

Combining monitoring data to evaluate responses to NPS: the case of 4-FA in the Netherlands

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With Ruben Vrolijk, Esther Croes, Lonja Schürmann, Daan van der Gouwe, Laura Smit-Rigter, Matthijs Blankers, a.o.

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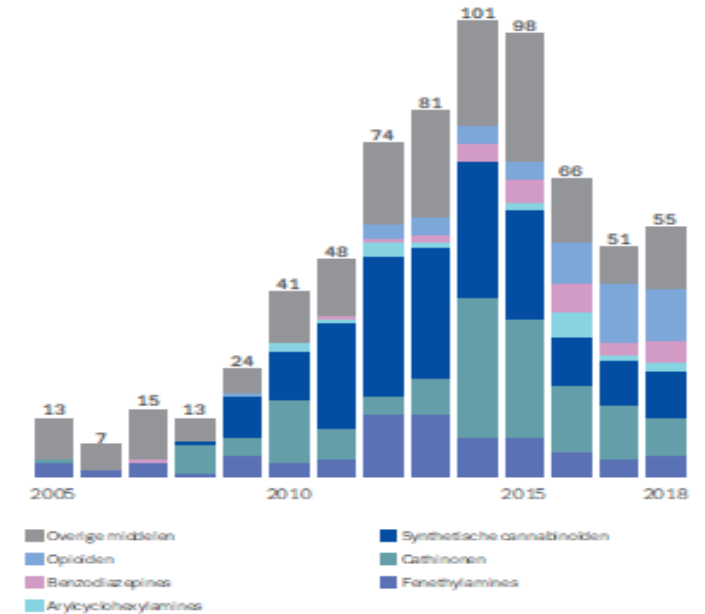
Netherlands Institute of
Mental Health and Addiction



Background

- Growing number of New Psychoactive Substances
- Each year NPS are brought under control of drug laws, based on risk assessments using multiple sources and (health-related) indicators
- However, generally no 'follow-up' after prohibition
- This presentation:
 - Using multi-indicator data to evaluate responses to policy measures: case of 4-fluoroamphetamine (4-FMA) in the Netherlands

Aantal en categorieën nieuwe psychoactieve stoffen zoals voor het eerst gemeld aan het EU-Early warning system, 2005-2018



Effects 4-FA: in between amphetamine and MDMA

Addiction

RESEARCH REPORT

SSA SOCIETY FOR THE STUDY OF ADDICTION

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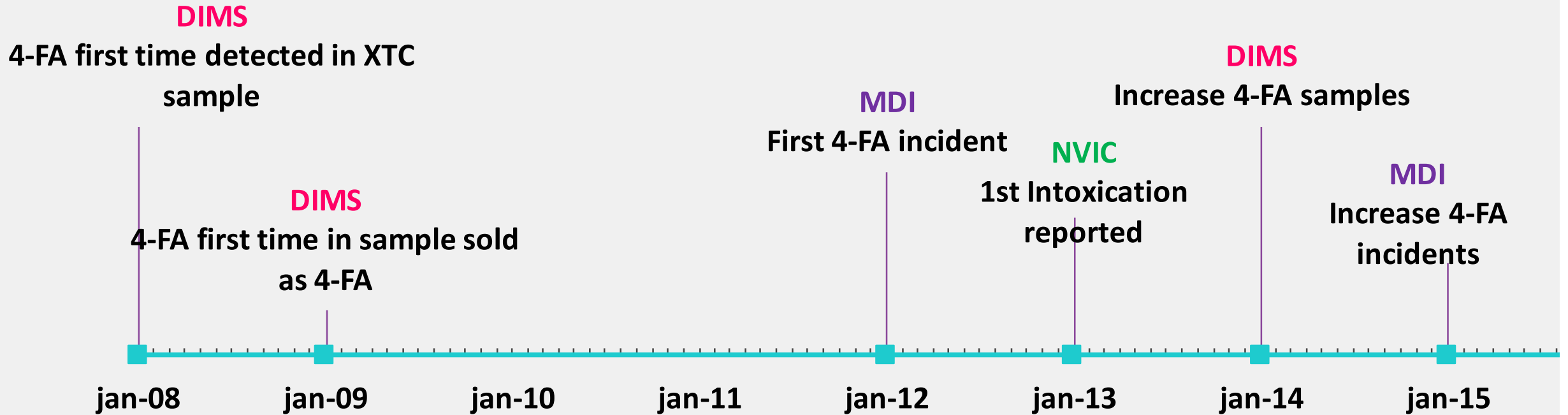
4-Fluoroamphetamine in the Netherlands: more than a one-night stand

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Users appreciate the effects of 4-FA: less intense than ecstasy (less perceptual changes, dizziness) but more entactogenic than amphetamine

4-FA Timeline



DIMS: Drug Monitoring Information System

MDI: Monitor Drug Incidents

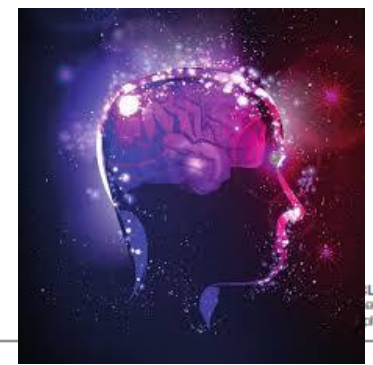
NVIC: National Poisons Information Centre

4-FA: "ECSTASY LIGHT..."?

