Table 1. TOXBASE access and NPIS telephone enquiry numbers for selected drugs of misuse for the period June to September 2013–2016.

	TOXBASE accesses					Telephone enquiries		
Drug type	Jun-Sep 2013	Jun–Sep 2014	Jun–Sep 2015	Jun–Sep 2016	% Change	Jun–Sep 2015	Jun–Sep 2016	% Change
NPS	4520	4463	7606	2882	−62%	218	50	−77%
Cocaine	3108	2977	3821	4121	8%	48	52	8%
Amphetamines	2129	2231	3227	2011	−38%	17	12	−29%
Ecstasy/MDMA	2082	2606	3030	2890	−5%	56	60	7%
Heroin	1773	1866	2200	1877	−15%	28	23	−18%
Cannabis	1220	1213	1584	1226	−23%	36	40	11%
All drugs of misuse	21,393	21,326	26,143	20,846	−20%	618	303	−51%

compared to the same 4 month period in 2015. TOXBASE® accesses to the same substances were obtained for the same 4 month period for 2013–2016.
Results: Numbers of TOXBASE accesses and telephone enquiries about NPS substantially reduced comparing 2016 with the equivalent period in 2015. Smaller reductions were seen for amphetamines and heroin. For cannabis and ecstasy, TOXBASE accesses reduced while telephone enquiries increased. Cocaine activity increased slightly comparing 2016 with 2015 (Table 1).
Conclusion: These preliminary data demonstrate reductions in NPS-related activity comparing the summer of 2016 with that of 2015. These data should be interpreted with caution; the findings could be consistent with an impact from the PSA, but other reasons for temporal changes in activity are possible. Further data collection over a longer period and more detailed statistical analysis are needed.

158. An example of a new toxicological disease and a new social problem related to the abuse of and addiction to new psychoactive substances

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Objective: A new disease has arisen with the tidal wave of new psychoactive substances (NPSs) available to abusers and this has created a new challenge for clinicians. Due to the difficulty in diagnosis and clinical management, NPS-abusers force clinicians to search for better ways to manage poisoned patients. To manage acute intoxication, potential addiction and possible long-term sequelae, it is increasingly evident that a multidisciplinary approach is mandatory. Particularly, NPS-induced psychoses are frequently treated as an organic psychosis, but this is associated with therapeutic failure. We describe a case of a "human-tester" of different NPS presenting repeatedly with severe acute toxic effects and long-term psychiatric consequences.
Case report: A clinical course of a 27-year-old male (chemist) with positive history of cannabis, 3,4-methylenedioxymethamphetamine (MDMA) and ketamine abuse is described. Over 4 years (2012–2016) the patient was hospitalized (intensive care [ICU] and/or psychiatric wards) 7 times for severe acute intoxication due to NPS abuse. NPS were carefully chosen for their dissociative effects and were purchased on the Internet. The length of stay of each hospitalization varied from 4 days to 11 weeks. For severe conditions, during an ICU stay the patient underwent renal depurative treatments for 3 weeks. The main clinical manifestations (during the acute phase) were severe psychomotor agitation, aggressiveness, delirium, hallucinations and dissociative state. Psychosis was unsuccessfully treated with haloperidol, clotiapine, aripiprazole, valproic acid and promazine. NPS detected in biological samples during the different hospitalizations included dextromethorphan, methoxamine (MXE), MXE-bromo-derivative, ethylketamine, ethylnorketamine, norketamine, deschloroketamine, phencyclidine, 3-OH-PCP, 3-MeO-PCP, methoxyphencyclidine, dyphylline, methylphenidate, methoxphenidine and 5F-ADB. Brain positron emission tomography (PET) scan revealed a severe diffuse widespread metabolic deficit as a cerebral "age" of about a 70 years old subject. At present, the addiction behavior is still "active" and psychosis is pharmacology-resistant.
Conclusion: NPS-addicted patients give rise to different problems compared to abusers of classic substances. NPS-related psychosis has peculiar clinical aspects, and seems to be less responsive to standardized pharmacological treatments. As future perspectives, a multidisciplinary collaboration is necessary in order to identify optimal and appropriate management in these patients. To better understand all the crucial aspects of these novel toxicological diseases, experimental and clinical research on acute and chronic toxicity of NPS is needed.

159. An online survey on misuse of benzodiazepines and "Z drugs" in Singapore

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Objective: There is increasing concern regarding misuse of benzodiazepines and "Z-drugs". The aim of this study was to establish awareness and misuse prevalence of these drugs in Singapore.
Methods: An online survey was delivered through a market research company in September 2015 and June 2016. Demographic data and data on whether individuals had heard of a range of benzodiazepines/"Z drugs" and if so, whether they had ever misused them were collected; misuse was defined as use for reasons other than as directed by a doctor or pharmacist. Differences in proportions by year were tested using Fisher's

Table 1. Results of an online survey on misuse of benzodiazepines and "Z drugs" in Singapore.

