



## Special Report: Emerging 2C-Phenethylamines, Piperazines, and Tryptamines in NFLIS, 2006-2011



### Highlights

An estimated 580 reports of 2C-phenethylamines were submitted to State and local forensic laboratories in the United States from January 2006 through December 2010 and analyzed by March 31, 2011. During this five-year period, the number of 2C-phenethylamine reports increased from 28 in 2006 to 228 in 2010. During the first half of 2011, an estimated 102 reports of 2C-phenethylamines were submitted to State and local laboratories.

In 2010, 2C-phenethylamines were identified in 32 States; 39% were identified as 2C-B, 33% as 2C-E, and 23% as 2C-I. Regionally, there were 44 reports of 2C-phenethylamines in the West, 70 reports in the Midwest, 32 reports in the Northeast, and 83 reports in the South.

An estimated 38,230 reports of piperazines were submitted to State and local forensic laboratories in the United States from January 2006 through December 2010. Piperazines increased sharply over this time period, peaking in 2009 at 17,580 reports. An estimated 5,600 reports of piperazines were submitted between January and June 2011.

In 2010, nearly all States (44) reported piperazines to NFLIS. Most were either BZP (80%) or TFMPP (18%). Regionally, there were 910 reports of piperazines in the West, 2,330 reports in the Midwest, 1,591 reports in the Northeast, and 6,181 reports in the South.

From January 2006 to December 2010, an estimated 1,302 reports of tryptamines were submitted to NFLIS from as many as 35 States. Most tryptamines were either DMT (79%) or 5-MeO-DIPT (13%). In 2010, there were 71 reports of tryptamines in the West, 105 reports in the Midwest, 102 reports in the Northeast, and 196 reports in the South.

By the end of 2011, the Controlled Substances Act specifically named two 2C-phenethylamines, one piperazine, and six tryptamines, and others were controlled by definition. Many States have also passed laws preventing the possession, sale, or use of emerging drugs 2C-T-7, 2C-B, BZP, TFMPP, 5-MeO-DIPT, 5-MeO-DMT, AET, AMT, DET, and DMT.

# Introduction

The National Forensic Laboratory Information System (NFLIS) is a program of the Drug Enforcement Administration (DEA), Office of Diversion Control, that collects drug identification results from drug cases analyzed by Federal, State, and local forensic laboratories. This NFLIS Special Report presents findings on three categories of drugs whose abuse has been steadily increasing in the past five years: 2C-phenethylamines, piperazines, and tryptamines. National estimates for 2006 through midyear 2011 are presented along with State-level reports to NFLIS of more than 40 compounds. Many of these emerging drugs have been added to DEA's drugs and chemicals of concern list,<sup>1</sup> and two drugs—N-benzylpiperazine (BZP) and 1-(3-trifluoromethylphenyl)-piperazine (TFMPP)—appeared on the list of top 25 drugs reported to NFLIS in 2008 (BZP only), 2009, and 2010. For example, see the *2010 NFLIS Annual Report*.<sup>2</sup>

Today's illicit drug market offers a variety of synthetic drugs, largely through Internet sales, that are abused by people of all ages. These drugs are illegally manufactured or synthesized in clandestine laboratories; many designer drugs are offered as a "research chemical," "not for human consumption." Phenethylamines are ingested for their stimulant and hallucinogenic effects on the central nervous system. One category of phenethylamines that has received attention in recent years contains 2,5-dimethoxy or 2C derivatives, such as 4-bromo-2,5-dimethoxyphenethylamine (2C-B) or 2,5-dimethoxy-4-iodophenethylamine (2C-I). Piperazines are often used as industrial chemicals. Due to their stimulant and hallucinogenic effects, piperazines have entered the club or party scene. Piperazines of concern include BZP, TFMPP, and 1-(3-chlorophenyl)-piperazine (*meta*-chlorophenylpiperazine, *mCPP*). While *mCPP* is found in the illicit market, it is also a metabolite and starting material for the synthesis of several prescription drugs (e.g., trazodone, nefazadone). Tryptamines, such as N,N-dimethyltryptamine (DMT), occur naturally in plant species and can also be produced synthetically.

South American snuffs and brews like *Ayahuasca*, prepared from a jungle vine (*Banisteriopsis caapi*), have been used in ancient medicinal and ritualistic practices that continue today. The psychoactive component of tryptamines is being abused, often as substitutes to 3,4-methylenedioxymethamphetamine (MDMA). Like piperazines, tryptamines are hallucinogenic substances that are taken orally, or more rarely by smoking, snorting, or injection. Commonly abused tryptamines include DMT and 5-methoxy-N,N-diisopropyltryptamine (5-MeO-DIPT).

Several of the drugs presented in this NFLIS Special Report have been named and federally scheduled under the Controlled Substances Act (CSA; see Table 1). As of December 31, 2011, these include two 2C-phenethylamines (2C-T-7, 2C-B), one piperazine (BZP), and six tryptamines (5-MeO-DIPT, 5-MeO-DMT, AET, AMT, DET, DMT). More substances, which are not specifically named in the CSA, are controlled by definition as salts, isomers (i.e., optical, position, and geometric), and salts of isomers for a named substance (e.g., 2C-E, 2C-P, 2C-T-4, 5-MeO-AMT, 5-MeO-DPT, NMT). Under the Federal Analogue Act, noncontrolled 2C-phenethylamines, piperazines, and tryptamines intended for human consumption can be treated as if they were Schedule I controlled substances, according to 21 U.S.C. (United States Code) 802 (32) and 21 U.S.C. 813. State bans for selected substances range from seven States (5-MeO-DMT) to more than 40 States (DET, DMT). Table 1 shows the Federal and State control status for selected emerging drugs.