Correspondence

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frontiers
in Pharmacology



CLINICAL TRIAL
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NCT03701113



ORIGINAL COMMUNICATION

Haemorrhagic stroke related to the use of 4-fluoroamphetamine

C. H. W. Wijers¹ · M. C. Visser² · R. T. H. van Litsenburg³ · R. J. M. Niesink^{1,4} · R. B. Willems⁵ · Esther A. Croe

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Abstract

Introduction The use of the new psychoactive substance 4-fluoroamphetamine (4-FA) and the number of intoxications substantially increased in The Netherlands in recent years. We describe two patients with severe complications and the characteristics of a large sample of 4-FA-intoxicated patients.

Methods Information on patients with 4-FA-related intoxications between January 2009 and June 2017 was at the Monitor Drug-related Incidents. Detailed clinical information was obtained of two patients with haemorrhagic stroke after toxicologically confirmed 4-FA use.

Results We report on two patients who presented with headache and mild hypertension after 4-FA use. Patient

Acute toxic effects related to 4-fluoroamphetamine

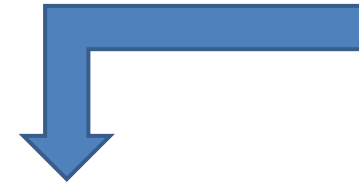
The Monitor Drug-related Incidents (MDI) is a Dutch monitoring system initiated in 2009, which collects data on drug users who present to medical services with acute toxic effects related to recreational drug

tachycardia, hypertension, and hyperthermia. Remarkably, patients with 4-FA intoxications often complain of severe headache. Recently, the MDI and the DPIC received several notifications of severe cardiovascular and cerebrovascular complications, including intracerebral haemorrhages, after the use of 4-FA. The presence of

Safety Profile and Neurocognitive Function Following Acute 4-Fluoroamphetamine (4-FA) Administration in Humans

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as a placebo controlled, within subject, phase 1 trial as it was the first to administer 4-FA to humans under controlled conditions. Overall, 4-FA produced a strong elevation in blood pressure up until 4–5 h after administration that was followed by a sustained increase in heart rate. After an interim review of safety data from five participants, a decision was taken to cancel administration of 150 mg. We subsequently obtained complete datasets for placebo and 100 mg 4-FA treatments only. Effects of 4-FA on

Timeline 4-FA (cont.)

1-8-2016	First fatal incident
1-9-2016	Health warning Campaign
7-12-2016	Risk assessment
<u>25-5-2017</u>	<u>4-FA Schedule I Opium Act</u>



Onderzoekers waarschuwen voor legale drug 4-FA



4-FA-pillen PAKETTHOEK

De drugsonderzoeksinstituten Jellinek en het Trimbos-instituut waarschuwen dat de betrekkelijk nieuwe drug 4-FA ernstige gezondheidsproblemen kan veroorzaken. Ehbo-organisaties bij evenementen en andere medische diensten zien het aantal klachten snel toenemen.

Klachten variëren van lichte en ernstige hoofdpijn tot hersenbloedingen en hartenfalen. Vermoedelijk zijn er ook mensen na gebruik van het middel

