DRUG & ALCOHOL ACTION TEAM Cornwall and Isles of Scilly Promoting Recovery





Nitazenes and Contamination of Heroin

issues and responses

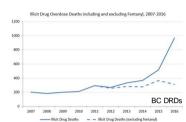
As these new substances have a rapidly evolving evidence base, this briefing will be revised as new intel emerges. The most up to date version can be found on the Safer Cornwall website.

Revised May 2024

An Inter-Continental Starting Point



- American opioid crisis intersection of following key issues: Overprescribing of Oxycontin leading to significant dependency
 - FDA restrictions on Oxy pushed people towards street drug market
- initially imported fentanyl saturated market and then Mexican cartels start to manufacture own fentanyls from imported precursors
- Restrictions in access to harm reduction measures and drug treatment on a state by state basis affected level of



fatalities

- Our starting point is different:
 - not the same high level of prescribed opioid dependency
 - 95% of our street heroin was Afghani brown heroin
 - the fentanyls did start to appear on the UK market sometimes sold as "china white" or appearing as a cut in heroin but not at a significant level.
 - so we hadn't seen the same level of fatalities in the UK drugs market...



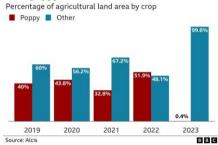
| • | | | | | | | | | | | | | |
|--------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| | 2022 | 2021 | 2020 | 2019 | 2018 | 2017 | 2016 | 2015 | 2014 | 2013 | 2012 | 2011 | 2010 |
| Fentanyl | 57 | 58 | 57 | 59 | 74 | 75 | 58 | 34 | 40 | 22 | 22 | 31 | 10 |
| Fentanyl analogues | 0 | 3 | 2 | 1 | 31 | 31 | 1 | 1 | 0 | 0 | 2 | 0 | 0 |

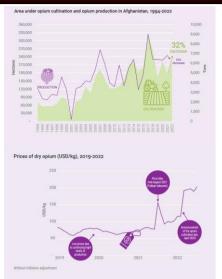
Heroin shortage





How poppy cultivation in Helmand has fallen





3

What happens as heroin purity drops?



The emergence of novel opioids hasn't in the past in the UK been enough to create a tilt away from "traditional" heroin markets.

But the combination of reduced production and increased cost of brown heroin in Afghanistan PLUS Brexit impeded smuggling routes PLUS high potency/low weight synthetics could represent a tipping point.

Increased production in Asia (e.g. Myanmar won't significantly impact the UK market in short term so production drop in Afghanistan likely to have a sustained impact in UK.

Increased risk of OD

- · Increased importation of synthetic opioids to fill gap
 - increase in nitazenes
- · Increased adulteration cut with benzos, xylazine
- Drop in purity of heroin in UK already observed
 - some areas there is no diamorphine in the "heroin."
- Increased polydrug use
- Shift from smoking to injecting some reports that "brown" isn't smoking well
- · more injecting complications observed
- Switch to other substances Spice, "Dust" noted in some areas
- (catalyst for accessing treatment)

Nitazenes

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"Nitazenes" are a family of drugs called **benzimidazole opioids**They are derived from **benzimidazole**

1950s – developed by CIBA but never taken to market

2019 Isonitazene in drugs and post OD toxicology in Europe and North America

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The ACMD report on Nitazenes says:

"The benzimidazole ring structure is, however, also found in a wide range of human and animal medicines...

The 2-Benzyl benzimidazoles are synthetic opioids and can be prepared in only a few steps from readily available, uncontrolled precursors."

This makes the family of drugs much harder to regulate as the core structure and precursors are harder to control.

In the UK the benzimidiazole opioids already identified and possible likely analogues were brought under the Misuse of Drugs Act in April 2024.

