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**ScHARR** SCHOOL OF HEALTH AND  
RELATED RESEARCH

# Drug related deaths: can clinical governance in primary care help to reduce them?

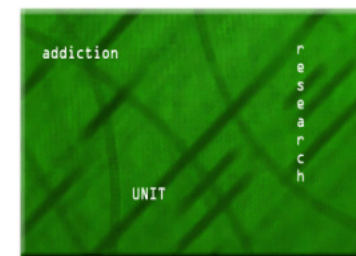
## The Sheffield Experience



INSTITUTE OF  
GENERAL PRACTICE  
& PRIMARY CARE

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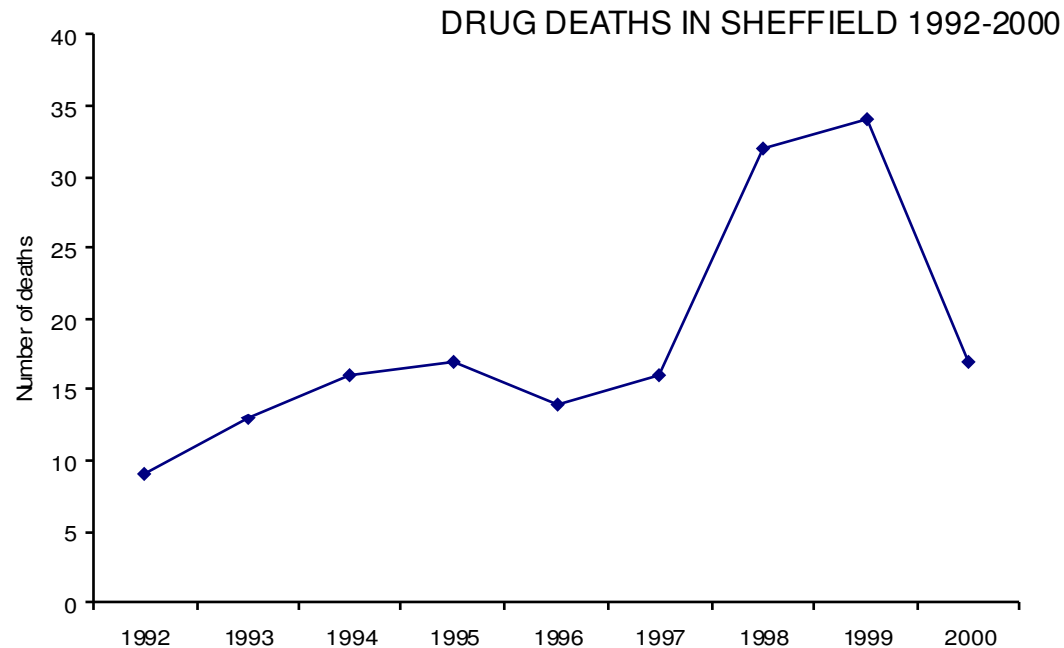
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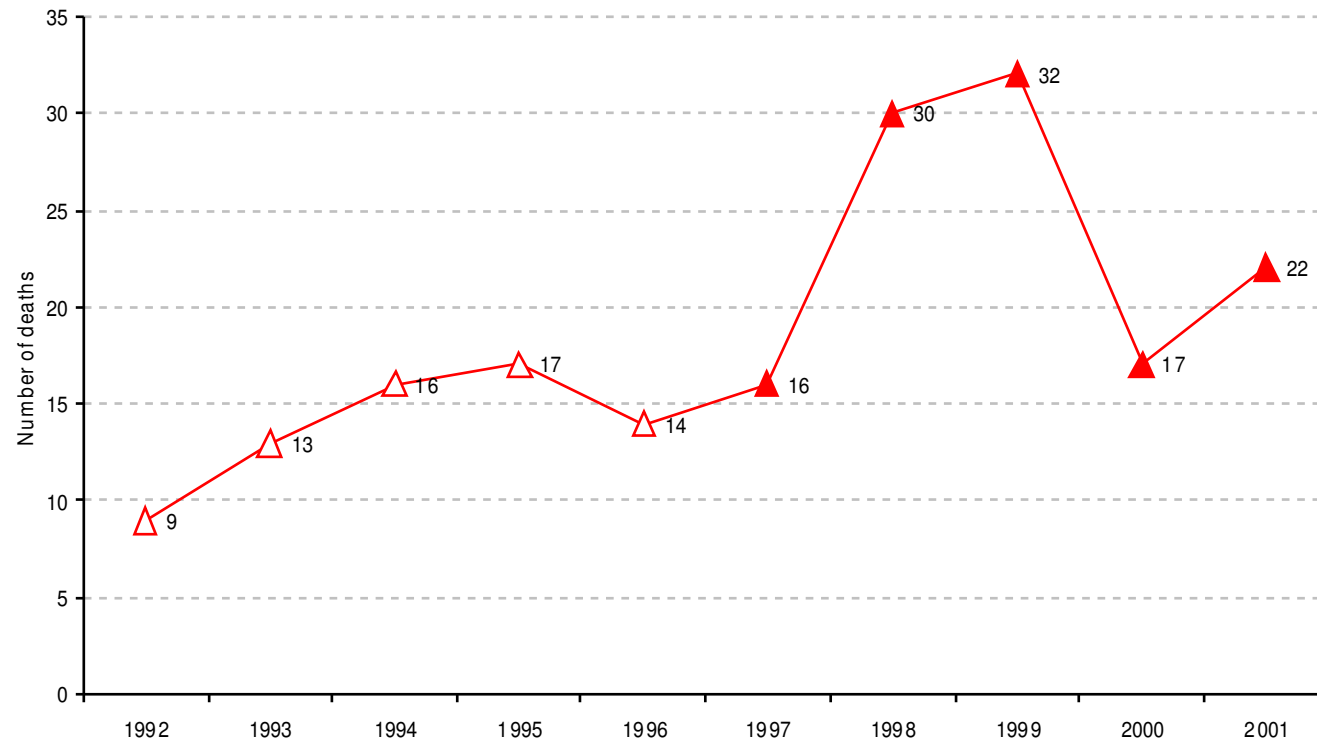
Addiction Research  
Unit