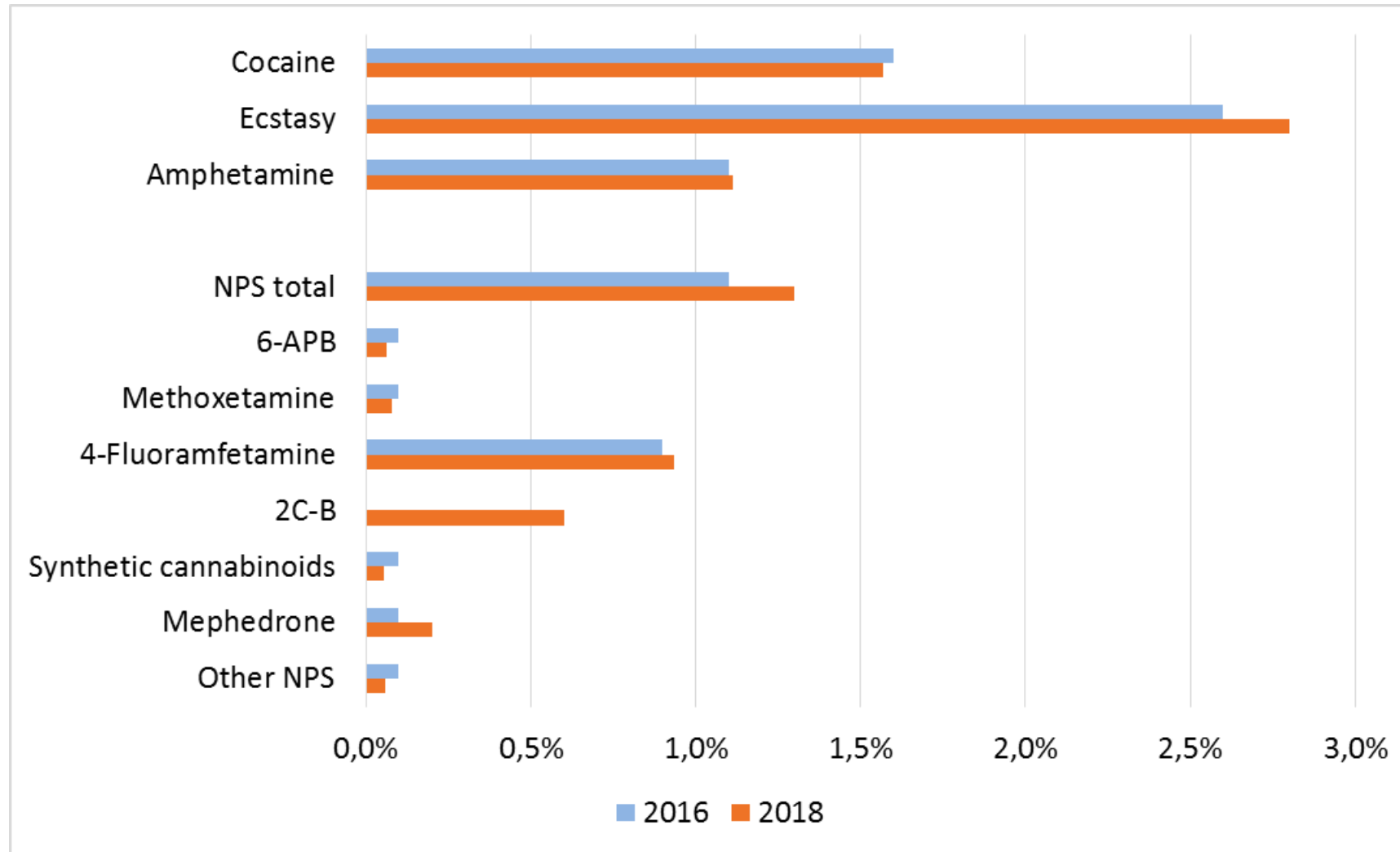


Sources/indicators related to 4-FA

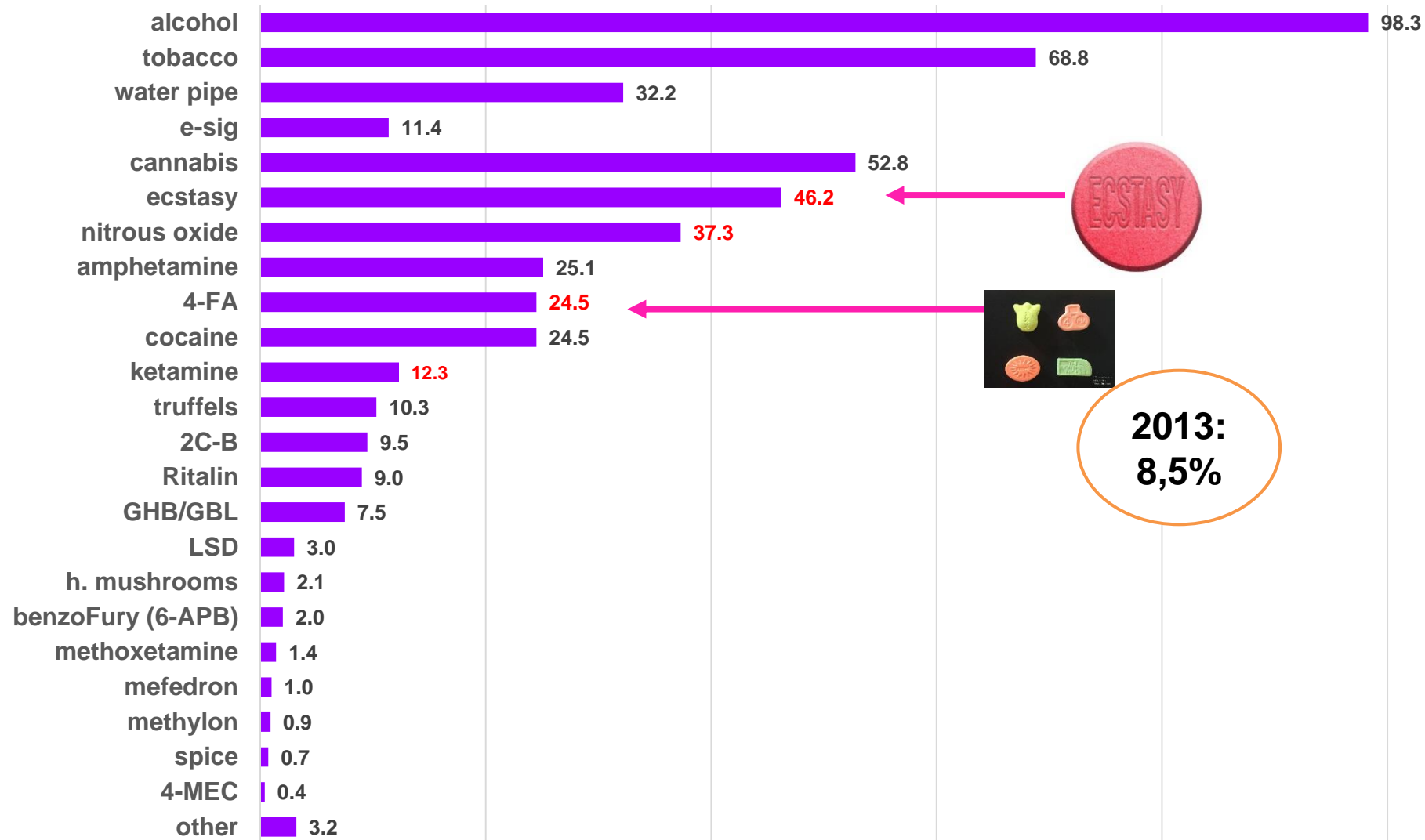
1. General population surveys (2016 – 2018)
2. Survey among nightlifers, with one year follow up (2017)
3. Market data: samples of 4-FA of consumers (DIMS)
4. Drug-related emergencies
5. Online drug forum analyses