N-desethyl Isotonitazene

"...a <u>study</u> in rats found...N-desethyl isotonitazene provided pain relief at a dose nearly ten times smaller than that needed for fentanyl, and around 1,400 times less than that for morphine, to see the same effect. N-desethyl isotonitazene causes <u>apnea</u> (where breathing stops) at about a third of the dose of fentanyl. It also takes much longer to recover normal breathing after N-desethyl isotonitazene (208 minutes) compared with fentanyl (67 minutes). One must assume, therefore, that some nitazenes may have the potential to be more deadly than fentanyl and heroin."

https://theconversation.com/nitazenes-synthetic-opioids-more-deadly-than-fentanyl-are-starting-to-turn-up-in-overdose-cases-212589

5

Longer duration and increasing potency

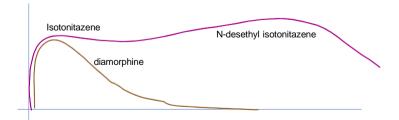
Isotonitazene produces a long acting metabolite **N-desethyl isotonitazene** which is in highly potent (possibly more so than the parent drug) and so overdoses may not be rapid – and the period which a casualty may be unwell is longer than for other drugs.

meaning the Overdose risk window is far longer...

but we are not entirely clear how long.

Implications:

- · may be thought to be OK in the initial lower intoxication phase
- supervise for longer after OD revival
- Significantly higher risk of re-overdosing much later longer window for overdose risk in hostels/custody/peer education settings



Relative potency of key opioid agonists



| Drug | AKA | Potency (x morphine) | Law | | | | | |
|--|---------------------|----------------------|----------------------------------|--|--|--|--|--|
| Codeine | | 1/10 | CD: PM/POM (depends on strength) | | | | | |
| Tramadol | | 1/10 | CD:POM | | | | | |
| Dihydrocodeine | (DF118) | 1/5 | CD: PM/POM (depends on strength) | | | | | |
| Pethidine | | 1/3 | CD:POM | | | | | |
| Morphine (oral) | MST, Oramorph | 1 | CD: PM/POM (depends on strength) | | | | | |
| Flunitazene | | 1 | | | | | | |
| Oxycodone Oxycontin | | 1.5-2 | CD:POM | | | | | |
| Morphine (IV) | | 3 | CD:POM | | | | | |
| Methadone Physeptone | | 3-4 | CD:POM | | | | | |
| Diamorphine | Heroin | 4-5 | CD:POM | | | | | |
| Hydromorphone | Palladone | 5 | CD:POM | | | | | |
| Desomorphine | "Krokodil" Permonid | 8 | CD | | | | | |
| Oxymorphone | | 7 | CD/POM | | | | | |
| Acetyl fentanyl | | 15 | CD | | | | | |
| Buprenorphine | Subutex, Temgesic | 40 | CD:POM | | | | | |
| Etazine | | 70 | CD | | | | | |
| Protonitazene | | 130 | | | | | | |
| Isotonitazene | | 500 | CD | | | | | |
| Fentanyl | Duragesic | 50-100 | CD:POM | | | | | |
| Etonitazepipne | | 100 | CD | | | | | |
| Metonitazene | | 1000 | CD | | | | | |
| N- Desethyletonitazen | e | 1000 | CD | | | | | |
| Etonitazene (N-pyrrolidino | etonitazene) "Pyro" | 1000 | CD | | | | | |
| (Etorphine) Wildenil | | 1000-3000 | CD/POM | | | | | |
| 3-methyl fentanyl | | 6000 | CD | | | | | |
| (Carfentanil) | | 10,000-100,000 | CD/POM | | | | | |
| https://en.wikinedia.org/wiki/l.ist.of_henzimidazole_onioids | | | | | | | | |

https://en.wikipedia.org/wiki/List_of_benzimidazole_opioids

7

Relative Potency



Street diamorphine at 20% purity

£10 bag = 100mg 20% purity= 20mg



Isonitazene is 500 x oral morphine so 100x IV diamorphine

20mg (20,000mcg) diamorphine IV = 200mcg IV isonitazene (0.2mg) A poppy seed weighs 300mcg

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So the equivalent dose of £10 brown heroin at 20% pure would be a little less than the size of a poppy seed if it were pure isonitazene.

Imported diamorphine at 80% - 1kg = 800g diamorphine

Same quantity in terms of Isonitazene: 8g of Isonitazene Same quantity in terms of Etonitazene: 4g of Etonitazene

Supply cost profit













A crisis for prisons?

1g isonitazene = 500g morphine = 100g pure heroin

= 500g of "street heroin" at 20%

In prison 1g smuggled in would need to be diluted with 0.5kg of bulking agent to make it lower risk Without scales and without a mixer. Which leaves dangerous hotspots.

