Recreational nitrous oxide misuse in Michigan: What providers need to know

Public Health Bulletin for Health Care Providers – September 2026

Dear colleagues,

Nitrous oxide misuse is a growing concern in Michigan, particularly among young adults and in larger cities and their surrounding communities. Recreational nitrous oxide products — often sold as “whippets,” flavored chargers or whipped cream canisters — are widely available in smoke shops, vape stores, convenience stores and online marketplaces.

While nitrous oxide is commonly used safely in medical and dental settings, repeated or heavy recreational use can lead to serious health effects, including neurologic symptoms, mental health concerns and other medical complications. Because these products are often marketed as legal or low risk, many people may not fully understand the potential harms associated with misuse.

Data from the Michigan Poison and Drug Information Center (MiPDC) suggests a **sharp increase** in adverse medical encounters associated with nitrous oxide misuse in recent years.

Recognizing nitrous oxide misuse can be challenging. Patients may not think to report use, and symptoms can develop gradually over time. Clinicians may not recognize non-specific neurological or psychiatric symptoms as related to potential nitrous oxide use. Increasing awareness among clinicians, health care providers, parents, caregivers and community partners is important to helping identify concerns earlier and reducing harm.

This bulletin provides an overview of current Michigan data, common health effects and considerations for screening, patient education and clinical care.

Sincerely,

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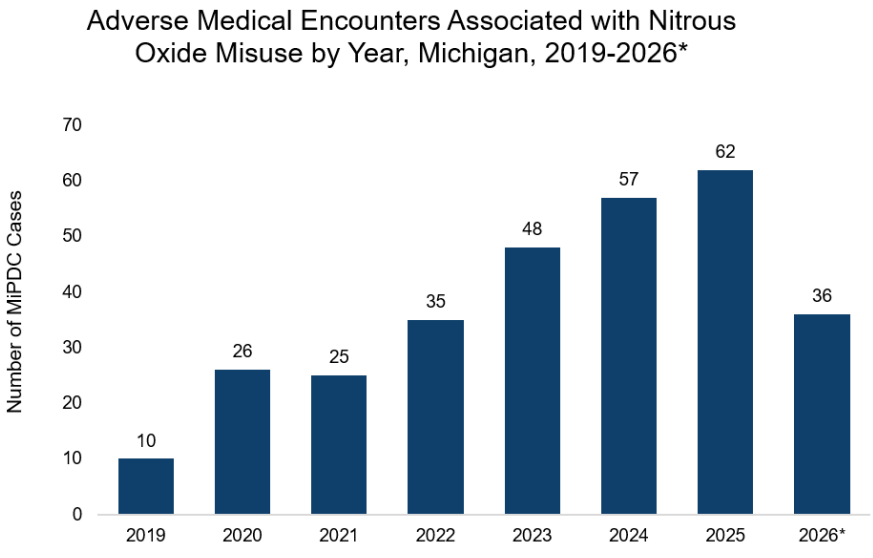
Epidemiology of nitrous oxide misuse

From 2019 through 2023, 144 poison center cases, 132 emergency department visits and 192 emergency medical services (EMS) responses involving nitrous oxide were identified in Michigan. More recently, from January 2024 through May 14, 2026, MiPDC identified 112 poison center cases involving intentional recreational nitrous oxide misuse causing injury. Case encounters increased from 35 in 2024 to 47 in 2025, with 30 cases already reported by mid-May 2026 — meaning more than 60% of the previous year's total had already been reached in less than half the year.

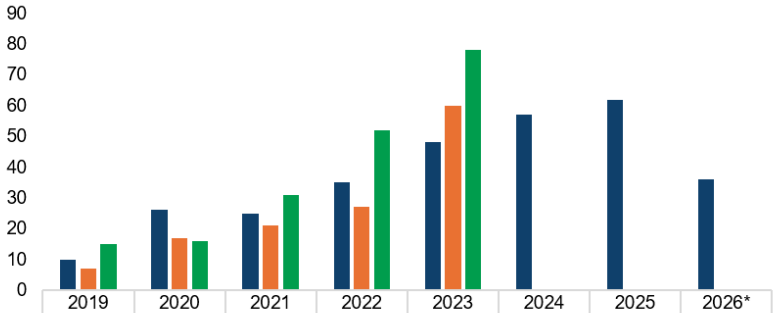
Nitrous oxide events occurred most frequently among people ages 20 through 39 and primarily in urban and suburban communities. Of the 112 identified cases, 99 individuals presented to a hospital, including 38 hospital admissions and 10 ICU admissions. **Nearly half of all reported cases resulted in medically significant outcomes.** The most commonly reported effects were neurologic in nature, including numbness, peripheral neuropathy, muscle weakness and gait instability.