1. General Population Surveys (18+): 2016 & 2018

last year prevalence of use



2. Substance use among party- and clubgoers (15-35 yrs) in 2016



4-FA

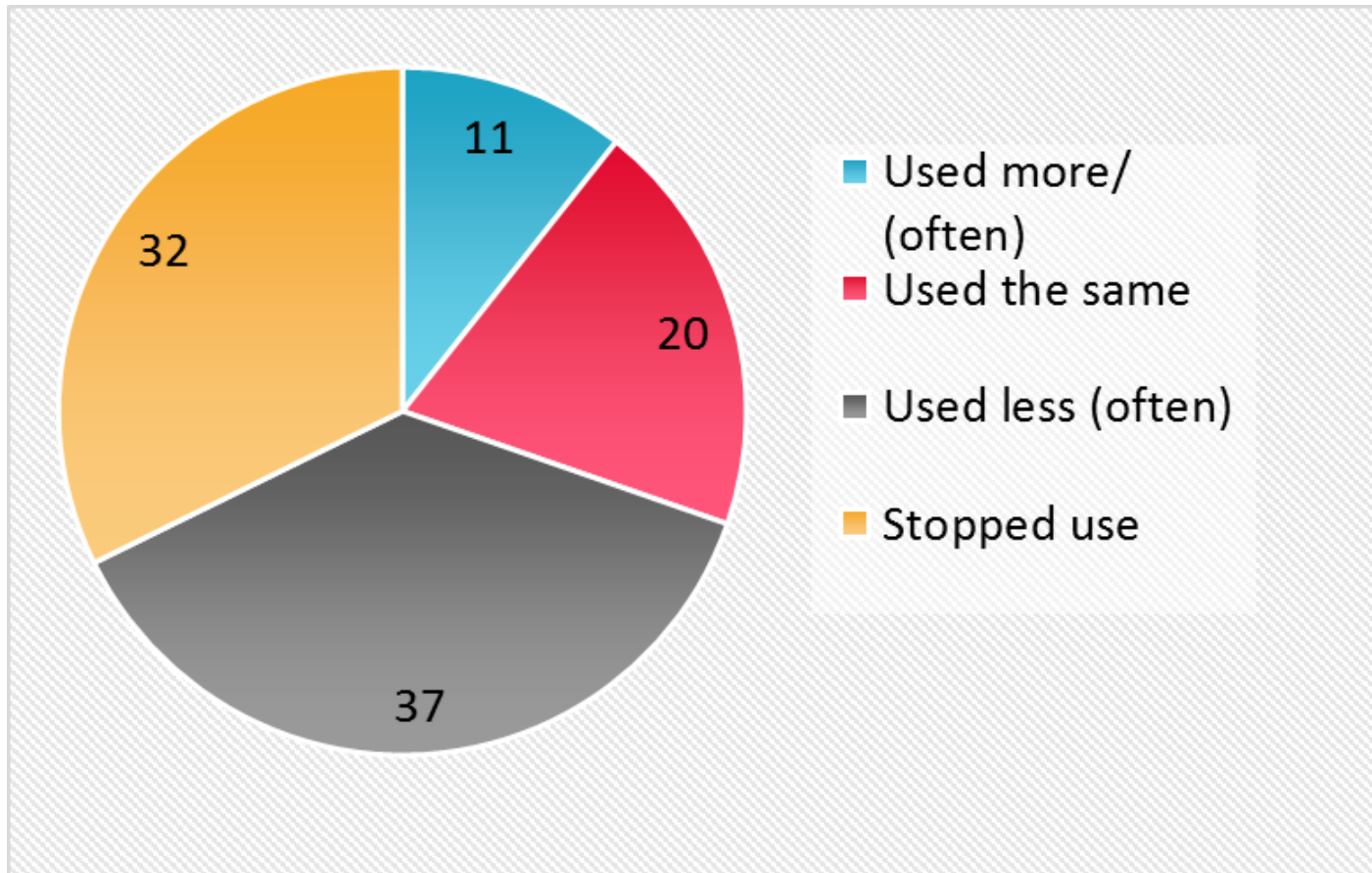
4-Fluoramphetamine:
its use and users' characteristics

Follow-up survey among 372 4-FA users (April 2017)