10g costs £600 10g = 1kg pure diamorphine (1000g) 1000g = 5kg "brown" @ 20% purity 5000g = 50,000 £10 bags £500,000

9

Known Fatalities



- · 24 deaths attributed to Isonitazene in 2021 [acmd]
- ONS reports 39 "Novel Opiate" drug related deaths in 2022
- NCA cites "54 deaths in six months to December 2023" and a possible implication in 40 other cases under investigation
- Clusters of fatalities in UK and Ireland; e.g. 16 reported in Birmingham
- Unclear number of non-fatal overdoses
- Some fatalities and non-fatal overdoses may have been incorrectly attributed to fentanyl

Recent Scottish ODs





*Provisional data: 1 July to 30 Sep 2023 Source: Scottish Police Authority Forensic Services and other UK laboratories Forensic Medicine and Science (University of Glasgow) Department of Clinical Biochemistry at NHS Grampian

11





Key HR messages



- Ideally use with company...
 - or a place you will be found
 - or using a "buddy app" if no alternative
- Ensure Naloxone and a phone is to hand
- Always call an ambulance and use naloxone if opioid OD suspected
- Don't use depressant drugs in combination if possible but be aware it may be premixed in what you bought;
- Sample or use low dose from new batches
- Change route if you can smoke instead. There is still a significant risk of fatal overdose with smoking and snorting but it may reduce risk to a degree.
- · Be aware of hot-spots
 - mixes of coarse and fine powders will never be even; a bag won't have an even mix in it so will vary in strength
- · Don't use at the same time in groups
 - ideally have a sober sitter
- Share negative experience or unusual experiences with pe
- (use test strips won't detect all analogues)
- (send samples to Wedinos)



13

Taking care with messages



- · Avoid possibly promotional terms like "high strength" "strong" or "potent"
- "Warning: potent batch of heroin found in..." promotional
- "Warning dangerous contaminant in local heroin may have caused recent deaths and hospitalisation" stresses risk
- · Focus on
 - risk (wounds, OD, fatalities)
 - harm reduction (don't use alone, naloxone, treatment)
 - local relevance and timeframe
 - too many notices will lose impact; keep them local
 - keep them up as long as needed
 - speak to people don't just put posters up
 - discuss in groups
- You don't need to specify the drugs found if you do ensure it's evidenced by toxicology and not hearsay
- Too much detail can give a false sense of security
 e.g "light tan coloured heroin runs orange on foil..." can make people think their
 own batch of drugs is safe
- When circulating emails in house always link back to the source: where did this
 message come from? How reliable is it? How old is it?

Targetting Non-Opiate Users



- At present the targeting of messages and Naloxone is at opiate users.
 However we are seeing significant increase in nitazenes as a cut in street-benzos.
- Isonitazene orally is estimated at 10x potency of oral morphine (2x potency of IV diamorphine) so in itself represents a risk of OD.

In combination with benzodiazepines the risk of fatal OD is elevated.

- While people using street benzos already in contact with drug services will be aware of warning posters and have access to Naloxone, other benzo users may not be in contact with services.
 - Cascaded messages to benzo users via colleges, social media, drugs discussion groups, mental health services, GPs and public information points (libraries, health centres) are needed to reach this cohort.
- Consideration of distribution of naloxone to people who are primarily street benzo users should also be a priority even if they don't knowingly use other drugs.

15

Naloxone: nasal or IM?



Nyoxid (nasal) or Contains 1 dose x 1.8mg/dose 2 doses per distribution Prenoxad (IM) contains 5 x 0.4mg doses

There is some evidence that more doses of naloxone are required to reverse Nitazene overdoses and so Nyoxid doses may be insufficient. Further in the event of multiple casualty events 5 doses of Naloxone + two needles allows (in extreme emergency) more people to be treated.

Nyoxid is slower to achieve 50% dose than IM but longer duration; this is very double edged.

Nitazenes can cause very rapid overdose and so rapid reversal is needed. So slower nasal onset times is an issue. But given the long action of isonitazene metabolites the longer action of nasal formulations is beneficial.

Further the lack of needle/barrel with nasal removes barriers to administration and the risk that kit is missing needles when needed.

