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(ENGLAND 1998-2017)

1. Introduction

- Fentanyl is a highly potent synthetic opioid¹
- The structural flexibility of fentanyl has enabled the development of several fentanyl derivatives²:
 - Fentanyl and its pharmaceutical derivatives (remifentanyl, sufentanyl and alfentanil) are used clinically for analgesia and anaesthesia³
 - Non-pharmaceutical fentanyl derivatives possess extreme potencies and are not licensed for human use due to risk of overdose⁴

3. Method

Fentanyl-related cases from England (1998-2017) reported to the National Programme on Substance Abuse Deaths (NPSAD) database by May 4th 2019 were extracted and analysed using IBM® SPSS software.

2. Aims

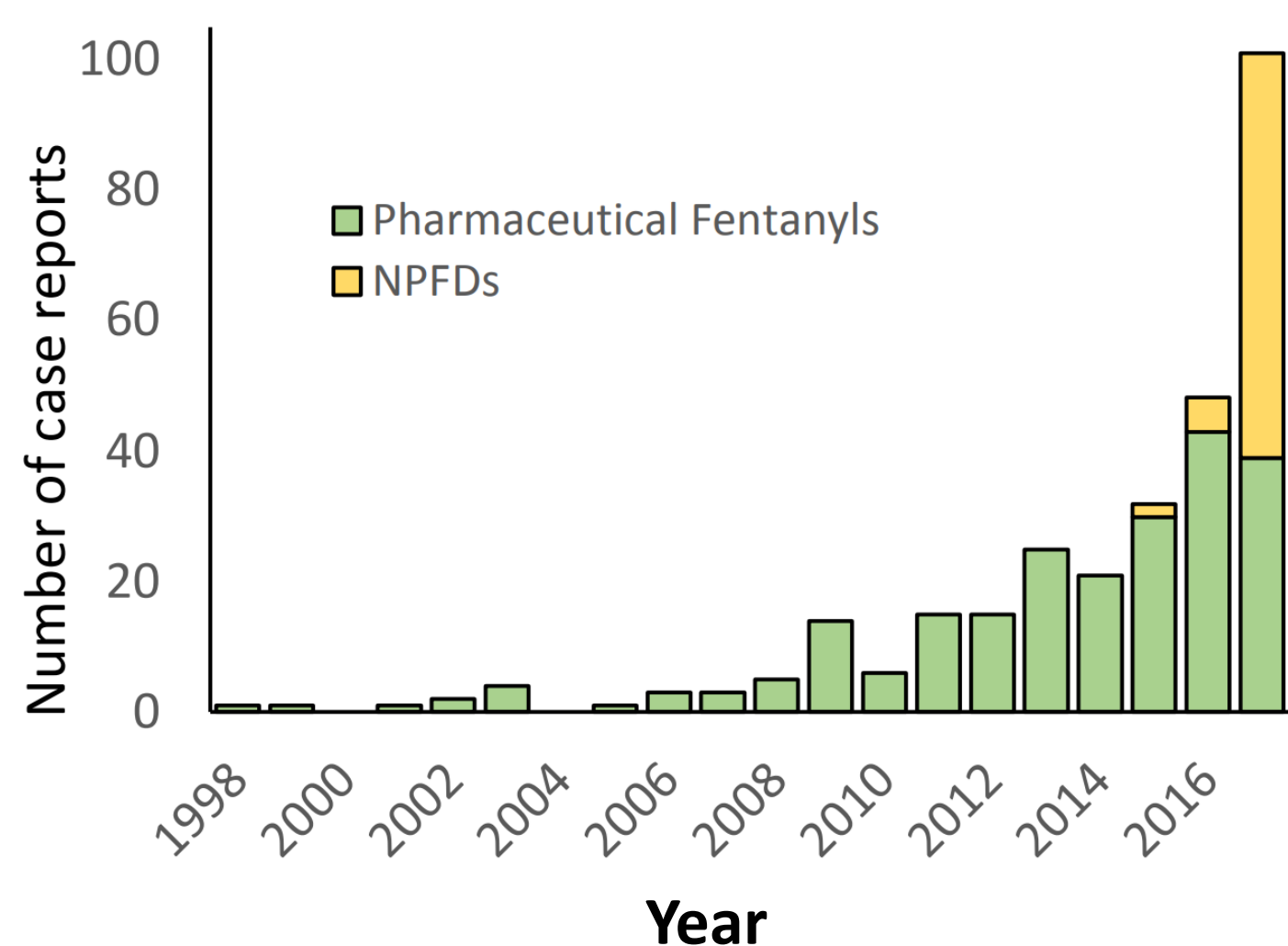
- To identify:
- Trends in fentanyl-related deaths in England
 - The source of pharmaceutical fentanyls detected