<sup>1</sup> U.S. Department of Justice, Drug Enforcement Administration, Office of Diversion Control. (2012). *Drugs and chemicals of concern*. Retrieved from [http://www.deadiversion.usdoj.gov/drugs\\_concern/](http://www.deadiversion.usdoj.gov/drugs_concern/)

<sup>2</sup> U.S. Drug Enforcement Administration, Office of Diversion Control. (2011). *National Forensic Laboratory Information System: Year 2010 Annual Report*. Springfield, VA: U.S. Drug Enforcement Administration. See <https://www.nflis.deadiversion.usdoj.gov/Reports.aspx>.

**Table 1** Federal and State Control Status

Drug Name <sup>a</sup>	2C-T-7 <sup>b</sup>	2C-B <sup>c</sup>	BZP <sup>b</sup>	TFMPP	5-MeO-DIPT <sup>d</sup>	5-MeO-DMT	AET <sup>e</sup>	AMT <sup>d</sup>	DET	DMT
<b>Federal Control</b>	Schedule I September 2002	Schedule I January 1994	Schedule I September 2002	Not Controlled	Schedule I April 2003	Schedule I January 2011	Schedule I March 1993	Schedule I April 2003	Schedule I Original CSA 1970	Schedule I Original CSA 1970
<b>State Control<sup>f</sup></b>	CO, GA, HI, IA, ID, IL, ME, MO, ND, NV, NY, OK, PA, SD, TN, TX, VA, WA, WY	AZ, CO, FL, IA, ID, IL, IN, ME, MO, MT, NC, ND, NE, NV, NY, OH, OK, PA, SD, TX, UT, VA, WA, WV, WY	AZ, CO, HI, IA, ID, IL, IN, ME, MO, ND, NE, NV, NY, OK, PA, TN, TX, VA, WA, WV, WY	AZ, CO, GA, HI, LA, ME, OK, PA, SD, TX	CO, GA, HI, IA, IN, ME, ND, NE, NV, OK, PA, SD, TN, TX, VA, WA, WY	CO, ME, MO, ND, NE, OK, SD	AZ, GA, HI, IA, ID, IL, IN, KS, ME, MO, MS, MT, NC, ND, NE, NY, OH, OK, SD, TX, UT, VA, WA, WV, WY	CO, GA, HI, IA, ID, IL, IN, ME, MO, ND, NE, NV, NY, OH, OK, PA, SD, TX, VA, WA, WY	AL, AK, AZ, CA, DE, GA, HI, IA, ID, IL, IN, KS, LA, MA, MD, ME, MI, MN, MO, MS, MT, NC, ND, NE, NJ, NM, NV, NY, OH, OK, PA, RI, SC, SD, TN, TX, UT, VA, WA, WV, WY	AL, AK, AR, AZ, CA, CO, CT, DE, GA, IA, ID, IL, IN, KS, LA, MA, MD, ME, MI, MN, MO, MS, MT, NC, ND, NE, NJ, NM, NV, NY, OH, OK, PA, RI, SC, SD, TN, TX, UT, VA, WA, WV, WY

CSA = Controlled Substances Act.

Note: For further information on Federal scheduling actions, see the DEA's website at [http://www.deadiversion.usdoj.gov/schedules/orangebook/a\\_sched\\_alpha.pdf](http://www.deadiversion.usdoj.gov/schedules/orangebook/a_sched_alpha.pdf). For further information on State statutes, see <http://law.justia.com/codes> and the State-specific legislative websites, such as Hawaii's at [http://hawaii.gov/dcca/pvl/hrs/hrs\\_pvl\\_329.pdf](http://hawaii.gov/dcca/pvl/hrs/hrs_pvl_329.pdf) and South Dakota's at <http://legis.state.sd.us/statutes/DisplayStatute.aspx?Type=Statute&Statute=34-20B-14>.

<sup>a</sup> See this report's appendix for the chemical names of these drugs.

<sup>d</sup> Permanent scheduling occurred September 2004.

<sup>b</sup> Permanent scheduling occurred March 2004.

<sup>e</sup> Permanent scheduling occurred September 1994.

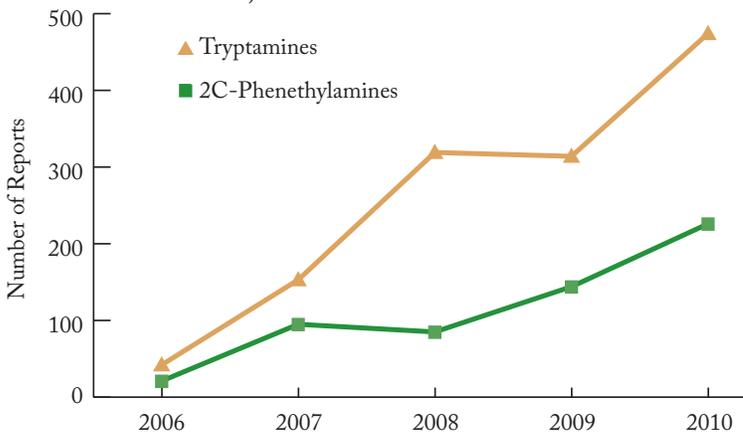
<sup>c</sup> Permanent scheduling occurred June 1995.

