1. “What experiences do you have in rehabilitation with youth and children addicted to inhalants that have additional social disadvantages and live in the streets? In Mexico, this type of drug use is more of street child and youth, who live in poverty and in gangs, the craving is over a lot of things which means: love, food, shelter, security, etc...

Are there systemic approaches? Pharmacological? What about of prevention in this situation?”

**Answer:** My practice experience is primarily with inhalant-using youth who are in residential rehabilitative care for antisocial behavior. As a group, these youth have exceptionally high levels of depression, suicidal thoughts and attempts, polysubstance use and come from highly disadvantaged social environments. Like their Mexican counterparts, inhalant-using youth in the U.S. are often poor, disenfranchised, and homeless or living in dysfunctional family settings. Prevention and treatment efforts directed to adolescent (and adult) inhalant users in the U.S. are rarely implemented. However, as you suggest, such approaches should necessarily be comprehensive in nature, given the many social, psychological, and health problems experienced by adolescent inhalant users. In the U.S., several drugs have been evaluated in case studies, particularly agents that might be useful in the treatment of inhalant withdrawal symptoms or inhalant-related psychoses. The findings in this area are scant and highly tentative at this point. Systematic psychosocial interventions specific to inhalant use are also rarely applied or evaluated. At present, most inhalant users probably do not receive substance misuse treatment and the small proportion that do participate in such treatment largely receive generic substance abuse treatment and not inhalant-specific interventions. Inhalant misuse has been called “the hidden epidemic” in the U.S. and this is an accurate characterization of the current status of the problem. Even among drug abuse professionals, there is little recognition of the extent of inhalant-related problems in the U.S.

2. “Do youth ever use different solvents at the same time?”

**Answer:** In my surveys of adolescents in residential care, we have asked youth about their use of multiple inhalants. The average number of inhalants used by adolescent inhalant users was more than four and nearly 80 percent of users had used two or more inhalants. Thus, polyinhalant use is the norm in some adolescent and adult populations of inhalant users. However, we have not asked about use of multiple inhalants in the same episode of use. My research team is currently conducting a study of inhalant-related deaths using medical examiner data over the course of a decade in North Carolina. In a number of these deaths,
we have identified simultaneous use of multiple inhalants immediately preceding a death due to inhalant use. Of course, it is also important to note that many inhalants include multiple chemical constituents; for example, butane and propane are commonly found together as propellants in abused inhalants. More studies of polyinhalant use is needed, particularly ethnographic studies examining how such use occurs, in what contexts, and involving which agents.

3. “I recently watched the Disney movie, Ice Age 3, and there was a scene referring to the overwhelmingly positive (in comparison to the small attention the negative received) of abusing inhalants. Has any research looked at the role of the media in showing inhalants in a positive light?”

Answer: I am not aware of any research that has examined this issue in the U.S. However, I can recall similar positive media portrayals of “laughing gas” and “helium” inhalation, both of which can be dangerous in some circumstances. It would be interesting to examine the prevalence and characteristics of inhalant-related media portrayals internationally, since they are likely to be especially influential given the general public’s low level of awareness of inhalant-related dangers.

4. “You mention in the presentation that youth in trouble with the law are at increased risk of use, why is this?”

Answer: Although it is not currently possible to provide a definitive answer to this important question, given the nascent nature of research on inhalants, one can conceive of a few possible explanations. First, it is conceivable (and available research supports this contention) that youth high in sensation seeking or novelty seeking are more likely to initiate inhalant use and to engage in antisocial behavior than youth with lower levels of sensation/novelty seeking. Thus, it is possible that temperament or social context or some combination of factors independently give rise to inhalant use and antisocial behavior. Explanations of this sort are referred to as “third-factor” accounts. It is also possible that inhalant intoxication could disinhibit aggressive and other antisocial behaviors directly and contribute to antisocial acting out or that subcultures that emerge in association with inhalant use could promote antisocial behavior. Some combination of these factors is probably at play. For example, youth high in sensation seeking might initiate inhalant use at relatively high rates and tend to commit unlawful acts while intoxicated, perhaps eventually experiencing neuropsychological impairments attributable to their inhalant use that further increase the likelihood of antisocial or violent behavior.

5. “How exactly is inhalant use a disorder? Is there a standardized treatment for it? And what is the difference between inhalant abuse and dependence?”

Answer: Inhalant use disorders are distinguished from inhalant use in the American Psychiatric Association’s Diagnostic and Statistical Manual of Mental Disorders-IV. Particularly in the short term, some inhalant use may not be associated with obvious social or physical impairments. If an individual’s inhalant use is time-limited and/or largely free of serious adverse consequences, it may not warrant an Inhalant Abuse or Dependence diagnosis. Inhalant Abuse and Inhalant Dependence represent two categories of serious inhalant problems
differing in severity. Persons meeting one of the four Inhalant Abuse criteria receive a diagnosis of Inhalant Abuse. These persons evidence significant social, legal, occupational and/or other impairments related to inhalant use. Inhalant Dependence is a disorder characterized by between three and six symptoms of inhalant dependence including loss of control over inhalant use, continued inhalant use despite psychological or physical problems attributable to such use, increasing tolerance to inhalants, and other related symptoms. Inhalant Abuse and Inhalant Dependence are considered disorders because they are characterized by serious functional impairments and/or distress in relation to such use.

6. “You mention in the presentation that there is increasing similarity between girls and boys using inhalants in the United States. Why do you think this is?”

**Answer:** In the U.S., boys generally have higher rates of alcohol and drug use than girls; thus, inhalant use is atypical in that girls and boys often evidence similar rates of use. Surveys of some populations actually show higher rates of inhalant use among girls than boys. Girls commonly encounter inhalants that boys have limited exposure to, such as nail polish and nail polish remover. However, it is currently unclear why a sex difference is often not seen with inhalant use and why trends in such differences over time may be changing. This is an important area for future research.

Additional materials related to this lecture and the other lectures in this series may be accessed in the Resource Center of the NIDA International Virtual Collaboratory (http://nivc.perpich.com/) in the Volatile Solvent Abuse folder. Please contact mgrossman@perpich.com should you have any questions or comments.