

1. Introduction

Synthetic cannabinoid receptor agonists (SCRAs):

- Contain tetrahydrocannabinol (THC), the main psychoactive ingredient of cannabis¹
- Possess extreme potencies that can cause severe cardiac events¹
- Are controlled in the UK under the Psychoactive Substances Act (PSA)²
- Appear increasingly popular likely due to their undetectable nature in routine drug screens³

3. Method

All SCRA-related cases from England and Northern Ireland reported to the National Programme on Substance Abuse Deaths (NPSAD) database by July 24th 2019 were extracted and analysed using IBM® SPSS software.

2. Aims

To identify:

- Patterns in SCRA-related deaths in England and Northern Ireland (2012-2018)
- The impact of the PSA on SCRA-related deaths

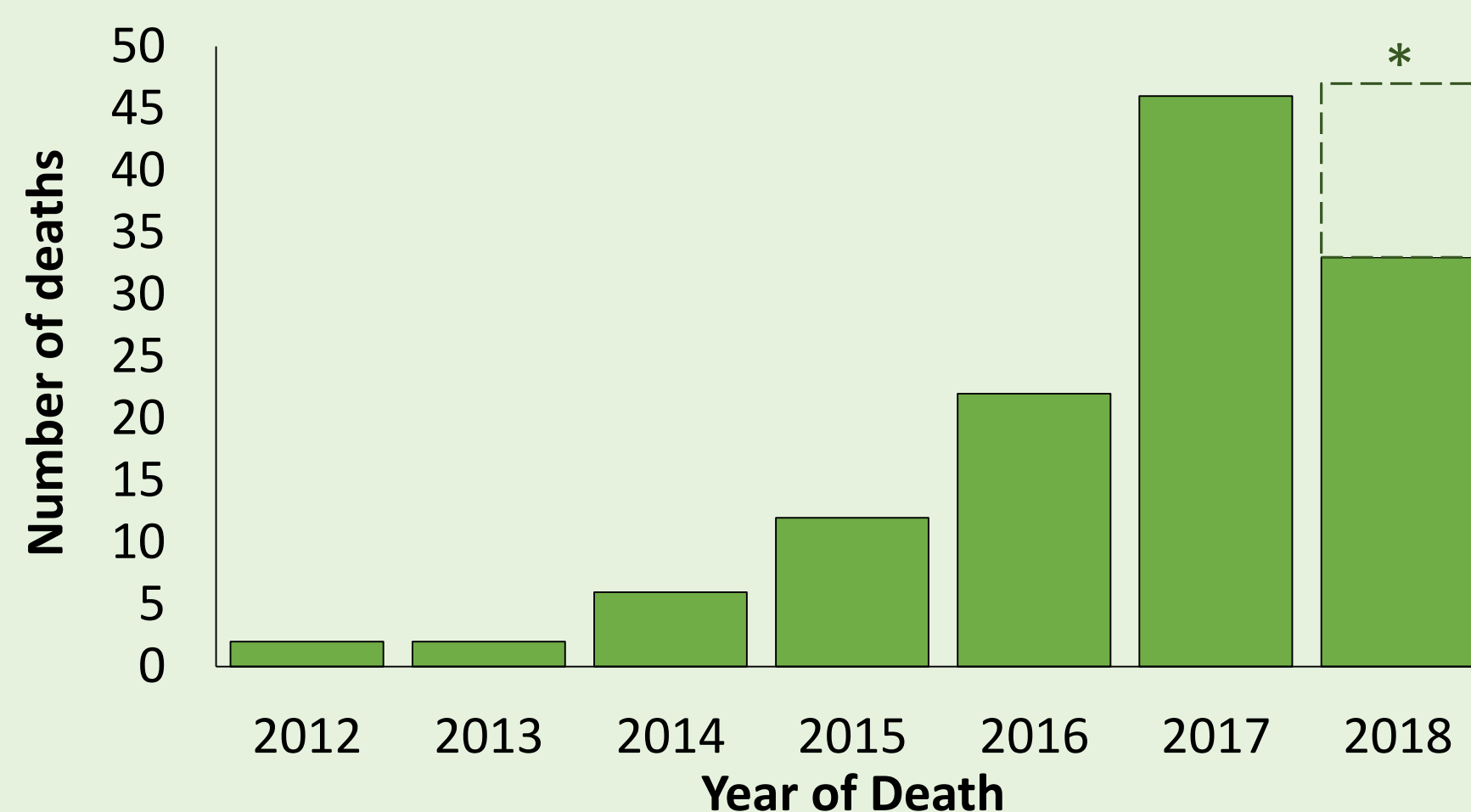
5. Conclusions:

- SCRA-related death reporting has increased. Harm reduction measures are urgently required.
- New SCRA variants are detected each year. This hampers detection: true death rate is likely higher.
- The PSA has not reduced SCRA-related deaths. Increases in use, SCRA toxicology testing requests, & library of detectable variants likely co-contributed.

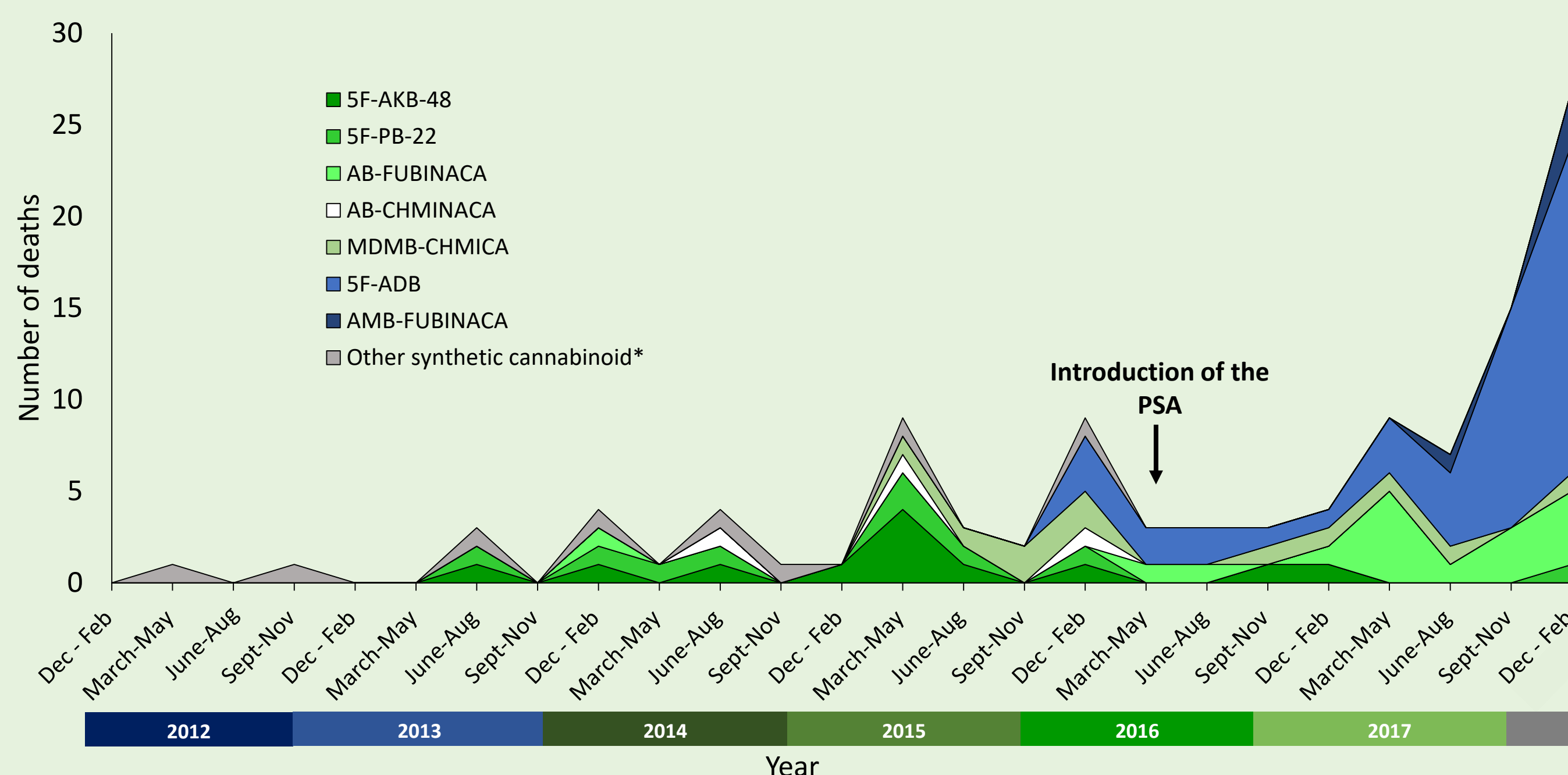
4. Results

SCRA-RELATED DEATHS HAVE RISEN EACH YEAR SINCE FIRST DETECTION

- The first SCRA-related but death was reported to NPSAD in 2012
- A total of 123 SCRA-related deaths were reported from 2012-2018 (England: =115; N Ireland: n=8)
- SCRAs were a direct cause of death in 84.5% of cases (n=104/123)
 - Death was deemed accidental in all these cases (n=104/104)
- There has been a drastic increase SCRA-related death rates since 2012: a 2300% increase in 2017 (2012: n=2; 2017: n=46)
- *Deaths are projected to plateau in 2018 (based on prior reporting rates) and remain high