<sup>f</sup> Statutes could not be verified for the following: KY, NH, OR, VT, WI, and Washington, DC.

## National and Regional Estimates

This section presents national and regional estimates for reports of 2C-phenethylamines, piperazines, and tryptamines that were submitted to State and local forensic laboratories and analyzed within three months of the calendar year reporting period. From 2006 to 2010, the estimated number of 2C-phenethylamines, piperazines, and tryptamines reported to NFLIS showed an increase (Figures 1 and 2). Piperazines peaked in 2009 and experienced a decline from 2009 to 2010. The 2C-phenethylamines increased from an estimated 28 reports in 2006 to 228 reports in 2010 (Table 2). Similarly, piperazines increased from an estimated 16 reports in 2006 to 11,012 reports in 2010. The estimated number of tryptamine reports to State and local laboratories rose from 42 reports in 2006 to 474 reports in 2010.

**Figure 1** 2C-Phenethylamine and Tryptamine Reports to NFLIS, 2006-2010



**Figure 2** Piperazine Reports to NFLIS, 2006-2010

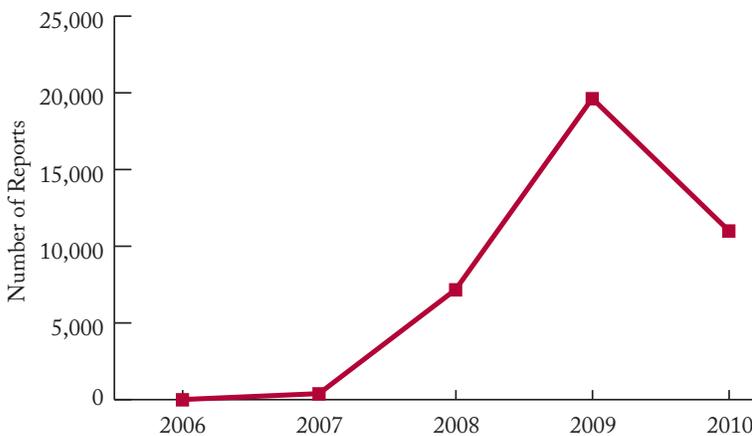
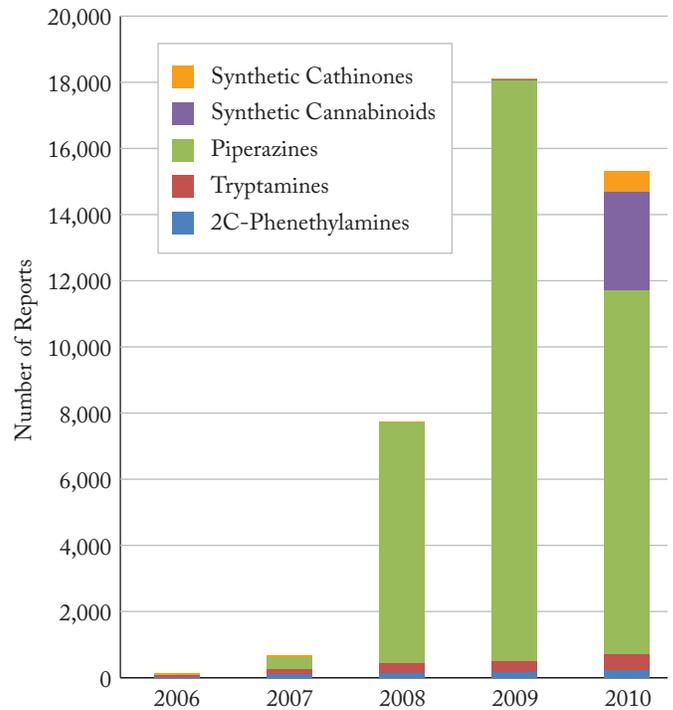


Figure 3 compares changes in these emerging drug categories and, for comparison purposes, synthetic cathinones and cannabinoids, two additional drugs recently highlighted in a NFLIS publication.<sup>3</sup> In 2009, piperazines represented 97% of the total drug reports in these categories of emerging drugs, followed by tryptamines (2%), then by 2C-phenethylamines, synthetic cannabinoids, and synthetic cathinones (each less than 1%). Just one year later, the order of the drug categories in NFLIS changed to piperazines (72%), synthetic cannabinoids (19%), synthetic cathinones (4%), tryptamines (3%), and 2C-phenethylamines (2%). Prior to 2009, no synthetic cannabinoids had been reported to NFLIS, and synthetic cathinones were relatively stable at approximately 50 reports annually. In 2006, all synthetic drug categories combined totaled slightly more than 150 reports.

**Figure 3** Emerging Drug Categories Reporting to NFLIS, 2006-2010



<sup>3</sup> U.S. Drug Enforcement Administration, Office of Diversion Control. (2011). *National Forensic Laboratory Information System Special Report: Synthetic Cannabinoids and Synthetic Cathinones Reported in NFLIS, 2009-2010*. Springfield, VA: U.S. Drug Enforcement Administration. See <https://www.nflis.deadiversion.usdoj.gov/Reports.aspx>.

