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## 'Ice epidemic'? Trends in methamphetamine use from three Victorian surveillance systems

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Victorian media have been widely reporting an 'ice crisis'. Since January 2014, more than 100 articles on the negative impacts of methamphetamine – an illicit stimulant mainly in powder ('speed') or crystalline ('ice') forms – were published in the state's two leading newspapers. Headlines suggest that methamphetamine use is "skyrocketing",<sup>1</sup> there is a state-wide "epidemic",<sup>1-3</sup> and use has "spread to every level of society".<sup>4</sup>

This concern is underpinned partly by surveillance data showing increased methamphetamine-related harms, e.g. methamphetamine-related ambulance attendances in Victoria doubled between

2010/11 and 2011/12.<sup>5</sup> Law enforcement indicators such as border detections and seizures also increased. There are reports of greater ease of obtaining methamphetamine and increased drug quality.<sup>6</sup>

However, it remains unclear whether there has been an actual increase in the prevalence of methamphetamine use or increased harms have been driven by factors such as greater purity and/or increased frequency of use among people already using the drug. The most recent National Drug Strategy Household Survey (NDSHS) revealed stable prevalence of recent (past-year) methamphetamine use at 2.1% in 2010 and 2013.<sup>7</sup> Although the NDSHS is representative, it is a general population sample and therefore the prevalence of the use of drugs such as methamphetamine is low.

Media attention, anecdotal evidence and data relating to harms and arrests have influenced policy. A Victorian Parliamentary Inquiry has been established and the Victorian Government has allocated new funds to treatment and research.<sup>8,9</sup> The deleterious effects of methamphetamine use are important to address; however, international experience suggests that responses to methamphetamine use and harms are often ill-informed and possibly counter-productive.<sup>10,11</sup> Policy must be based on sound evidence to meet the needs of methamphetamine users appropriately. In this study, we triangulated data from three different drug surveillance systems to determine whether use of methamphetamine has changed since 2008 to inform targeting of intervention efforts.

### Methods

We analysed data from three Melbourne-based drug monitoring systems: the Big Day Out (BDO) study and the Victorian arm of the Ecstasy and Related Drugs Reporting System (EDRS) and the Illicit Drug Reporting System (IDRS). All have been described in detail elsewhere.<sup>12-14</sup>

Each study involved annual cross-sectional surveys of key target groups: the BDO surveys about 1,000 young music festival attendees, the IDRS interviews 150 people who inject drugs and the EDRS interviews 100 ecstasy/psychostimulant users. (From 2012, the EDRS altered criteria for participation from at least monthly ecstasy use to at least monthly psychostimulant use). The IDRS and EDRS specifically ask about use of different methamphetamine forms, including frequency of use in the six months preceding interview.

The BDO includes one question on past-month use of any methamphetamine form.

We analysed data from 2008 onwards to assess trends in prevalence of methamphetamine use among the three samples using  $\chi^2$  test for trend, and a Cochrane Armitage test for departure from linearity. We assessed trends in median days of use using Poisson regression. BDO data through to 2014 were available, but only data to 2013 were available for the IDRS and EDRS.

### Results

Study sample characteristics have been described previously.<sup>12-14</sup>

Recent use of any methamphetamine was reported by 8% of BDO attendees, 75% of EDRS participants, and 65% of IDRS participants (Table 1). BDO data showed a non-linear decrease in the percentage of participants reporting past-month methamphetamine use. EDRS and IDRS data showed no significant change in prevalence of methamphetamine use, but the EDRS data revealed an increase in frequency of use between 2008 and 2014. EDRS and IDRS showed significant increases in both the prevalence and frequency of recent ice use.

### Discussion

The data suggest that for the three target populations, overall prevalence of methamphetamine use did not increase during the period 2008 to 2013/2014, confirming NDSHS findings.<sup>7</sup> A pattern of increased frequency of ice use was evident for the IDRS and EDRS samples, producing a significant increase in methamphetamine use overall for the EDRS sample, but suggesting a shift to ice use from other forms of methamphetamine for the IDRS sample.