	Number (%) of respondents who had heard of the drug			Number (%) of respondents who had ever misused the drug		
Drug Name	2015	2016	*p*-Value	2015	2016	*p*-Value
Diazepam	349 (34.9%)	376 (37.6%)	.227	27 (7.7%)	37 (9.8%)	.360
Alprazolam	183 (18.3%)	225 (22.5%)	.023	9 (4.9%)	16 (7.1%)	.411
Lorazepam	151 (15.1%)	189 (18.9%)	.028	10 (6.6%)	16 (8.5%)	.547
Midazolam	146 (14.6%)	188 (18.8%)	.014	8 (5.5%)	20 (10.6%)	.112
Clonazepam	88 (8.8%)	113 (11.3%)	.074	4 (4.5%)	9 (8.0%)	.396
Nitrazepam	78 (7.8%)	98 (9.8%)	.134	7 (9.0%)	15 (15.3%)	.255
Bromazepam	75 (7.5%)	99 (9.9%)	.068	5 (6.7%)	6 (6.1%)	1.000
Zolpidem	86 (8.6%)	116 (11.6%)	.031	7 (8.1%)	11 (9.5%)	.807
Zopiclone	67 (6.7%)	97 (9.7%)	.018	4 (6.0%)	9 (9.3%)	.562

exact test due to small cell counts in a post-hoc analysis (Bonferroni-adjusted $p < .006$).

Results: There were 999 respondents in 2015: 50.1% male, 49.8% female, 0.1% transgender; median (IQR) age 35 (29–45) years; 82.6% were Chinese, 8.2% Indian, 5.3% Malay, 0.8% Eurasian, 3.1% other race/ethnicity; 85.4% were employed, 11.3% unemployed, 3.3% students. There were 1000 respondents in 2016: 50.0% male; median (IQR) age 36 (30–45) years; 83.9% were Chinese, 6.8% Indian, 5.7% Malay, 0.6% Eurasian, 3.0% other race/ethnicity; 86.6% were employed, 10.1% unemployed, 3.3% students. Diazepam was the most commonly heard of drug; of those who had heard of the drugs, misuse ranged from 4.5–15.3% (Table 1). There was an increase in the awareness of the drugs but not in their misuse from 2015 to 2016.

Conclusion: This study suggests that the misuse prevalence of these drugs is similar to that in the UK [1] and USA [2]. Further work is needed to understand this problem to inform public health initiatives to address this issue.

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160. Ayahuasca intoxication: two case reports

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Objective: Ayahuasca, a plant-based psychotropic beverage utilized for medicinal and religious purposes by Amazon and Orinoco shamans, is gaining advocates worldwide. The main species of plants used in its preparation are *Banisteriopsis caapi* and *Peganum harmala*. Both plants contain various alkaloids including beta-carboline, harmine, tetrahydroharmine and N,N-dimethyltryptamine (DMT). Onset of action after ingestion of the tea is relatively rapid – within the first 30–40 minutes. The user experiences intense mental activity characterized by introspection with strong visual-perceptual alterations (hallucinations involving geometric shapes, bright colors and moving lights) and a range of emotions spanning sadness, fear, euphoria, and uncontrolled laughter. These phenomena are associated with an increase in associative processes and inability to focus attention with enhanced ability to recall memory of past events. Systemic effects are limited to vomiting, tachycardia and mydriasis. Clinical effects intensify during the first two hours after ingestion and subside gradually in about six hours. Recent work shows effects after a single dose in depressed subjects may persist for weeks. Other studies indicate that use may help opioid addiction. We report two cases.

Case reports: Case 1: A 45-year-old male former heroin addict and habitual cannabis user began visiting Santo Daime and regularly traveled to one of the two Italian locations where ayahuasca is available. He drank ayahuasca on multiple occasions between mid-August to early October. Several months prior to drinking ayahuasca, he had stopped treatment with methadone, but denied heroin or other opioid use. In mid-September he began experiencing episodes of abnormal behaviors with paranoid ideations culminating in uncontrollable aggression requiring police intervention and hospitalization. His treating physician opined that although the patient had previously demonstrated abnormal behavior, he now showed marked symptomatology. Case 2: A 29-year-old male methadone patient presented to hospital with marked agitation and uncontrollable aggression. Blood was positive for amphetamines and urine testing reported DMT. The poison center suspected ayahuasca ingestion. High performance liquid chromatography-mass spectrometry (HPLC-MS) urine testing revealed: 2,5 dimethoxy-4-methyl-phenethylamine (2C-D), 2,5-dimethoxy-4-ethylphenethylamine (2C-E), 2,5-dimethoxy-4-ethyl-amphetamine (DOET), caffeine, and lidocaine.

Conclusion: The clinical effects of ayahuasca may be over in hours but can last for days. Multiple doses may prolong the effects. Individuals with pre-existing psychological and drug-seeking disorders such as opioids may be more at risk for adverse events than the general population. Combative psychosis has not generally been reported. Ayahuasca use should be considered in the differential diagnosis of patients who present with psychomotor agitation and hallucinations or who have a history of addictive disorders. Effects may be prolonged.

161. Baclofen poisoning in France reported to French Poison Centers: a five-year retrospective study

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Objective: Baclofen, a gamma-aminobutyric acid B receptor agonist, seems to be a promising treatment for alcohol dependence and in France the off-label use of baclofen for this indication has greatly increased since 2008. In March 2014, the National Safety Agency for Medicines and Health Products issued a Temporary Recommendation for Use (TRU) of baclofen up to the dose of 300 mg/day. The French Poison Centers were asked