- Patterns of 4-FA and other drug use, including combined use
- Motives for 4-FA use
- *Self-reported changes in use and reasons for changing use*
- Perceived effects, adverse events and health problems
- Risk perception (compared to ecstasy)
- Harm reduction ('damage control')
- Sources of information on 4-FA
- Warning campaign: exposure, opinion and (self-reported) effects

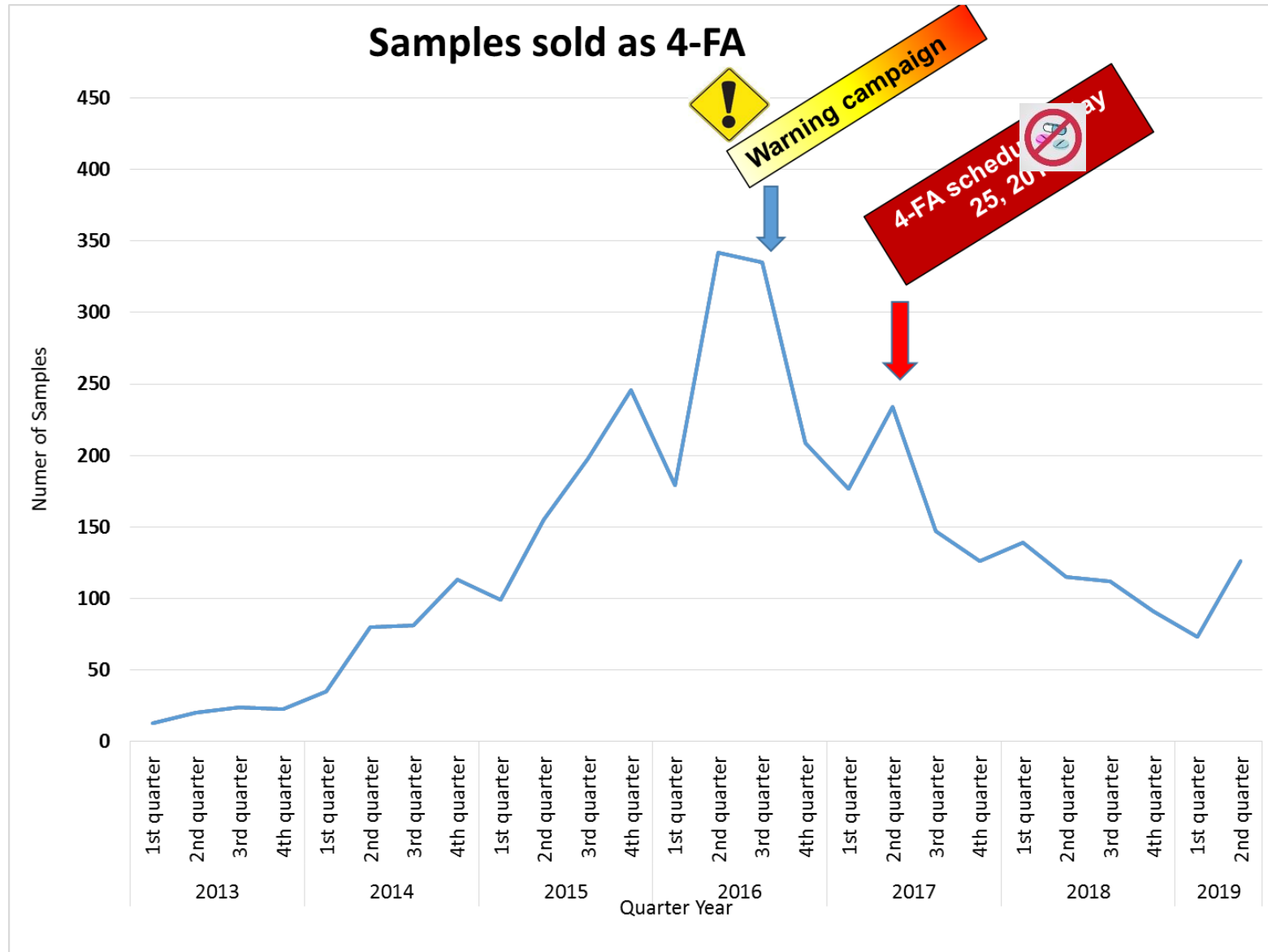
2017 follow-up: changes in use?

(April 2017)