On balance where administration by injection is not a barrier, Prenoxad should be the preferred option where Nitazenes are a significant risk. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5836974/

Naloxone Distribution and Stockpiling



- The rise of synthetics is not just a UK issue but will be a pan-European issue. Therefore there will be a significant demand on Naloxone supplies and the risk of shortages;
- It would be desirable to ensure that people were given 2-3 boxes of naloxone to ensure wider coverage and greater doses were in hand;
- · Check in with those holding older kits to check that they are:
 - · accessible, intact and in date
 - resupply out of date naloxone but worth keeping older stock as backup
- Ensure distribution to partner organisations especially hostels and day centres
- Make sure multiple kits are available to manage multiple overdoses in building;
- Encourage all organisations to expand beyond "999 and Naloxone" to "999 CPR and Naloxone" and distribute resus shields and/or disposable resuscitators.

17

Route changes?



- Not enough is known about different routes of administration for Nitazenes.
- Sources indicate that they can be used orally, smoked, vaped, snorted or injected.
- At present as most people are sourcing Nitazenes inadvertently as a cut in heroin they are attempting to smoke or inject it.
 - If Nitazenes become a market drug in their own right (e.g. people sourcing "Iso") route selection may evolve and change with for example shifts to snorting or vaping.
- Proactive engagement with people using "have people tried snorting it.."
 "how do people get on with smoking it?" "Is it water soluble without an acid?"
- This will inform our understanding of what works and what can help reduce harms if Nitazenes become an established feature.

Other Contaminants and Risks



Xylazine is a pharmaceutical drug used for sedation, anesthesia, muscle relaxation, and analgesia in animals such as horses, cattle, and other non-human mammals.

Xylazine has become a drug of abuse in the United States, where it is known by the street name "trang", Is associated with skin sores and infections at injection sites.



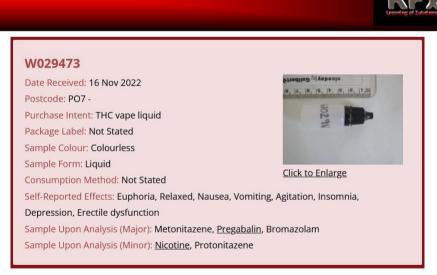
Xylazine is showing up more frequently in UK heroin (yet) but is showing up in benzo-type street tablets.

There have been some reports of a-typical wounds at injecting sites which may be xylazine-related.

In at least one case these were wrongly attributed to "Krokodil" (Desomorphine).



19



Only example of this to date. Contaminated vapes show up synthetic cannabinoids more often so this was exceptional.

But if it becomes more common need to consider locating Naloxone in schools/colleges to provide rapid response to young people vaping.

Post non-fatal incident responses



- Support for individual to ensure well-being
- · Support for those who provided help and care
- Look at opportunities for change/treatment and harm reduction
- Try and gain insight how much was used, how used, anything unusual about batch? How prepared?
- · How much naloxone required
- Any remaining drugs or syringe that could be tested?
- Cascade information to in-house working group, local groups etc

21

Developing informed local responses



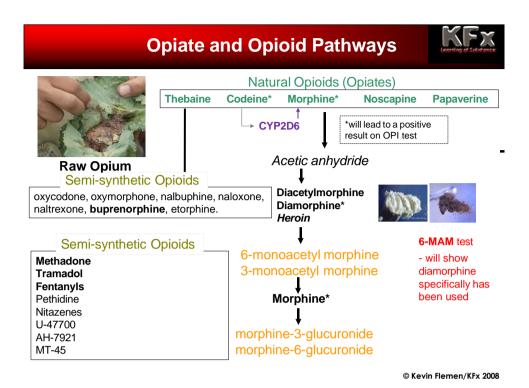


Commissioners and Drug Services could establish local response groups; Membership to include input from people who use drugs, police CD liaison officers, A+E leads, and take input from and cascade to other agencies such as hostels.

These local groups can cascade to wider national bodies such as NGOs and Third Sector organisations and to Statutory bodies such as DoH and SC.

These will help build local awareness and evidence basis, contribute to getting drugs tested, disseminate local responses and provide a credible contact point for local agencies,

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23

Drug Testing



At present:

Fentanyl can be detected using drug dip test and urine

tests. Looking for the drugs and the main

metabolite nor-fentanyl

Xylazine there is a specific marketed dip test for Xylazine

as a cut in drugs

Nitazenes dip test available for (some) Nitazenes as a cut.