### The DEA's System To Retrieve Information from Drug Evidence

**II (STRIDE)** collects the results of drug evidence analyzed at DEA laboratories. STRIDE reflects evidence submitted by the DEA, other Federal law enforcement agencies, and some local law enforcement agencies that was obtained during drug seizures, undercover drug buys, and other activities. STRIDE captures data on both domestic and international drug cases; however, the following results describe only those drugs seized in the United States. From January 2006 through June 2011, STRIDE received 144 reports of 2C-phenethylamines, 6,201 reports of piperazines,

and 526 reports of tryptamines. During 2010, a total of 76,857 drugs were submitted to STRIDE and analyzed by March 31, 2011. Of these, there were 19 reports of 2C-phenethylamines, 1,783 reports of piperazines, and 39 reports of tryptamines. Most of the 2C-phenethylamine reports were 2C-B and 2C-I, while BZP and TMFP were the most common piperazines reported to STRIDE (with 963 and 802 reports, respectively). Although a majority of the 2010 tryptamine reports were DMT (28 reports), 5-MeO-DIPT (126 reports) was the most frequent tryptamine reported to STRIDE in the first six months of 2011.

**Table 2** 2C-Phenethylamine, Piperazine, and Tryptamine Reports to NFLIS, 2006 and 2010

Drug	2006		2010	
	Number	Percent	Number	Percent
<b>2C-Phenethylamines<sup>a</sup></b>				
2C-B	13	46.4%	88	38.6%
2C-E	0	0.0%	75	32.9%
2C-I <sup>c</sup>	7	25.0%	52	22.8%
2C-T-2 <sup>c</sup>	6	21.4%	6	2.6%
2C-T-7	0	0.0%	3	1.3%
2C-C <sup>c</sup>	0	0.0%	3	1.3%
2C-P	0	0.0%	1	0.4%
2C-H <sup>c</sup>	2	7.1%	0	0.0%
<b>Total 2C-Phenethylamines</b>	<b>28</b>	<b>100.0%</b>	<b>228</b>	<b>100.0%</b>
<b>Piperazines<sup>a</sup></b>				
BZP	NR <sup>b</sup>	NR <sup>b</sup>	8,784	79.8%
TFMPP <sup>c</sup>	1	6.3%	2,022	18.4%
mCPP <sup>c</sup>	4	25.0%	139	1.3%
DBZP <sup>c</sup>	0	0.0%	34	0.3%
pFPP <sup>c</sup>	0	0.0%	23	0.2%
MeOPP <sup>c</sup>	0	0.0%	8	0.1%
pCPP <sup>c</sup>	0	0.0%	NR <sup>b</sup>	NR <sup>b</sup>
MOPIP <sup>c</sup>	1	6.3%	0	0.0%
<b>Total Piperazines</b>	<b>16</b>	<b>100.0%</b>	<b>11,012</b>	<b>100.0%</b>
<b>Tryptamines<sup>a</sup></b>				
DMT	28	66.7%	375	79.1%
5-MeO-DIPT	0	0.0%	62	13.1%
5-MeO-DPT	0	0.0%	16	3.4%
4-ACO-DMT <sup>c</sup>	0	0.0%	9	1.9%
5-MeO-DMT	4	9.5%	5	1.1%
5-MeO-MIPT <sup>c</sup>	0	0.0%	2	0.4%
5-MeO-AMT	4	9.5%	1	0.2%
5-MeO-DET <sup>c</sup>	5	11.9%	1	0.2%
4-MeO-MIPT <sup>c</sup>	0	0.0%	1	0.2%
5-MT <sup>c</sup>	0	0.0%	1	0.2%
AMT	0	0.0%	1	0.2%
DPT <sup>c</sup>	1	2.4%	0	0.0%
<b>Total Tryptamines</b>	<b>42</b>	<b>100.0%</b>	<b>474</b>	<b>100.0%</b>

Note: Percentages may not sum to 100% because of rounding.

<sup>a</sup> The following drugs were not reported to NFLIS during 2006 and 2010: 2C-T-4, 2C-D, 2C-T-21, 4-ACO-DIPT, 4-ACO-MIPT, 4-OH-DIPT, 4-OH-MIPT, 5-HT, AET, DET, 5-MeO-DALT, DIPT, and NMT.

<sup>b</sup> The estimate for this drug is not reported (NR) because it does not meet standards of precision and reliability.

<sup>c</sup> Noncontrolled drug.

During 2010, nearly two-fifths of 2C-phenethylamines were identified as 2C-B (39%), 33% as 2C-E, and 23% as 2C-I (Table 2). During the first six months of 2011, State and local laboratories identified 102 2C-phenethylamine reports (not shown in table).

The vast majority of the piperazine reports in 2010 were identified as either BZP (80%) or TFMPP (18%). In the first half of 2011, BZP and TFMPP reports appeared to be consistent with similar 2010 reports at 4,180 and 1,084, respectively.

In 2010, DMT (79%) and 5-MeO-DIPT (13%) accounted for the vast majority of tryptamine reports. During the first half of 2011, there were an estimated 950 reports of 5-MeO-DIPT, making it the highest reported tryptamine to NFLIS during this six-month period.

## Drug Abuse Warning Network (DAWN)

DAWN is a public health surveillance system operated by the Substance Abuse and Mental Health Services Administration (SAMHSA), an agency of the U.S. Department of Health and Human Services. To track the impact of drug use, misuse, and abuse in the United States, DAWN monitors (a) drug-related hospital emergency department (ED) visits in a representative sample of several hundred hospitals and (b) drug-related deaths reported by select medical examiner and coroner offices in 37 States.