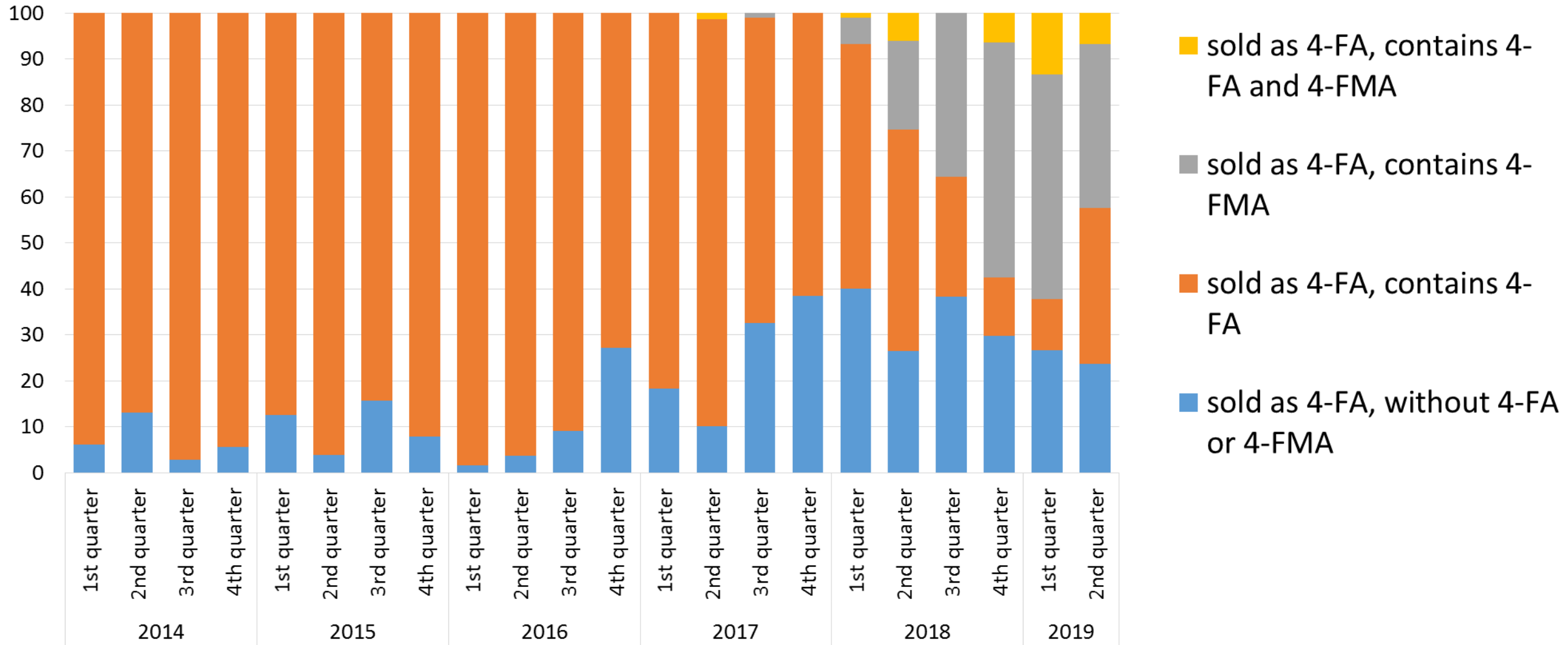
- Most-frequently given reasons to reduce or stop using 4-FA:
 - mental and physical health consequences
 - the information about the negative effects
- Most users received the warning via social and national media
- For two third of the users who had heard the warning, this also changed their perception of the risk