# SHEFFIELD DRUG DEATHS PROFILE 1992-2000

- Throughout the 1990's in both the United Kingdom and elsewhere drug-related deaths from acute and chronic causes have increased (1,2,3,4).
- A young heroin injector is at 14 times higher risk of death than a non drug user (4).
- Sheffield acute drug-related deaths doubled between 1997 and 1998 – concern expressed by coroner



# TRENDS BETWEEN 1997-2001: NUMBERS





## Possible Explanations: research commissioned to investigate causes

- Natural variation?
- Concurrent increase/decrease in drug using population?
- Drug purity?
- Trends in the characteristics/circumstances of fatal overdoses?
- Availability of drug services/prescribing practices?



# Clinical Developments in Sheffield 1997-2000

- Low baseline for all treatment services, maintenance waiting list 180 patients, > 2 years
- April 1999 opening of new Primary Care Clinic for Drug Dependence – an intermediate/deputising service
- Target group older users requiring methadone maintenance
- 200 previously untreated patients recruited to clinic in 1<sup>st</sup> year, a further 100+ in 2<sup>nd</sup> year
- Numbers of GPs prescribing methadone in the city doubled
- Overall effect: methadone maintenance patients in Sheffield doubled in 2 years 1999-2000



# Clinical Protocols

- Based on National Guidelines 1999 (5)
- Daily supervised dispensing of >50% of doses
- Closely integrated pharmacy scheme
- Non-collections reported- urines for methadone
- No tablets, injectables, dihydrocodeine
- All products used within their licence (including benzodiazepines)
- Evidence based:
  - harm minimisation philosophy – not abstinence oriented (6)
  - adequate dosage (5,6)
  - aim to retain patients in treatment(5,6)
- Primary care focus: intensive caseworking not routinely offered
- Local GPs encouraged to do the same



## RESULTS 1: Demographics 1997 - 2000 – who died?

- 99 deaths, 16 in 1997, 32 in 1998, 34 in 1999, 17 in 2000, 22 in 2001.
- Predominantly male (89%)
- Mean age 30 (range 18 to 51)
- Majority Single (89%)
- Majority Unemployed (85%)
- 91% were known drug users
- Long history of drug dependence (Mean 7.6 years)
- Only 38% receiving prescribed treatment with only 20% in MMT, 6% on oral mixture MMT
- Demographic profile unchanged over the 5 years.