Source: Michigan Poison & Drug Information Center Data, January 2019 - May 2026.
**Data for 2026 is only through May 2026 and therefore does not represent a full year.*

Among EMS responses involving nitrous oxide, 14 fatalities were identified, including three suspected suicides. Polysubstance involvement occurred in approximately 30% of poison center cases, most commonly involving benzodiazepines, cannabis/THC and alcohol. Commonly reported clinical effects included tachycardia, neurologic symptoms and numbness.

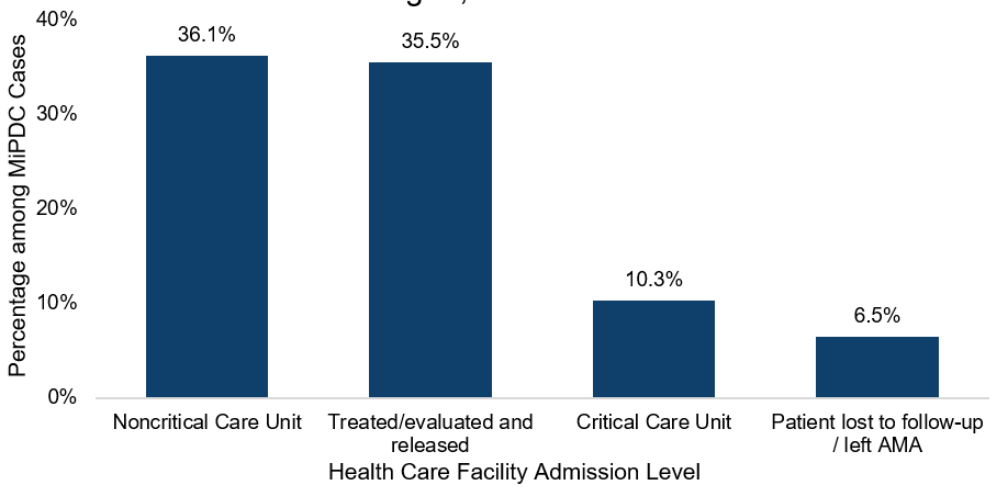
Adverse Medical Encounters Associated with Nitrous Oxide Misuse by Year, Michigan, 2019-2026*



	2019	2020	2021	2022	2023	2024	2025	2026*
MiPDC Cases	10	26	25	35	48	57	62	36
ED Visits	7	17	21	27	60			
EMS Responses	15	16	31	52	78			

Source: Michigan Poison & Drug Information Center Data, January 2019 - May 2026.
**Data for 2026 is only through May 2026 and therefore does not represent a full year.*

Adverse Medical Encounters Related to Nitrous Oxide Misuse by Health Care Facility Admission Level, Michigan, 2024-2026*



Source: Michigan Poison & Drug Information Center Data, January 2024 - May 2026.
**Data for 2026 is only through May 2026 and therefore does not represent a full year.*
Cases with missing health care facility (HCF) data and categories with small counts are not displayed.

Recognizing recreational nitrous oxide products

Recreational nitrous oxide products may not immediately be recognized by patients, caregivers or clinicians as substances of concern. Products are often thought of as a safe and legal means to induce euphoria (or to “get high”) and are sold openly in retail settings.

Nitrous oxide products may include:

- Small metal whipped cream chargers or “whippets.”
- Large flavored nitrous oxide canisters or tanks.
- Balloons filled with nitrous oxide gas.
- Products marketed for culinary or whipped cream dispenser use.
- Flavored nitrous oxide chargers or dispensers.

(Photos courtesy of MiPDC.)

Products are commonly sold in:

- Smoke shops and vape stores.
- Gas stations and convenience stores.
- Online marketplaces.
- Party supply or novelty stores.

Some products are marketed with colorful packaging or flavors, which may lead young people or first-time-users to underestimate the product's harmfulness. Increased product size and concentration may also contribute to heavier use patterns and increased health risks.