5. Conclusions

- Fentanyl-related deaths are rising. This is likely due to increases in use & toxicology test requests.
- Pharmaceutical fentanyls in an outpatient setting carry risk of unintentional death. Better guidance for patients prescribed fentanyl is needed.
- NPSAD-related fatalities are a major contributor to the recent spike in deaths. Harm reduction measures are urgently required.

4. Results

FENTANYL-RELATED DEATHS ARE RISING



- A total of 298 fentanyl-related deaths were reported
- NPSAD-related cases are responsible for the recent spike in fentanyl-related deaths

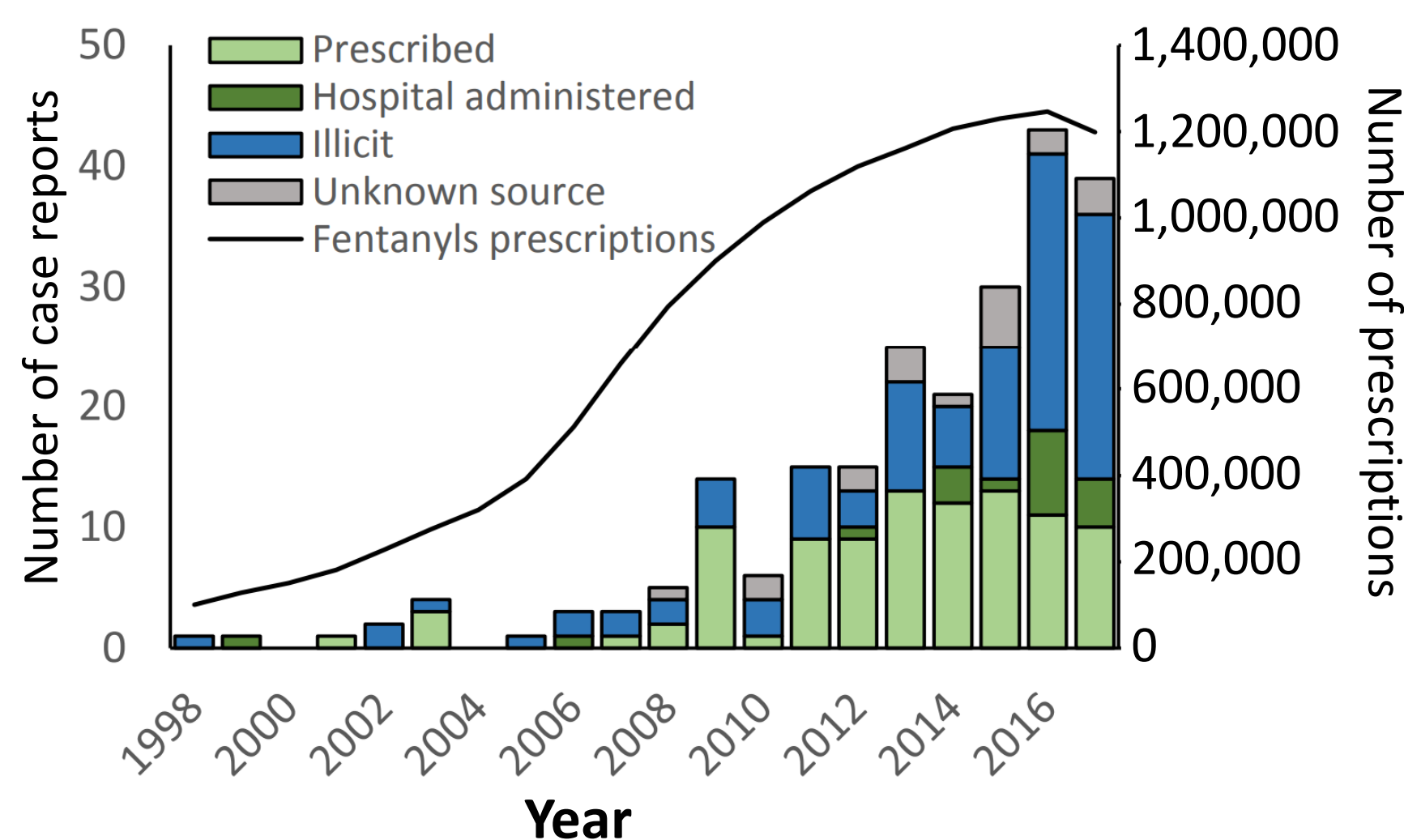
NEW NPSADs ARE DETECTED EACH YEAR

Year first detected	NPSAD	Number of cases*
2015	Acetylfentanyl	5
	Para-Fluorobutyrfentanyl	7
2016	2-Fluorofentanyl	2
	4-Fluorofentanyl	1
	Carfentanyl	55
2017	Butyrfentanyl	6
	Cyclopropylfentanyl	1
	Despropionylfentanyl	2
	Furanylfentanyl	2
	Methoxyacetylfentanyl	1
	Ocfentanyl	1
	Unknown Fluorofentanyl	1

*More than one NPSAD was found in some cases, so summing these cases is greater than number of NPSAD deaths (n=69)

- 69 NPSAD-related deaths were reported
- NPSAD administration was a direct cause of unintentional death in 97.1% of cases (n=67/69)

PRESCRIBING OF PHARMACEUTICAL FENTANYLS CORRELATES WITH DEATH RATES



- 229 pharmaceutical fentanyl-related deaths were reported
- Self-administration of pharmaceutical fentanyls, irrespective of source, carry high risk of unintentional death (85.3% of prescribed cases, 88.7% of illicitly procured cases)