## RESULTS II: Circumstances of death

- Majority of deaths in the deceased's own home (58%) without anyone present (81%)
- In a significant minority, someone else was present (19%)
- Witnesses often noted loud and distinctive snoring in hours before death.
- Only 1 person died who reached hospital alive
- A significant minority of deaths occurred in each year in which diminished tolerance played a role (10%) including following naltrexone
- Circumstances of death unchanged over 5 years



## CASE STUDY:

DC was a 20 year old male who had a history of iv heroin use which he had been battling to overcome for some time.

Attended a detox programme 6 months prior to death which was followed by a course of Naltrexone implants. Up to the time of his death these implants had been replaced every six weeks and urine tests had been shown to be clear. DC's last implant change was due around a week before the he died but because the prescribing doctor was away on leave he was instead prescribed "Nalorex" an oral substitute. These appear to have been taken as indicated until four days before death when DC started to drink heavily and stopped taking the tablets.

DC was discovered dead in the morning at his own home after injecting heroin the previous evening.

The autopsy report concluded that the death was compatible with potentially fatal misuse of heroin.



## RESULTS III:

### Coroner's findings: primary cause

- **Heroin, either on its own (49%) or in combination with other drugs was the primary cause of death in 72% of all cases.**
- **Methadone was considered the main cause of death in 11% of cases on its own and 10% cases in combination with other substances.**
- Remaining 7% of deaths caused by MDMA [Ecstasy] (2), Butane (2), Meptazinol (1), Cocaine (1) and Codeine (1).

# CAUSE OF DEATH OVER 5 YEARS:

Table 3 – drugs considered by the coroner to have caused death.

Substances	Year					All
	1997	1998	1999	2000	2001	
<b>Heroin</b>	8 (50)	15 (47)	16 (47)	9 (53)	7 (32)	55 (45)
<b>Heroin plus other drugs</b>	1 (6)	7 (22)	10 (29)	5 (29)	9 (41)	32 (26)
<b>Methadone</b>	2 (12)	2 (6)	6 (18)	2 (12)	0	12 (10)
<b>Methadone plus other drugs</b>	4 (25)	5 (16)	0	0	3 (14)	12 (10)
<b>MDMA (Ecstasy)</b>	0	1 (3)	1 (3)	0	0	2 (1.65)
<b>Butane</b>	0	1 (3)	1 (3)	0	1 (4.5)	2 (1.65)
<b>Meptazinol</b>	0	1 (3)	0	0	0	1 (0.8)
<b>Cocaine</b>	0	0	0	1 (6)	0	1 (0.8)
<b>Codeine</b>	1 (6)	0	0	0	0	1 (0.8)
<b>Multiple Drug Toxicity</b>	0	0	0	0	2 (9)	2 (1.65)

