



Department of Health and Social Services

William J Streur, Commissioner
Ward B Hurlburt, MD, MPH, CMO

3601 C Street, Suite 540
Anchorage, AK 99503

www.epi.alaska.gov

Division of Public Health

Kerre Shelton, Director

Local (907) 269-8000
24 Hour Emergency 1-800-478-0084

Editors:

Joe McLaughlin, MD, MPH
Louisa Castrodale, DVM, MPH

Bulletin No. 26 November 15, 2013

Huffing in Alaska

Background

On October 20, 2013, a 31-year-old man from a village in western Alaska was found dead on top of a propane tank due to suspected intentional propane inhalation, or huffing.

Huffing is a nationwide problem, and as many as 200 inhalant-related fatalities occur in the United States annually.¹ Huffing, or inhalant abuse, is the intentional inhalation of a volatile substance to achieve a euphoric state.^{1,2} Numerous inhalant products are readily available and thus are often the first substances to be abused by adolescents, making these volatile substances potential gateway drugs.³ The adverse health effects of huffing are considerable, and include dysarthria, hearing loss, neuropathies, impaired judgment, asphyxiation, seizures, coma, and death. Inhalant users typically begin huffing at younger ages, and display a higher lifetime prevalence of substance abuse and mental health problems.^{1,2} The purpose of this *Bulletin* is to provide a descriptive overview of the epidemiology of huffing in Alaska and to offer prevention and improved surveillance recommendations.

Methods

We obtained self-reported huffing prevalence data from the Alaska Youth Risk Behavior Survey (YRBS),⁴ which targeted a statewide sample of students from the following schools:

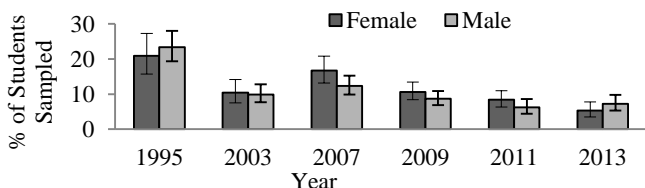
- *traditional high schools* (THS)—data were collected every odd year from 1995 to 2013, except 1997 and 2001;
- *alternative high schools* (AHS; for students at risk of not graduating from THS)—data were collected every odd year from 2009 to 2013; and
- *correctional high schools* (CHS; for incarcerated students)—data were collected in 2011.

We also reviewed huffing admission data, reliably available during 2009–2012, from the Alaska Automated Information Management System (AKAIMS).

Results

YRBS data showed a steady decrease in the prevalence of THS students who reported ever having used an inhalant during 1995–2013 (Figure). Sufficient comparison data on huffing prevalence for all three school types were only available for 2011. During 2011, the prevalence of reported one-time inhalant use was highest among CHS (28%), followed by AHS (18%), and THS students (7%; Table).

Figure: Percentage of Traditional High School Students Surveyed Who Reported Ever Huffing — AK YRBS, 1995–2013*



* To assure statistical representativeness, the Figure only shows data for the years with a response rate >60%.⁴

In 2011, the self-reported prevalence of huffing in THS was highest among Hispanic students (15%), followed by White students (8%) and Alaska Native students (5%). The self-

reported prevalence of huffing in AHS was highest among white students (23%), followed by Alaska Native students (15%); data were not available for other races due to the low number of participants. In 2011, the highest prevalence rates by sex and age among THS and AHS students were in females aged ≤15 years (11%) and males aged ≥18 years (19%), respectively. In 2011, THS huffing prevalence rates by region were highest in the Interior (12%), followed by the Gulf Coast (10%), Anchorage-Mat-Su (9%), Southeast (8%), Northern (8%), and Southwest (6%).

AKAIMS data revealed approximately 30 hospital admissions annually from 2009–2012. The number of admissions was relatively consistent during these years. Demographic information regarding these patients was not available.

Discussion

The decrease in self-reported prevalence of inhalant use among THS students during 1995–2013 is encouraging and might be due in part to focused educational efforts.^{6,7} Concerningly, however, in 2011, the reported prevalence of huffing among AHS and CHS students was 2.6 and 4 times higher, respectively, than that of THS students. Additional work is needed to better understand the factors that contribute to these disparities and to provide tailored interventions.

Inhalant abuse is a challenging public health problem to address because the products are not illegal and abusers can be difficult to identify. AKAIMS data likely considerably underestimate the burden of huffing-related hospitalizations, but improved data should become increasingly more available as inhalant abuse-specific ICD 10 codes are more regularly used by health care providers.

Recommendations

1. Anyone who suspects a person is intoxicated from huffing should call the Poison Control Center at 1-800-222-1222.
2. Health care providers and others who interact with young people should educate parents and children about the dangers of huffing and be vigilant about identifying huffing activity; online resources are available to help.²
3. Parents should limit their children's accessibility to products that could be used for huffing.²
4. Health care providers should code huffing incidents under the specific ICD 10 codes (F18.1–F18.99).

References

1. US DHHS NIDA. Inhalant Abuse Research Report. 2012. Available at: <http://www.drugabuse.gov/sites/default/files/rrinhalants.pdf>
2. Inhalant Abuse Prevention. Available at: <http://www.inhalants.org/>
3. Young SJ, Longstaffe S, Tenenbein M. Inhalant abuse and the abuse of other drugs. *Am J Drug Alcohol Abuse* 1999;25:731-41.
4. Alaska Youth Risk Behavior Survey Results. Available at: <http://dhss.alaska.gov/dph/Chronic/Pages/yrbs/yrbs.aspx>
5. Alaska's Automated Information Management System. Available at: <http://dhss.alaska.gov/dbh/Pages/akaims/default.aspx>
6. UAA ICHS. Alaska Natives Combating Substance Abuse and Related Violence Through Self-Healing: A Report for the People. 1999. http://www.uaa.alaska.edu/instituteforcircumpolarhealthstudies/caas/projects/report_afn.pdf
7. Johnson K, Courser M, Holder H. A community prevention intervention to reduce youth from inhaling and ingesting harmful legal products. *J Drug Educ* 2007;37(3):227-47.

Table. Percentage of Students Who Reported Ever Sniffing Glue or Inhaling Paints or Sprays to Get High — AK YRBS, 2011

| Age group | Traditional School | | Alternative School | | Correctional School | |
|---------------|--------------------|--------------|--------------------|--------------|---------------------|--------------|
| | Male % (n) | Female % (n) | Male % (n) | Female % (n) | Male % (n) | Female % (n) |
| 15 or younger | 6.1 (248) | 10.6 (290) | * (60) | * (79) | * (20) | * (7) |
| 16 or 17 | 6.7 (310) | 8.0 (306) | 16.7 (226) | 18.1 (230) | * (50) | * (8) |
| 18 or older | * (80) | * (65) | 19.4 (219) | 17.5 (140) | * (35) | * (5) |
| Total | 6.2 (638) | 8.4 (670) | 17.9 (505) | 18.6 (449) | 24.4(105) | * (20) |
| Overall Total | 7.3 (1313) | | 18.4 (955) | | 27.7 (126) | |

*Data based on fewer than 100 respondents are not shown; n=number of students surveyed