NEW SCRA VARIANTS HAVE BEEN DETECTED AT POST-MORTEM EVERY YEAR SINCE 2012



- 13 different SCRA variants have been detected in deaths reported to NPSAD since 2012
- Since 2015 there has been a surge in deaths reported with the 5F-ADB variant
 - 5F-ADB is one of the most potent SCRAs, eliciting severe cardiac and psychiatric symptoms in humans⁴
- Introduction of the PSA has not reduced SCRA-related deaths, likely due to a combination of:
 - Increased SCRA use
 - Increased requests for SCRA toxicology tests
 - Increased library of known SCRAs to test for

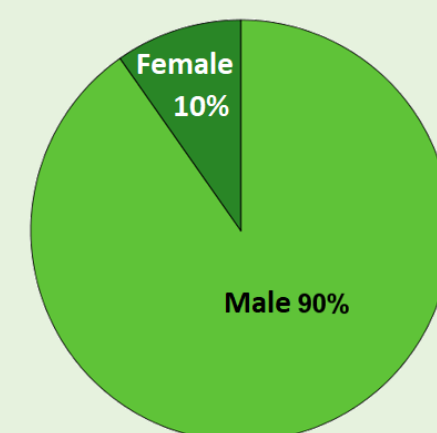
SCRAS ARE COMMONLY CO-ADMINISTERED WITH CNS DEPRESSANTS

- Alcohol was the most commonly co-detected drug at post-mortem (n=69/123 cases) at levels consist with alcohol consumption
- Alcohol is generated during decomposition. Alcohol levels less than 10 mg/dl were therefore excluded from analysis⁵