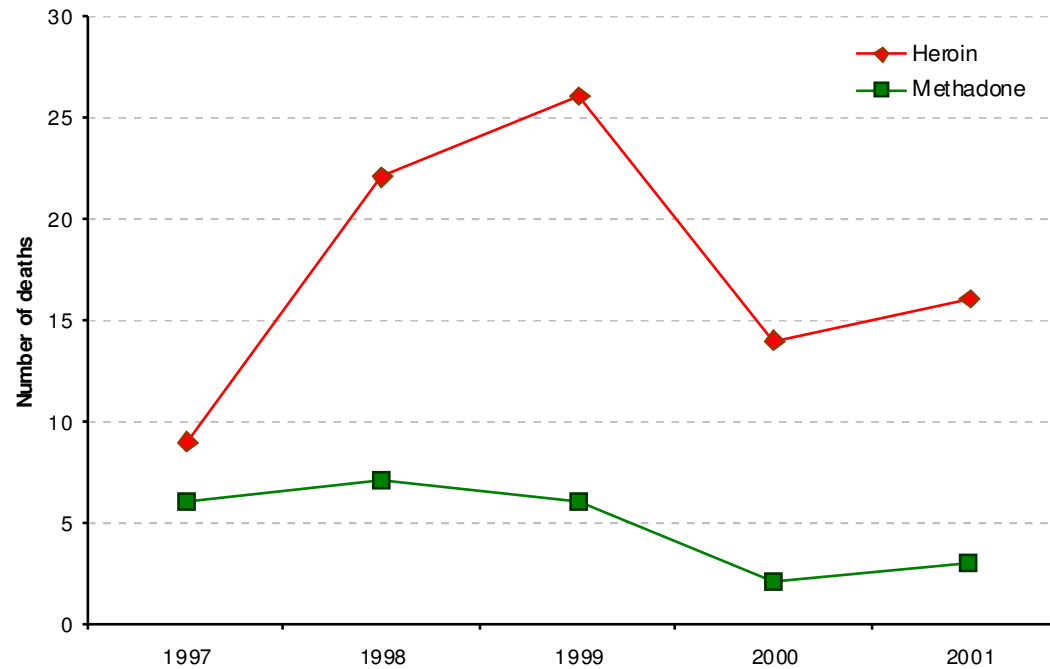


# Clinical Protocols and Clinical Governance

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# RESULTS IV: CAUSES OF OPIATE DEATHS – HEROIN OR METHADONE?

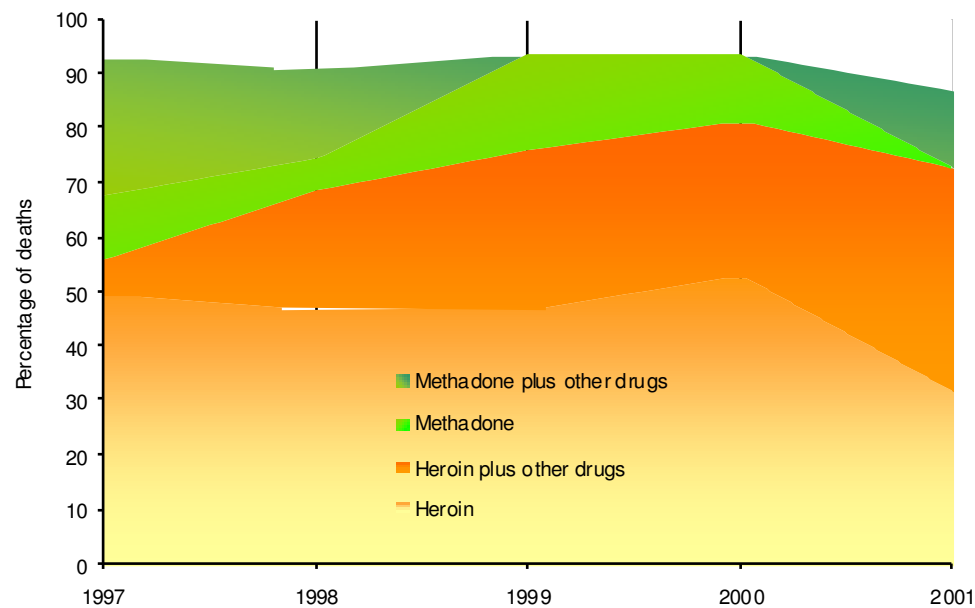
Figure 3 – Number of Heroin and Methadone related deaths



Primary care clinic opened 1999

# OPIATE DEATHS IN MORE DETAIL

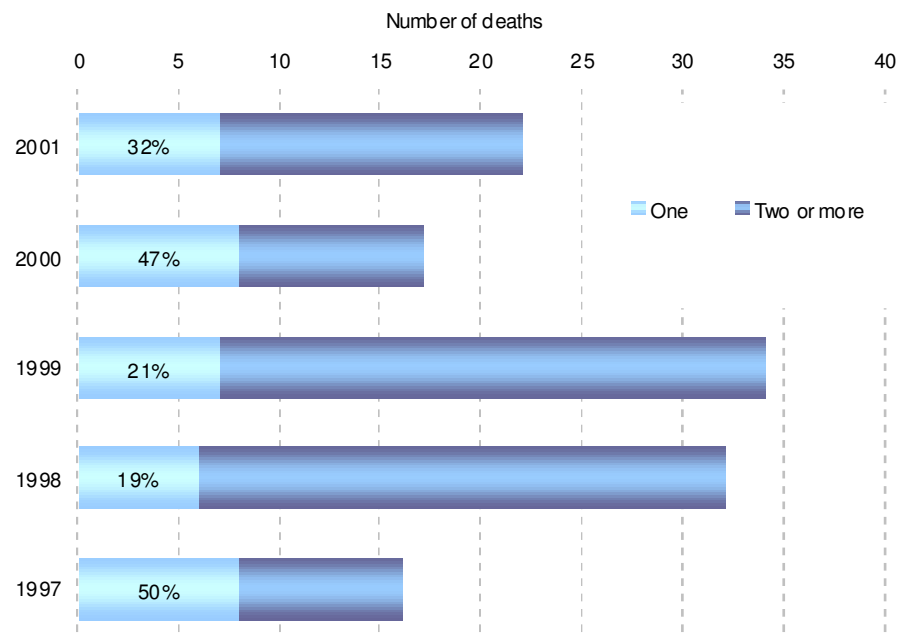
Figure 4 – Contribution of heroin and methadone to drug of misuse related deaths.



