Kirby Institute

Intravenous fentanyl use among people who inject drugs in Australia

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Background

Fentanyl is a synthetically produced opioid approximately 100 times stronger than morphine[1]

Originally listed on the Pharmaceutical Benefits Scheme in 1996 for the treatment of severe pain related to cancer treatment[2]

- However, indications of treatment were expanded in 2006 for the treatment of non-cancer chronic pain

Several formulations are available in Australia (intravenous, intranasal, sublingual etc)

- 99% of fentanyl prescribed in 2013 was in the form of transdermal patches.

Source: [1] Domino et. al. (1965) Clinical Pharmacology & Therapeutics [2] National Prescribing service (2006)

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Background

Fentanyl may be diverted from patches prescribed to the individual or sourced illicitly

Increasing concern, both internationally and within Australia, regarding the misuse of fentanyl

- Increases in opioid overdoses have been reported in Northern America (most notably Illinois[1], Rhode Island[2] and Michigan[3])
- In Canada[4], fentanyl was detected in 67% of illicit drug overdose deaths in British Columbia in 2016 (656 deaths), an increase from 4% in 2012 (12 deaths)
- In Australia[5], fentanyl was identified as a contributory or underlying factor in the deaths of 136 people between 2000 and 2012

Source: [1] Denton et. al. (2008). Journal of forensic sciences. [2] Mercado-Crespo et. al. (2014). *MMWR Morbidity Mortality Weekly Report* [3] Algren et. al. (2013). *Journal of medical toxicology* [4] British Columbia Coroners Service (2017) [5] Roxburgh et. al (2013) Drug and Alcohol Review.

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Background

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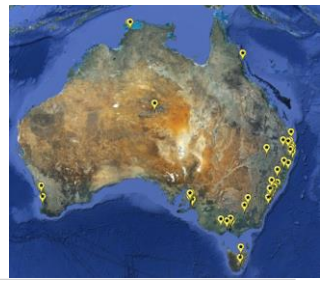
Aims

1) Determine the prevalence of fentanyl injection among Australian NSP attendees
2) Examine factors associated with recent (last six months) fentanyl injection

Methods: ANSPS

Australian Needle Syringe Program Survey

- Bio-behavioural sentinel surveillance system conducted annually since 1995
- Self-administered questionnaire: including demographic characteristics, drug use, HCV testing and treatment behaviours
- Provision of dried blood spot
- Conducted at ~50 NSPs nationally
- Representative of NSP attendees at sentinel sites[1]
- Supplementary questions on injection of pharmaceutical opioids (POs) in 2014
- Logistic regression models calculated crude and adjusted odds ratios
- Variables included in model: age, gender, location, injection risk behaviours

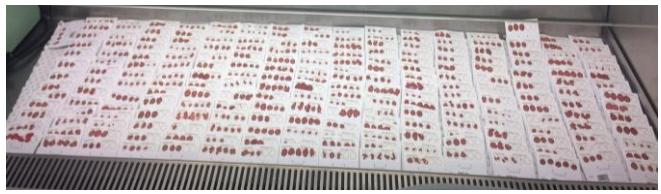


 Source: 1. Topp et al, (2011) JAIDS

Methods: Serological testing

Dried blood spots (DBS) tested for:

- HCV antibody: Monolisa Plus anti-HCV EIA version 2 (Bio-Rad, France)
- HIV antibody: Murex 1.2.0 HIV 1/2 ELISA (DiaSorin, Italy), Western blot (Bio-Rad, France)



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Results: Sample characteristics

A total of n=2,378 respondents completed the ANSPS in 2014

- One third (36%, n=848) reported injection of POs in the previous six months
- One quarter of respondents who reported PO injection (23%, n=193) reported injection of fentanyl in the previous six month (8%, n=193, of the total ANSPS sample)
- Of the 193 respondents who reported recent fentanyl injection, 37% (n=70) reported fentanyl as the main PO injected during this period

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Results: Sample characteristics

	Total (N=193, %)
Gender	
Male	144 (75)
Female	45 (23)
Sexual identity	
Heterosexual	161 (83)
Bisexual	17 (9)
Homosexual	4 (2)
Age	
Median (range)	39 years (18-61)
Location	
Metropolitan	151 (78)
Rural	42 (22)
Currently on OST	
No	114 (59)
Yes	71 (37)
Years since first injection	
Median (range)	20 years (0-43)

Results: Recent fentanyl injection

Factors associated with recent (past 6 months) fentanyl injection

	Total (N=848)	No recent fentanyl injection (N=655)	Recent fentanyl injection (N=193	Unadjusted OR#	Adjusted OR
Indigenous Australian descent					
No (ref)	700 (83)	551 (84)	149 (77)	--	--
Yes	131 (15)	93 (14)	38 (20)	1.51 (0.99-2.29)	**1.61 (1.04-2.51)**
Frequency of injection*					
Less than daily (ref)	272 (32)	230 (35)	42 (22)	--	--
Daily or more	544 (64)	398 (61)	146 (78)	**2.01 (1.37-2.94)**	**1.92 (1.30-2.83)**
Public injection*					
No (ref)	465 (56)	375 (59)	90 (47)	--	--
Yes	354 (43)	254 (40)	100 (53)	1.64 (1.18-2.27)	**1.43 (1.01-2.02)**
Overdose in the last 12 months					
No (ref)	627 (74)	509 (78)	118 (61)	--	--
Yes	211 (25)	140 (21)	71 (37)	**2.19 (1.54-3.10)**	**2.16 (1.48-3.13)**
Receptively shared syringes*					
Yes (ref)	634 (77)	480 (75)	154 (82)	--	--
No	180 (22)	147 (23)	33 (18)	0.70 (0.46-1.06)	**0.56 (0.36-0.87)**

* Last month

Strengths and limitations

Strengths

- Well established surveillance mechanism provides a national sample of PWID attending NSPs

Limitations

- Self-reported demographic and drug use data may be subject to recall and social desirability bias.
- Although ANSPS samples are representative of NSP attendees, generalisability of results is uncertain
- Timeframes for some variables were misaligned i.e. fentanyl injection was captured in the previous six months and overdose was captured in the previous 12 months
- Our study instrument didn't distinguish between fentanyl which may have been prescribed to the individual and fentanyl that was obtained illegally

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Conclusions

- Approximately one in ten respondents in 2014 reported injection of fentanyl in the previous six months
- People who had recently injected fentanyl were significantly more likely to identify as Indigenous, inject daily or more frequently, inject in public and to report overdosing in the past 12 months
    - These findings suggest that people who inject fentanyl in Australia may be a higher risk sub-population of PWID
- People who inject fentanyl should be provided with education regarding the increased risk of overdose, as well as adequate supplies of naloxone
- Consideration should also be given to ensuring adequate OST coverage and expanding access to supervised injection facilities for this population

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