From 2006 to 2010, ED visits involving phenethylamines, piperazines, and tryptamines constituted small rare events, and the findings were withheld from publication because of low precision and/or privacy concerns. Similar to NFLIS, among drug-related ED visits, there was some evidence of 2C-B, 2C-T-7, BZP, and TFMPP, although the annual counts in the DAWN ED data were all under 30 for these drugs. Among drug-related fatalities reported in DAWN from 2006 to 2010, BZP was identified in four deaths. Two additional piperazines (mCPP, TFMPP) and two 2C-phenethylamines (2C-B, 2C-T-7) were each noted in four or fewer deaths.



4-bromo-2,5-dimethoxyphenethylamine (2C-B)

## Prevalence of Use of Selected Tryptamines in NSDUH

SAMHSA's annual National Survey on Drug Use and Health (NSDUH) is the primary source of statistical information on the use of illegal drugs, alcohol, and tobacco by the U.S. civilian, noninstitutionalized population aged 12 or older. According to the 2010 NSDUH,<sup>4</sup> lifetime use of DMT, AMT, or 5-MeO-DIPT among persons aged 12 or older remained stable between 2006 and 2009, at 0.3% annually, but increased significantly in 2010 to 0.5% ( $\alpha = 0.01$ ). Among persons aged 18 to 25, 1.3% were lifetime users in 2010, which was higher than the percentages in 2006 (0.9%) to 2008

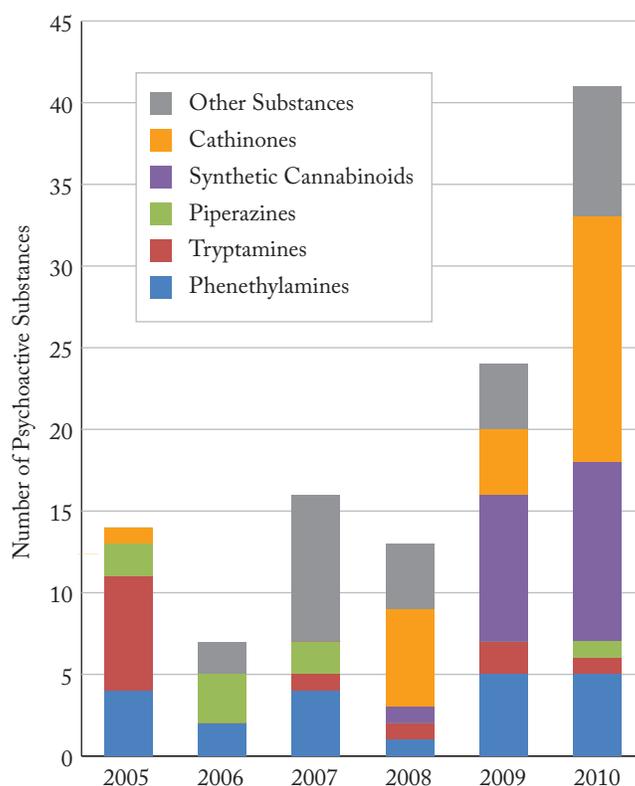
(0.8% in 2007 and 2008) ( $\alpha = 0.05$  for 2006 vs. 2010 and  $\alpha = 0.01$  for 2007 and 2008 vs. 2010). The prevalence of use among persons aged 26 or older also increased significantly between 2009 and 2010, from 0.2% to 0.4% ( $\alpha = 0.05$ ). In 2010, 0.7% of males and 0.3% of females were lifetime users. Between 2009 and 2010, lifetime use of DMT, AMT, or 5-MeO-DIPT increased significantly among males, from 0.5% to 0.7% ( $\alpha = 0.05$ ). Past year use of DMT, AMT, or 5-MeO-DIPT among persons aged 12 or older remained unchanged between 2008 and 2010, at 0.1% annually.

## International Data (EMCDDA)

Internationally, 2C-phenethylamines, piperazines, and tryptamines are also on the rise as abused psychoactive substances. Frequently, the drug abuse trends experienced in Europe and other parts of the world, such as Japan, are early warning signs for the United States. In 2005, the member states of the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) and Europol began monitoring the appearance and distribution of new psychoactive substances as a means to provide information quickly and effectively on reported adverse drug reactions and on promoting drug control.

According to the EMCDDA in December 2011,<sup>5</sup> these psychoactive substances include any "new narcotic or psychotropic drug, in pure form or in preparation that is not controlled by the 1961 United Nations Single Convention on Narcotic Drugs or the 1971 United Nations Convention on Psychotropic Substances, but which may pose a public health threat comparable to that posed by substances listed in these conventions." The early warning drug surveillance system throughout the European Union "collects, appraises and rapidly disseminates information on new drugs and products containing them." Currently, this transnational system monitors approximately 150 substances, with 24 new psychoactive substances identified in 2009 and 41 in 2010 (Figure 4). The phenethylamines accounted for five new substances in both years, while tryptamines accounted for two substances in 2009 and one substance in 2010. One new piperazine was reported in 2010. The number of newly identified psychoactive substances almost tripled from 2005 to 2010.

**Figure 4** Number of New Psychoactive Substances Reported to the European Early Warning System, 2005-2010



Note: This figure was adapted from the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) (see footnote 5). The phenethylamines reported include 2C-phenethylamines and others.

<sup>4</sup> Center for Behavioral Health Statistics and Quality. (2011). Tables 7.27A and 7.27B. In *Results from the 2010 National Survey on Drug Use and Health: Detailed tables*. Rockville, MD: Substance Abuse and Mental Health Services Administration. See <http://www.samhsa.gov/data/NSDUH/2k10ResultsTables/Web/HTML/TOC.htm>.