- Heroin responsible for most deaths.
- Proportion of deaths involving methadone fallen over 5 years.
- Increase in proportion of opiate deaths involving other drugs.

# WHY WERE HEROIN DEATHS HIGHER IN SOME YEARS?

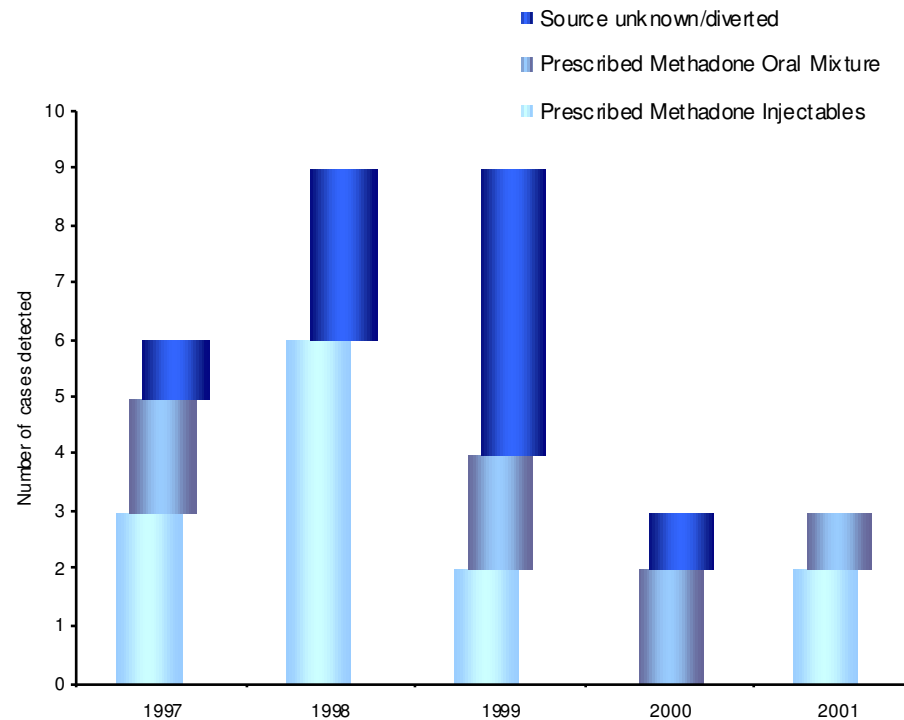
- Number of cases in which a solitary substance deemed to have caused death remained relatively constant.
- Excess of deaths in 1998/1999 due to excess of “polydrug” deaths (NB changes in prescribing patterns after this)



# DEATHS INVOLVING PRESCRIBED MEDICATIONS: methadone

- Deaths involving methadone peaked at 9 in 1998/1999.
- 3 deaths in 2001 (same as 2000) – no diverted methadone detected