3. Drug checking – DIMS: decrease samples after warning and ban

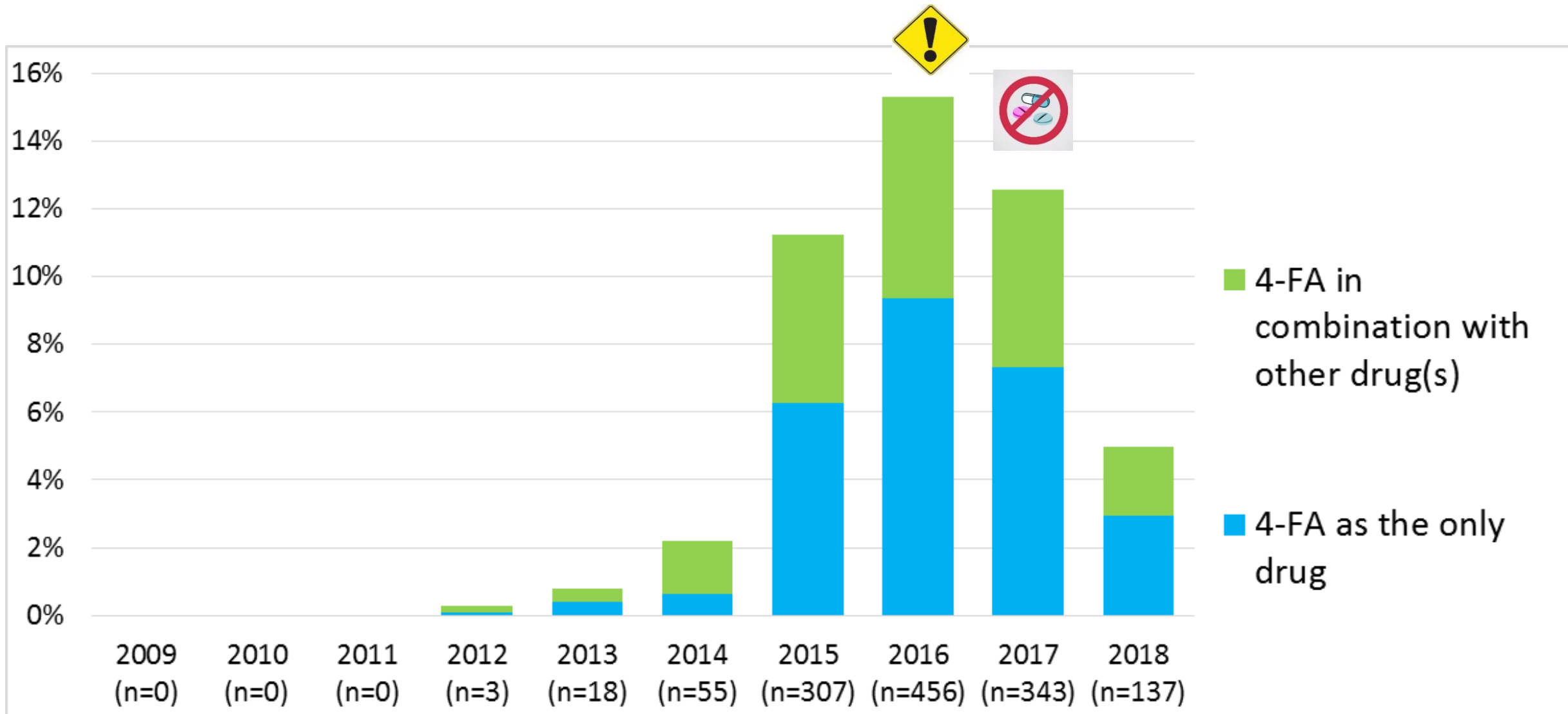


..however.. samples sold as 4-FA increasingly contained 4-FMA

Contents of samples sold as 4-FA (lab samples)



4. Proportion of 4-FA related emergencies at first aid posts of large scale events



5. Google trend & drug forum analysis

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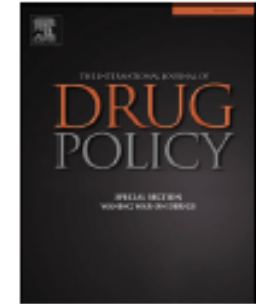


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Research Paper

4-Fluoramphetamine in the Netherlands: Text-mining and sentiment analysis of internet forums