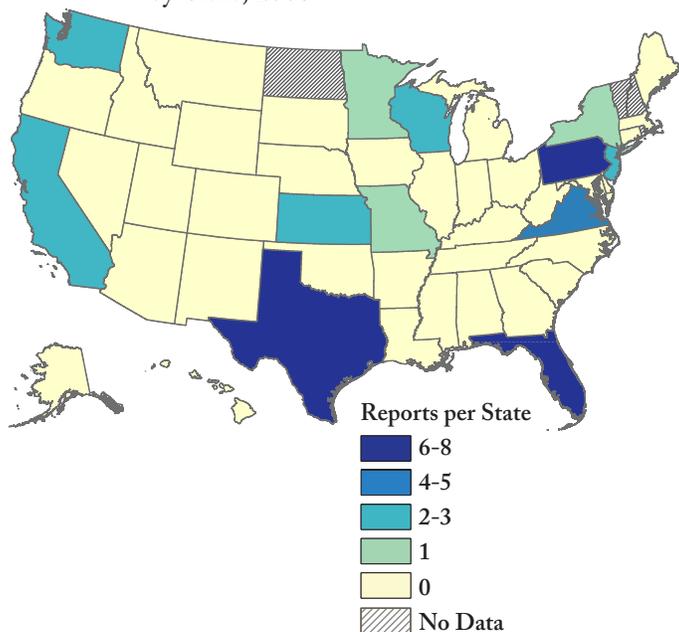
<sup>5</sup> The EMCDDA quotation in this paragraph and Figure 4 are from the following publication: European Monitoring Centre for Drugs and Drug Addiction. (2011, December 14). *Responding to new psychoactive substances* (Drugs in Focus 22). Retrieved from <http://www.emcdda.europa.eu/publications/drugs-in-focus/responding-to-new-psychoactive-substances>. Also see the following related publication: Council of the European Union (J. Krecké, President). (2005, May 20). Council decision 2005/387/JHA of 10 May 2005 on the information exchange, risk-assessment and control of new psychoactive substances. *Official Journal of the European Union*, L 127/32. Retrieved from <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2005:127:0032:0037:EN:PDF>

## 2C-Phenethylamines, Piperazines, and Tryptamines, by State, in NFLIS, 2006 and 2010

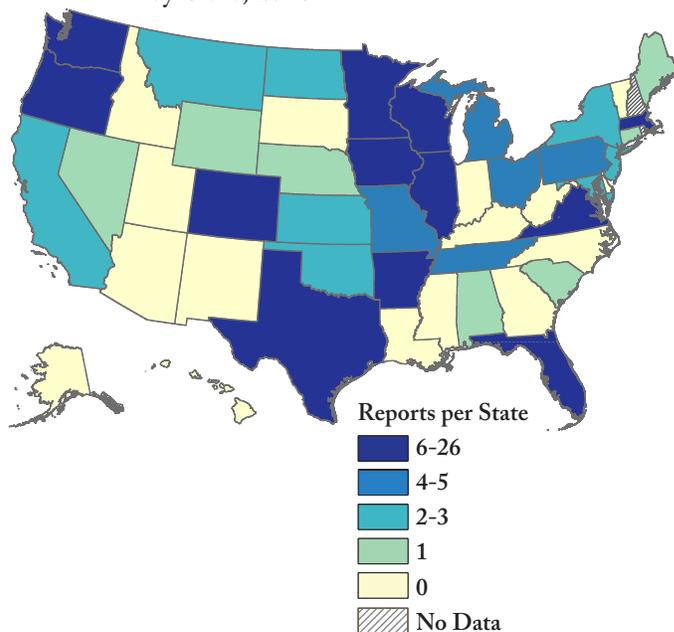
This section presents NFLIS data at the State level on 2C-phenethylamines, piperazines, and tryptamines reported to NFLIS. As shown in Figures 5.1 and 5.2, 2C-phenethylamines were identified in 32 States during 2010 compared with 12 States in 2006. Regionally in 2010, there were 44 reports of 2C-phenethylamines in the West, 70 reports in the Midwest, 32 reports in the Northeast, and 83 reports in the South. A total of seven States reported piperazines in 2006 (Figure 6.1) compared

with 44 States in 2010 (Figure 6.2). Regionally in 2010, there were 910 reports of piperazines in the West, 2,330 reports in the Midwest, 1,591 reports in the Northeast, and 6,181 reports in the South. A total of 17 States reported tryptamines to NFLIS in 2006 (Figure 7.1) compared with 35 States in 2010 (Figure 7.2). In 2010, there were 71 reports of tryptamines in the West, 105 reports in the Midwest, 102 reports in the Northeast, and 196 reports in the South.

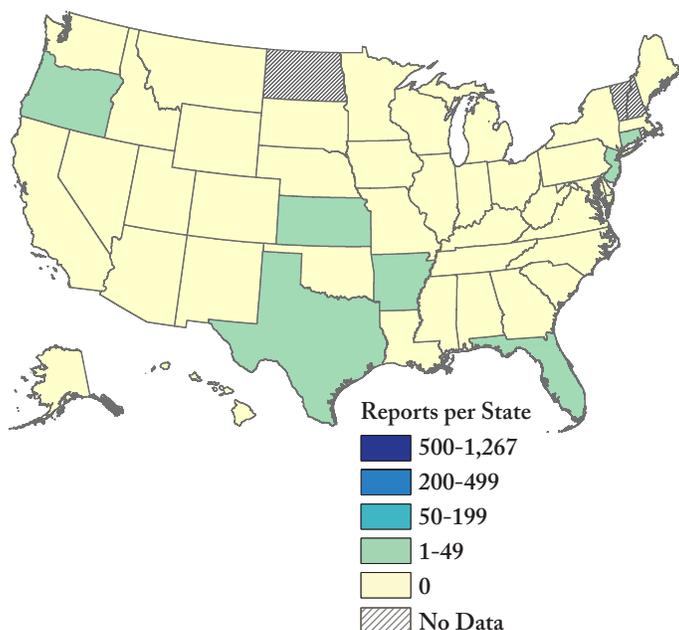
**Figure 5.1** 2C-Phenethylamine Reports to NFLIS, by State, 2006