NPSADs ARE COMMONLY CO-ADMINISTERED WITH OTHER ILLICIT DRUGS

- Co-administration of multiple fentanyls was reported in 43.5% of NPSAD cases (n=30/69)

	Number of cases
Cases with 1 NPSAD & 1 Pharmaceutical Fentanyl	22
Cases with 2 NPSADs	0
Cases with 2 NPSADs & 1 Pharmaceutical Fentanyl	1
Cases with 3 NPSADs	1
Cases with 3 NPSADs & 1 Pharmaceutical Fentanyl	6

- NPSADs were rarely detected in isolation

Co-administered drug type	% of cases
Heroin/Morphine	56.5%
Benzodiazepines/ZED	50.7%
Cocaine	58.0%
None	7.2%

DEMOGRAPHICS

- NPSAD-related deaths were majority male and younger than male decedents where a pharmaceutical fentanyl was found
- A balanced gender split and older demographic was evident in pharmaceutical fentanyl-related deaths

Fentanyl Type	Source	% Male	Mean Age (±SEM)	% Female	Mean Age (±SEM)
Pharmaceutical Fentanyl	Hospital	66.7% (n=13)	42.4 ±3.8	33.3% (n=6)	42.7 ±9.6
	Prescription	49.5% (n=47)	49.3 ±2.2	50.5% (n=48)	54.7 ±2.2
	Illicit	75.3% (n=73)	40.3 ±1.5	24.7% (n=24)	46.5 ±4.5
	Unknown	78.9% (n=15)	43.6 ±3.4	21.1% (n=4)	39.0 ±3.5
Pharmaceutical Fentanyl & NPSAD	Unknown & Illicit	90% (n=26)	37.3 ±1.5	10% (n=3)	22.7±2.7
NPSAD	Illicit	90% (n=36)	36.9 ±1.5	10% (n=4)	44.8±1.5
Total Fentanyl Cases		70.5% (n=210)	41.5 ±0.9	29.5% (n=88)	49.4 ±1.7
All England NPSAD Cases		73.6%	37.8 ±0.1	26.4%	43.9 ±0.2

6. References

1. Stanley (2014). *J Pain*, 15: 1215-26. 2. Raffa et al., (2018). *J Clin Pharmacol Ther*, 43: 154-8. 3. Schug & Ting (2017). *Drugs*, 77: 747-63. 4. Suzuki & El-Haddad (2017). *Drug Alcohol Depend*, 171: 107-116.