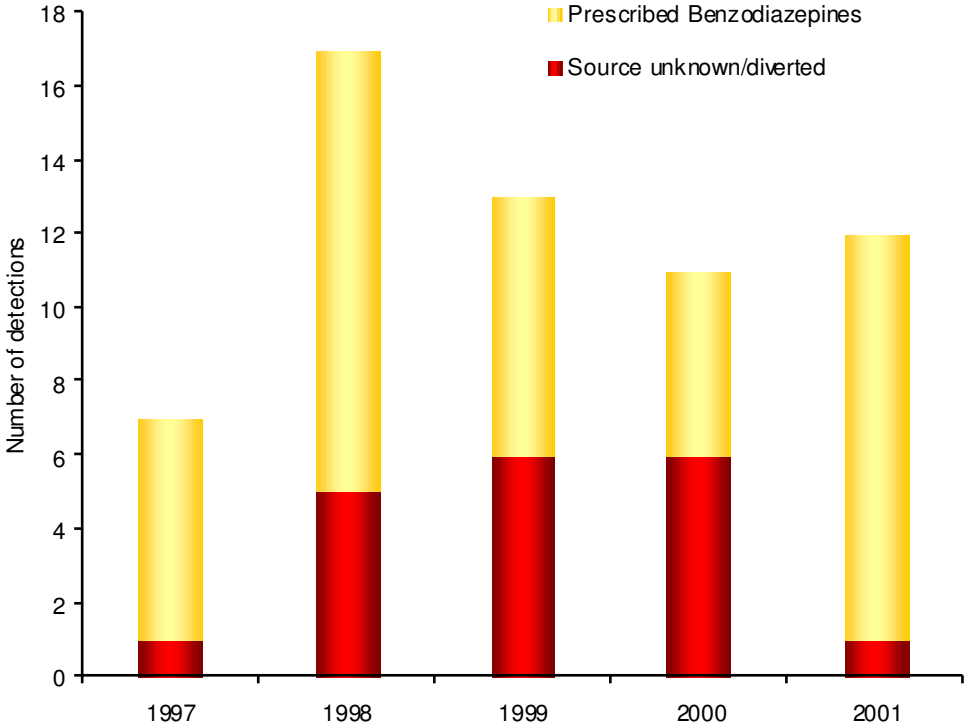
Figure 7 – Source and prescribed form of methadone.



# DEATHS INVOLVING PRESCRIBED MEDICATIONS: benzodiazepines

- Constant over past three years
- Only one diverted in 2001

Figure 8 – Source and prescribed form of benzodiazepines.





## SUMMARY POINTS – Sheffield Deaths

- Rise in drug deaths was a rise in heroin deaths: less than 50% of people who died were in contact with treatment services, only 6% were on oral MMT
- Polydrug deaths contributed to overall rise in heroin deaths especially benzos (3)
- Opening of Primary Care Clinic in 1999 may have contributed to stabilisation and fall in drug deaths (targeted high risk group for heroin deaths: change in protocols re benzos: no increase in methadone deaths)



# How Can GPs Help Reduce Drug Deaths? (12)

## 1. Basic harm minimisation

- Awareness of at-risk groups
- Advice re: injecting
- Advice re: action in case of overdose
- Advice re: dangers of methadone when take-home doses are given
- Advice re: concomitant use of benzodiazepines and alcohol
- Advice re: situations where tolerance may be lost

(NB also: testing and vaccination for blood-borne viruses and advice on avoidance of transmission) (5,6)



# How Can GPs Help Reduce Drug Deaths?

2. Providing safe evidence-based interventions according to guidelines
  - Methadone has been shown to reduce heroin deaths (13,14,15,16)
  - This is mirrored in the Sheffield experience (early results)
  - Methadone maintenance target groups are the most likely to die if untreated: prioritising
  - Methadone can be prescribed and dispensed safely in spite of fears to the contrary (17,18)
  - The National Guidelines are a good template for safe prescribing and development of local guidance



# How Can GPs Help Reduce Drug Deaths?

## 3. Avoiding potentially harmful interventions

- Benzodiazepines are a major contributor to drug deaths and are not a safe substitute for methadone (3) (NB Benzos cannot be dispensed in instalments in England)
- Methadone should be prescribed within local and national protocols (5,17,18) (NB loss of tolerance situations, tablets, injectables, large take-home doses are risky)
- Doctors should take steps to minimise drug diversion (5)



# Drug Deaths: Clinical Governance Summary Points

- The vast majority of drug-related deaths are due to heroin (10,11)
- Methadone maintenance treatment reduces heroin deaths (13,14,15,16)
- Methadone can be prescribed and dispensed safely for large numbers of patients without increasing methadone deaths (21)
- Benzodiazepines can contribute to drug deaths and are not a safe substitute for methadone
- Only 6% of Sheffield cohort had accessed recommended treatment



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