**Figure 5.2** 2C-Phenethylamine Reports to NFLIS, by State, 2010



**Figure 6.1** Piperazine Reports to NFLIS, by State, 2006



**Figure 6.2** Piperazine Reports to NFLIS, by State, 2010

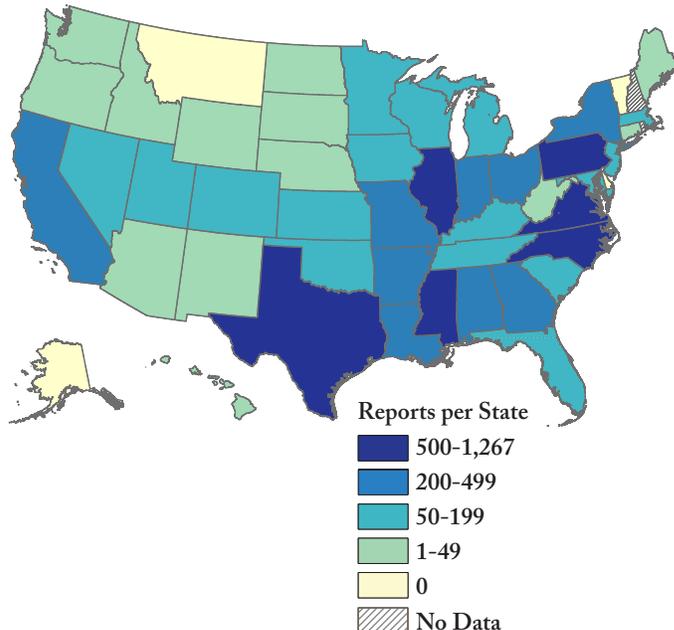


Figure 7.1 Tryptamine Reports to NFLIS, by State, 2006

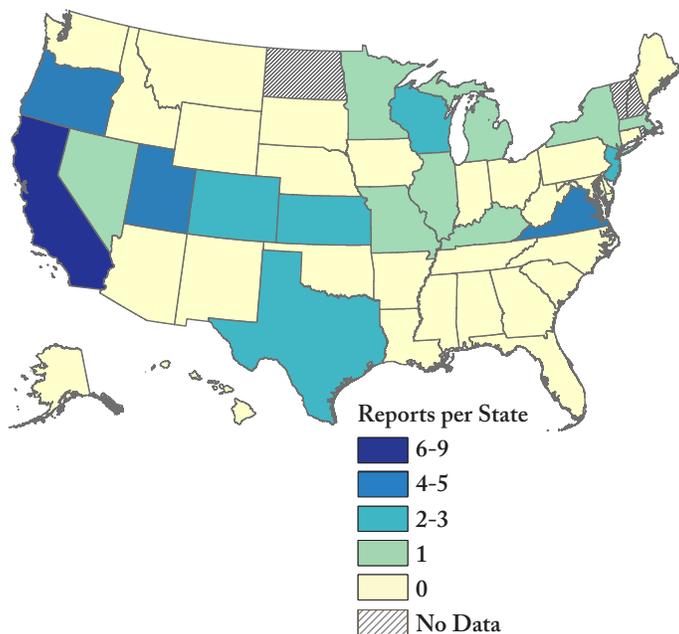
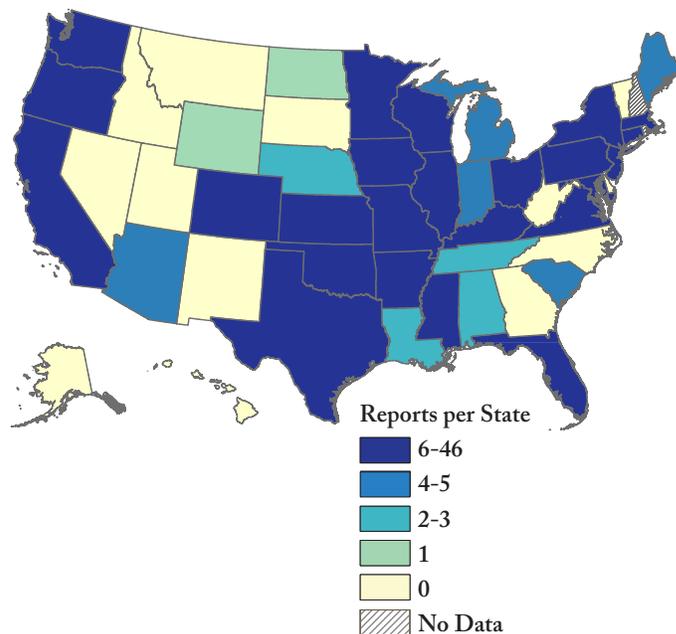