Won't detect all analogues - may give false

sense of security;

Nitazenes can be detected by GC/MS analysis

As drug services don't routinely screen for Fentanyls (and they are not the most significant problem). We can't tell from standard urine screens if nitazenes have been used. Which leads us to several issues...

Testing and Treatment



Rejection for OST:

Undertraining and over-reliance on a positive OPI/6-mam screen has seen some people testing negative for OPI/6-mam after claiming heroin use/dependency.

It is possible that, in some areas the lack of morphine-derived drugs in product sold as "heroin" means a negative test is possible even though opioids have been consumed.

A negative OPI/6-mam screen should not alone be grounds for rejecting a person for OST.

In the current crisis, rapid access to OST is an important harm reduction measure.

Other markers such as clinical indicators of intoxication/withdrawal, support statements from key workers, sample drug testing and the client's own experience should be given greater consideration than a negative test result

25

Testing and Treatment



Use on top being under-reported:

As nitazenes won't show up in a standard OPI test or a 6-MAM test it leaves more scope for use on top of OST going unreported. This has been the case for novel benzos for a while but missed use on top introduces significant risk of OD and so need to be watchful for other markers for use on top.

Unknown how effective buprenorphine is against nitazenes: we know that at higher doses buprenorphine is effective at blocking opiate receptors against opioids with weaker binding potential (e.g. heroin).

But at present while we know that nitazenes have a high level of potency at opiate receptors we don't know if they have a greater affinity for receptors than buprenorphine.

If they do, then there is a reasonable chance that nitazenes will increase the risk of use on top of people prescribed buprenorphine and we should be vigilant for this risk.

Hostels and DCRs



Need rapid interventions to minimise people using alone and without support.

- Lobbying for DCRs is not going to provide the short term responses needed;
- Working with relevant hostels to ensure housing adopts high tolerance drug policies is essential
 - This will be a key element of reducing fatalities amongst vulnerably housed drug users
 - Training and joint working with hostels in overdose management
- Additional responses include wider training to publicfacing services to be aware of overdose, look for naloxone on the person and aware how to use it
- Use of Apps to support people using alone is a useful adjunct but doesn't offer support 24/7, and in a time critical overdose is likely to be too slow.



27

Trauma



Needs to be significant trauma support both for peers and workers

We are already seeing an upsurge in fatalities and sometimes multiple deaths in clusters (one locality, short time frame)

All deaths leave bereaved people and possible trauma – those who witnessed the death or tried to help

For people who are using and people in different stages of their recovery these deaths can trigger complex emotions – anger, guilt, anxiety, grief – and represent challenges to mental health and recovery.

For workers and volunteers – with or without lived experience – loss of people with whom you have worked is again traumatizing and multiple fatalities can cause significant distress.

Organisations need to ensure bereavement and trauma support is addressed both in group and 1:1 work with people using services, and for workers and volunteers who will need support too.

Looking to the future



- It's possible that Nitazenes will drop in availability but...
- · There's every chance a new synthetic will follow shortly after
- My personal view is that we won't see a significant bounce back in terms
 of heroin in the short term and so this is a step-change in UK drug
 behaviours
- If we get stability we may end up with less potent Nitazenes being used in less dangerous ways
- But we may also end up with a much more dangerous, fluctuating market
- Either way local agencies have to get better at their hyper-local responses to reduce risk. Putting a poster up can never be enough.

29

Sources of Information



Government: Local area response tp potent opioids

https://www.gov.uk/government/publications/fentanyl-preparing-for-a-future-threat/guidance-for-local-areas-on-planning-to-deal-with-fentanyl-or-another-potent-opioid

SDF Webinar (Youtube) https://youtu.be/eSDNPaW4qQ4

SDF - briefings: https://sdf.org.uk/tag/nitazenes/

ACMD review of Nitazenes

https://www.gov.uk/government/publications/acmd-advice-on-2-benzyl-benzimidazole-and-piperidine-benzimidazolone-opioids

Crew briefing: https://www.crew.scot/wp-content/uploads/2022/12/What-are-nitazenes.pdf

Wedinos: https://www.wedinos.org/

Drug Services "collective message"

https://www.changegrowlive.org/news/drugs-contaminated-synthetic-opioids-collective-message-like the contaminated of the con

HIT: https://hit.org.uk/stayin-alive/

KFX

w: www.kfx.org.uke: kevin@kfx.org.uk



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