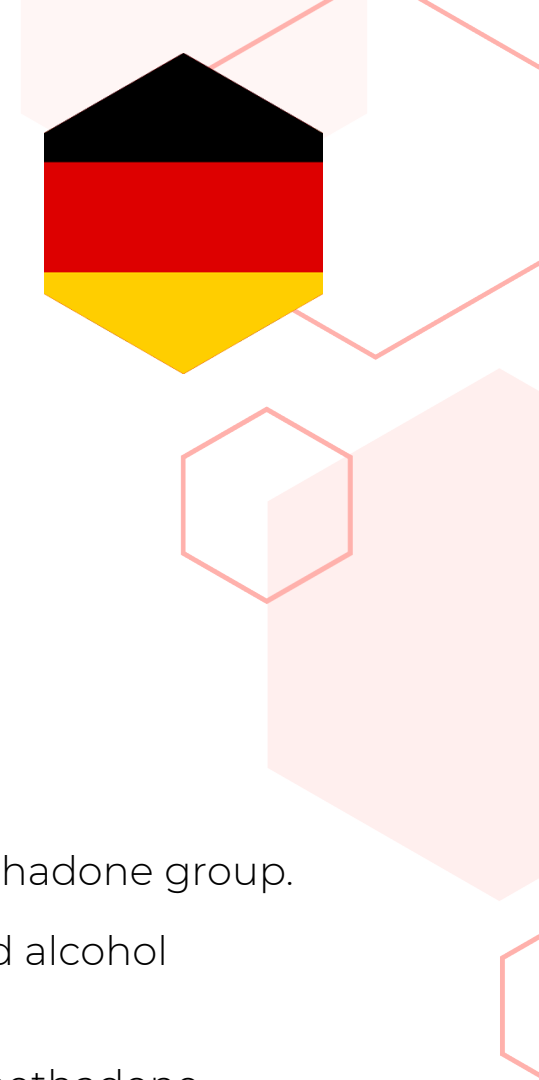
Participants

366 individuals receiving treatment at 1 of 8 treatment centres. A follow-up was conducted 6 years after treatment entry. Two groups were assessed: clients who have continuously been on heroin-assisted treatment since entry into the PROVE study or who re-entered this treatment, and ex-clients who had discontinued heroin-assisted treatment at the time of follow-up.

After 6 years

- 10% completely abstinent of opioids.
- Significant decrease in the use of illegal substances, illegal income and most other variables concerning social conditions.
- The proportion of (almost) daily consumers of illegal heroin decreased from 81% to 6%.
- homelessness amongst this cohort almost disappeared.

Evidence For DATs – Germany



Evidence from Guillery et al (2021) [27]

Participants

- 85 outpatients on maintenance treatment with diamorphine.
- 126 outpatients on maintenance treatment with methadone/levomethadone.
- Self-reported satisfaction with the substitute drug was higher in the diamorphine group.
- Diamorphine group reported significantly less craving.
- Diamorphine group also reported fewer relapsing behaviours with illicit drugs than the methadone group.
- A higher percentage of diamorphine patients than methadone patients reported decreased alcohol consumption since entering therapy.
- Analysis found that DATs produced a net savings balance (€5,966) per patient per year, vs methadone treatment alone (minus €2,069) due to its inability to substantially reduce crime and criminal justice system costs.

What are the concerns regarding DAT?



Normalising drug use

A common misconception about DATs, is that it will increase the percentage of people suffering from OUD as it can be administered safely, which could possibly encourage opioid use to someone who would otherwise be put off. This stems from a misunderstanding about decision making. An individual with OUD is not going to decide whether to use heroin based on the environment, the decision has already been made. DAT just provides a safer space to consume it.



Cost effectiveness

Concern that DAT isn't cost-effective because it's more expensive than other available treatments for the same condition

However, there is evidence for need, i.e., Glasgow NHS found DAT clinics could save > £940,000 annually in reduced health and social costs. DATs may reduce the prevalence of blood borne infections like HIV, which have a lifetime treatment cost around £360k per person.

[24]

DAT contributes to reductions in crime related costs such as police time. [6]



Geographic bias

Implementing DATs widespread is currently not feasible, which limits the amount of people receiving treatment. To overcome this barrier, geographic information is being gathered to establish which communities would benefit the most from a DAT clinic.



Limited opening times

Clinics have standard opening and closing times which means people who inject multiple times a day, have inconsistent help. The patient's pattern of injecting may not fit neatly into these times.

Users who are employed, may find it difficult to work around the clinic's opening times.

Why do we need to collect evidence about the efficacy of DAT in the UK?

Further research is needed to build a UK evidence-base of the efficacy of DAT in reducing drug-related harm to support legal reform. Evidence should include:

- ✓ The cost-based effectiveness of DAT
- ✓ Effect on the number of injection-related wounds
- ✓ Effect on overdose deaths
- ✓ Effect on bloodborne diseases
- ✓ Referral to drug treatment services
- ✓ Effect on public drug use and litter
- ✓ How DATs influences drug taking practices

Conclusion

- DAT can be a valuable form of treatment for those dependent on opioids, this is especially relevant to the people who are resistant or intolerant to other forms of substitution treatment.
- DAT has implications on drug related policies; reducing health risks on a physical, mental and psychobiological level. Thus, DATs also has the potential to reduce global health care expenditures.
- DAT can also play a pivotal role in defunding illegal drug markets and organized crime groups.



While many research studies highlights the efficacy of DAT, concerns do exist. People in all contexts including; general public, clinicians, research scientists and policy makers stand divided when it comes to making a unilateral decision on DAT.

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