Ice is typically the purest form of methamphetamine.<sup>15,16</sup> Increased frequency of ice use among IDRS and EDRS participants highlights the potential for greater harm to users of the drug. This evidence of more frequent use of ice among drug-using populations, combined with dramatic declines in purity-adjusted price in recent years,<sup>17</sup> are a more plausible explanation for the rising harms observed in Victoria than any dramatic increase in prevalence of use among the broader population.

A limitation of this analysis is that all data were obtained from cross-sectional purposive samples and may not be representative of the general population or of all methamphetamine users.<sup>12-14,18</sup> Furthermore, the samples are largely restricted to

Melbourne residents; however, the rate of ambulance attendances in regional Victoria is lower than in metropolitan Melbourne.<sup>5</sup>

We have shown largely stable patterns of methamphetamine use among three sentinel populations in Melbourne, with increased frequency of ice use restricted to subgroups already using methamphetamine. It is important that policymakers, health professionals and the media recognise that such patterns could underpin the higher rates of observed harm in Victoria, rather than unsubstantiated increases in methamphetamine use among the general population. Our findings ought to be taken into account when developing Victoria and Australia's public health response to methamphetamine use, as they suggest the need for targeted prevention and treatment programs instead of population-wide interventions that, based on overseas experience, are of minimal benefit.

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**Table 1: Recent use of methamphetamine reported in three surveillance systems, Victoria, 2008-2013/14.**

	Big Day Out 2008-2014	Ecstasy and Related Drug Reporting System 2008-2013				Illicit Drug Reporting System 2008-2013			
	MA <sup>a</sup> use in past month n/N (%)	MA use in past six months n/N (%)	Median days MA used in past six months (IQR)	ICE use in past six months n/N (%)	Median days ICE used past six months (IQR)	MA use in past six months n/N (%)	Median days MA used in past six months (IQR)	ICE use in past six months n/N (%)	Median days ICE used in past six months (IQR)
2008-2013	825/9582 (8.5)	452/601 (75.2)	6 (3-24)	184/601 (30.6)	6 (2-20)	587/899 (65.3)	13 (4-45)	411/901 (45.6)	6 (2-24)
2008	338/2330 (14.4)	77/100 (77.0)	6 (3-13)	22/100 (22.0)	4.5 (2-13)	103/150 (68.7)	12 (5-42)	58/150 (38.7)	6 (2-12)
2009	85/1035 (8.0)	72/100 (72.0)	5 (2-12)	13/100 (13.0)	3 (1-6)	105/150 (70.0)	14 (5-62)	48/150 (32.0)	4.5 (1-19.5)
2010	82/1351 (6.0)	72/100 (72.0)	5 (2-20)	18/100 (18.0)	3 (1-10)	90/151 (59.6)	10 (3-25)	55/151 (36.4)	5 (2-15)
2011	118/1354 (8.7)	76/101 (75.2)	12 (4-39)	38/101 (37.6)	8 (3-14)	97/150 (64.7)	18 (5-30)	79/150 (52.7)	6 (3-20)
2012	72/1255 (5.7)	84/100 (84.0)	10 (6-24)	48/100 (48.0)	8.5 (3-27)	101/148 (68.2)	12 (4-48)	89/150 (59.3)	6 (2-35)
2013	61/1362 (4.3)	71/100 (71.0)	8 (3-24)	45/100 (45.0)	10 (2-24)	91/150 (60.7)	15 (4-50)	82/150 (54.7)	13 (4-48)
2014	69/895 (7.6)	--	--	--	--	--	--	--	--
Statistical significance of trend <sup>b</sup>	p<0.001 <sup>c</sup>	p=0.28	p<0.01	p<0.001 <sup>c</sup>	p=0.01	p=0.24	p=0.70	p<0.001 <sup>c</sup>	p<0.001

a: Methamphetamine (MA) use refers to all forms of the drug, including ice.

b: For prevalence of use a  $\chi^2$  test for trend was used, for median days a Poisson regression was used. Statistically significant results are bolded.

c: Trend significantly departs from linearity (p<0.05; Cochrane Armitage test).