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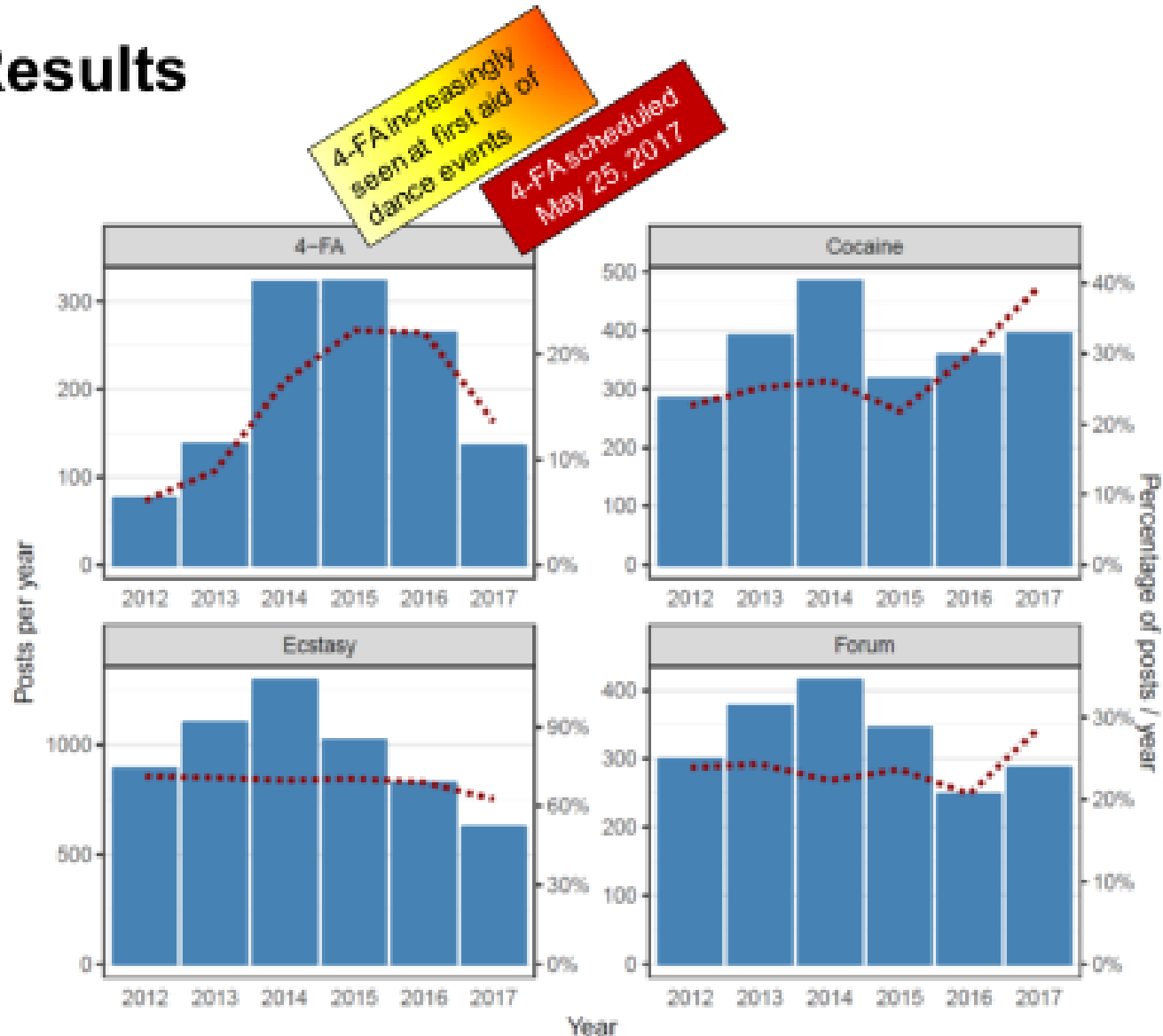
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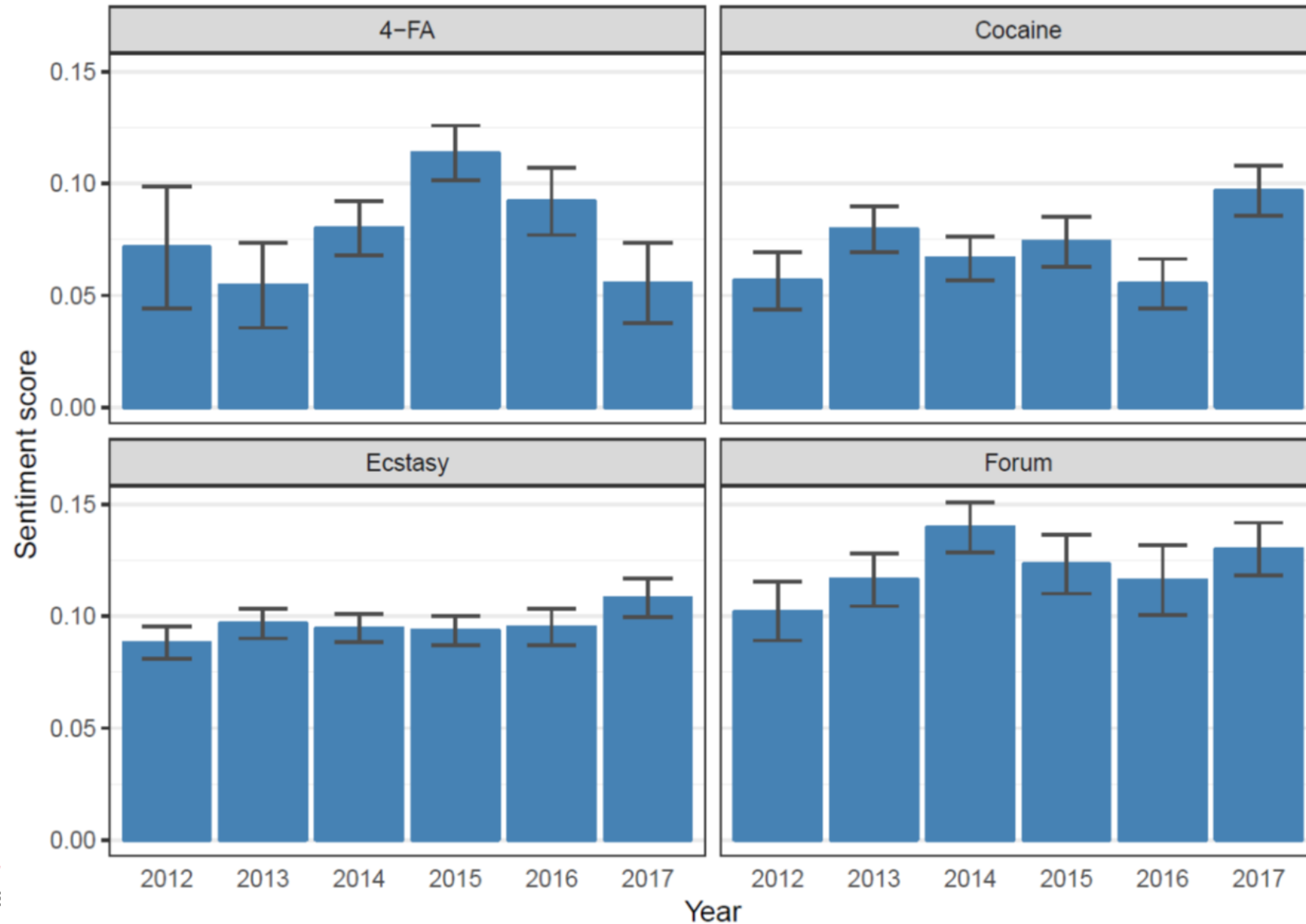


Increase in number of posts on 4-FA

Results



Sentiment analysis



New NPS legislation in 2020

- Legislation for generic system in preparation, based on four classes of NPS
 - Phenethylamines
 - Synthetic cannabinoids
 - Fentanyls
 - Cathinones

Conclusions

- Most sources and indicators consistently pointed at an increase in popularity of 4-FA until 2016 and a downward trend after the warning campaign and subsequent prohibition in 2017
- GPS does not seem to be sensitive, but longer term trend is awaited
- All other sources have added value and give complementary information
- They suggest that the warning may have been effective in limiting use; and probably the ban has reduced availability of 4-FA
- However: it is important to be aware of *unintended consequences: 4-FMP; return to ecstasy ? (increasing emergencies)*
- Future: also waste water analysis (gives local patterns)