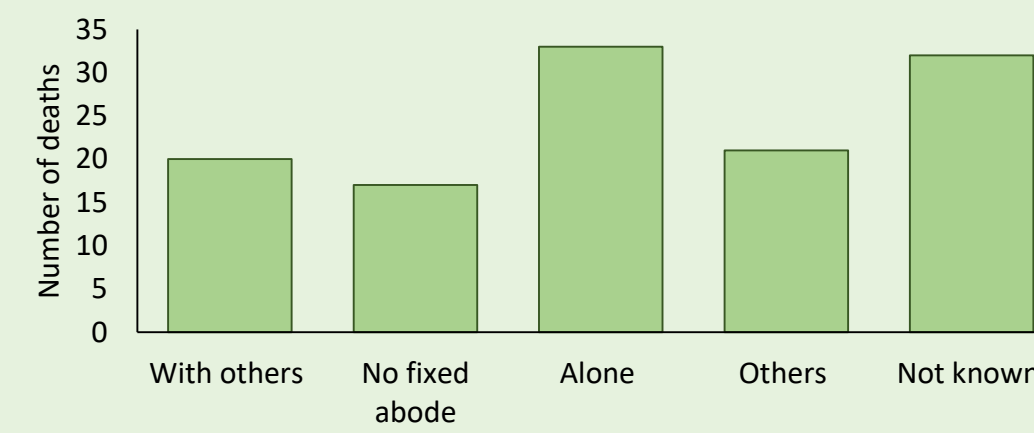
Co-administered drug type	% of cases
Alcohol	56%
Opioid	42.3%
Benzodiazepines/ZED	28.5%
Cannabis	28.5%
Anti-depressants	28.4%
Illicit Substances	23.6%

DEMOGRAPHICS

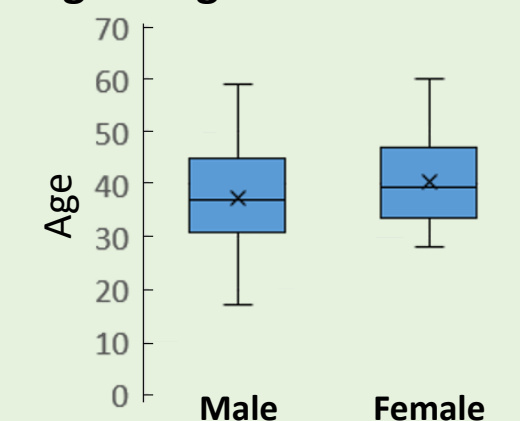
Gender of Decedents



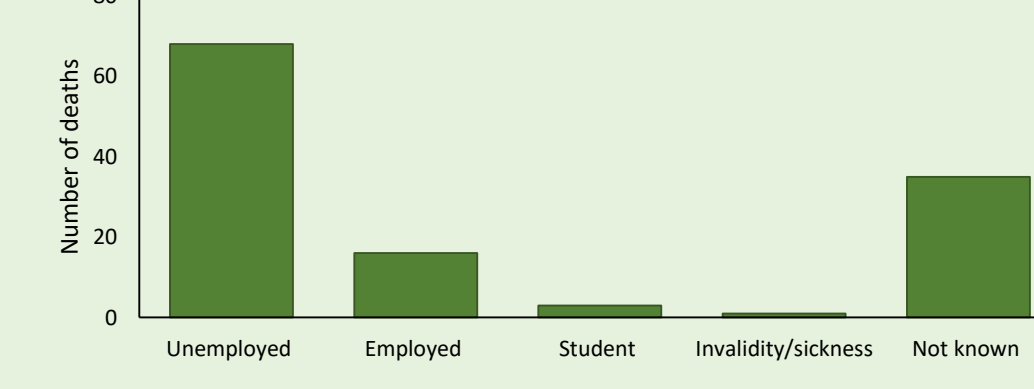
Living Arrangements



Age Range of Decedents



Occupation Status



6. References

1. Karila et al., (2016). Curr Pharm Des, 22: 6420-25.
2. The Psychoactive Substances Act. <http://www.legislation.gov.uk/ukpga/2016/2/contents/enacted>
3. Ford & Berg (2018). Ann Clin Biochem, 55: 673-78.

4. Asaoka et al., (2016). J Toxicol Sci, 41: 813-16.
5. Cowan et al., (2016). Regul Toxicol Pharmacol, 78: 24-36.