Figure 7.2 Tryptamine Reports to NFLIS, by State, 2010



Appendix: Chemical Names of 2C-Phenethylamines, Piperazines, and Tryptamines

2C-Phenethylamines	
Common Name	Chemical Name
2C-P	2,5-dimethoxy-4-(N)-propylphenethylamine
2C-C <sup>c</sup>	2,5-dimethoxy-4-chlorophenethylamine
2C-E	2,5-dimethoxy-4-ethylphenethylamine
2C-T-2 <sup>c</sup>	2,5-dimethoxy-4-ethylthiophenethylamine
2C-I <sup>a,c</sup>	2,5-dimethoxy-4-iodophenethylamine
2C-T-4	2,5-dimethoxy-4-isopropylthiophenethylamine
2C-D <sup>c</sup>	2,5-dimethoxy-4-methylphenethylamine
2C-T-7 <sup>a</sup>	2,5-dimethoxy-4N-propylthiophenethylamine
2C-H <sup>c</sup>	2,5-dimethoxyphenethylamine
2C-B <sup>a</sup>	4-bromo-2,5-dimethoxyphenethylamine
2C-T-21 <sup>c</sup>	4-(2-fluoroethylthio)-2,5-dimethoxyphenethylamine

Piperazines	
Common Name	Chemical Name
MOPIP <sup>c</sup>	1-(2-methoxyphenyl)-piperazine
TFMPP <sup>a,b,c</sup>	1-(3-trifluoromethylphenyl)-piperazine
pCPP <sup>c</sup>	1-(4-chlorophenyl)-piperazine
DBZP <sup>c</sup>	1,4-dibenzylpiperazine
pFPP <sup>c</sup>	4-fluorophenylpiperazine
MeOPP <sup>c</sup>	4-methoxyphenylpiperazine
mCPP <sup>c</sup>	1-(3-chlorophenyl)-piperazine
BZP <sup>a,b</sup>	N-benzylpiperazine

Tryptamines	
Common Name	Chemical Name
4-ACO-DIPT <sup>c</sup>	4-acetoxy-N,N-diisopropyltryptamine
4-ACO-DMT <sup>c</sup>	4-acetoxy-N,N-dimethyltryptamine
4-ACO-MIPT <sup>c</sup>	4-acetoxy-N-methyl-N-isopropyltryptamine
4-OH-DIPT <sup>c</sup>	4-hydroxy-N,N-diisopropyltryptamine
4-OH-MIPT <sup>c</sup>	4-hydroxy-N-methyl-N-isopropyltryptamine
4-MeO-MIPT <sup>c</sup>	4-methoxy-N-methyl-N-isopropyltryptamine
5-HT <sup>c</sup>	5-hydroxytryptamine
5-MeO-AMT	5-methoxy-alpha-methyltryptamine
5-MeO-DET <sup>c</sup>	5-methoxy-N,N-diethyltryptamine
5-MeO-DIPT <sup>a</sup>	5-methoxy-N,N-diisopropyltryptamine
5-MeO-DMT	5-methoxy-N,N-dimethyltryptamine
5-MeO-DPT	5-methoxy-N,N-dipropyltryptamine
5-MeO-MIPT <sup>c</sup>	5-methoxy-N-methyl-N-isopropyltryptamine
5-MT <sup>c</sup>	5-methoxytryptamine
AET	alpha-ethyltryptamine
AMT <sup>a</sup>	alpha-methyltryptamine
DET	diethyltryptamine
DMT	N,N-dimethyltryptamine
DPT <sup>c</sup>	dipropyltryptamine
5-MeO-DALT <sup>c</sup>	N,N-diallyl-5-methoxytryptamine
DIPT <sup>c</sup>	N,N-diisopropyltryptamine
NMT	N-methyltryptamine

<sup>a</sup> On DEA's list of drugs and chemicals of concern at [http://www.deadiversion.usdoj.gov/drugs\\_concern/](http://www.deadiversion.usdoj.gov/drugs_concern/).

<sup>b</sup> Listed as one of the top 25 drugs reported to NFLIS in 2008 (BZP only), 2009, and 2010. For example, see the 2010 NFLIS Annual Report at <https://www.nflis.deadiversion.usdoj.gov/Reports.aspx>.

<sup>c</sup> Noncontrolled drug, which may be considered on an individual basis under the Federal Analogue Act, 21 U.S.C. (United States Code) 802 (32) and 21 U.S.C. 813.

**Methodology:** A summary of the NFLIS estimation methodology can be found in the *NFLIS National Estimates Methodology* publication at <https://www.nflis.deadiversion.usdoj.gov/Reports.aspx>.

**Public Domain Notice:** All material appearing in this publication is in the public domain and may be reproduced or copied without permission from the DEA. However, this publication may *not* be reproduced or distributed for a fee without the specific, written authorization of the U.S. Drug Enforcement Administration, U.S. Department of Justice. Citation of the source is appreciated. Suggested citation:

U.S. Drug Enforcement Administration, Office of Diversion Control. (2012). *National Forensic Laboratory Information System Special Report: Emerging 2C-Phenethylamines, Piperazines, and Tryptamines in NFLIS, 2006-2011*. Springfield, VA: U.S. Drug Enforcement Administration.

**Obtaining Copies of This Publication:** Electronic copies of this publication can be downloaded from the NFLIS website at <https://www.nflis.deadiversion.usdoj.gov>.

## Special Report:

# Emerging 2C-Phenethylamines, Piperazines, and Tryptamines in NFLIS, 2006-2011



U.S. Drug Enforcement Administration  
Office of Diversion Control  
8701 Morrissette Drive  
Springfield, VA 22152

April 2012