Large-volume flavored nitrous oxide tanks are becoming increasingly available and marketed toward younger consumers. Nitrous oxide products are often packaged similarly to energy drinks and novelty products, which may contribute to perceptions that they are low risk. Patients may not identify nitrous oxide as a "drug" during screening and may instead describe use as:

- Whippets or whippits.
- Laughing gas.
- NOS.
- Galaxy gas.
- Chargers.
- Balloons.

Health risks and clinical considerations

Nitrous oxide misuse can cause serious health effects, especially with repeated or heavy use. While some effects may appear mild at first, ongoing use can lead to lasting neurologic, psychiatric and physical health complications.

Nitrous oxide intoxication may also impair judgment, coordination and reaction time. Because effects can occur rapidly and wear off quickly, some individuals may underestimate their level of impairment and engage in risky behaviors such as driving while impaired.

Neurological effects

One of the most concerning risks associated with nitrous oxide misuse is neurologic injury related to vitamin B12 disruption. In some cases, patients may develop symptoms gradually over weeks or months, making the connection to nitrous oxide use easy to miss. Patients may present with:

- Numbness or tingling in the hands and feet.
- Weakness or difficulty walking.
- Balance problems or falls.
- Muscle weakness.

- Changes in sensation.
- Difficulty with coordination.

Some patients may develop severe or permanent neurologic disability despite treatment. Case reports in public health literature have documented prolonged impairment and incomplete recovery after chronic misuse.

Importantly, serum vitamin B12 levels may appear normal despite clinically significant toxicity. Elevated methylmalonic acid and homocysteine levels may help identify functional vitamin B12 deficiency.

Mental health and behavioral effects

Nitrous oxide misuse has also been associated with:

- Anxiety.
- Depression.
- Mood changes.
- Memory problems.
- Confusion or delirium.
- Hallucinations or paranoia.

These symptoms may occur alongside physical symptoms or may present independently.

Other health concerns

Heavy or chronic nitrous oxide misuse has also been linked to:

- Anemia.
- Blood clots, including deep vein thrombosis and pulmonary embolism.
- Increased heart rate.
- Shortness of breath or oxygen deprivation.
- Injuries related to impaired judgment or loss of consciousness.

Acute injuries can also occur from improper use of nitrous oxide tanks or chargers, including frostbite injuries and asphyxiation; and hand injuries can result from faulty dispensers that explode in user's hands.

Polysubstance use considerations

Nitrous oxide is often used alongside other substances. MIPDC identified polysubstance involvement in approximately 30% of nitrous oxide-related cases, most commonly:

- Benzodiazepines.

- Cannabis/THC products.
- Alcohol.

Concurrent substance use may increase the risk of overdose, impairment and other serious health complications.

What this means for clinicians

There is currently no reliable screening test for nitrous oxide misuse. Diagnosis often depends on patient history and recognition of common symptoms. MDHHS encourages providers to incorporate nitrous oxide into routine substance use assessments and patient education.

1. **Screen routinely.**
   Patients may not think of nitrous oxide as a drug or may not disclose use unless asked directly.
   - Patients may use slang terms rather than "nitrous oxide" when describing use, including "whippets," "NOS," "Galaxy Gas" or flavored chargers.
   - Include inhalants and recreational gases in substance-use screening.
   - Ask where and how products are being obtained.

2. **Consider nitrous oxide in unexplained neurological symptoms.**
   Nitrous oxide misuse can contribute to neurologic symptoms that may initially appear unrelated to substance use.
   - Ask about nitrous oxide use in patients with numbness, tingling or weakness.
   - Consider use in patients reporting balance issues or difficulty walking.
   - Be aware that symptoms may develop gradually over time.

3. **Assess for polysubstance use.**
   Nitrous oxide is often used alongside other substances, increasing health and safety risks.
   - Ask about alcohol, cannabis, benzodiazepines and other drug use.
   - Discuss overdose and impairment risks associated with combined use.
   - Monitor for sedation, confusion or other signs of intoxication.

4. **Support early intervention.**

Patients may view nitrous oxide as low risk because products are sold openly in stores and online.

- Use nonjudgmental language when discussing use.
- Educate patients on potential neurologic and mental health risks.
- Encourage patients to seek care early if symptoms develop.

5. **Educate patients and caregivers.**
   Awareness remains low among many patients, parents and caregivers.
   - Explain that repeated use can cause serious health effects.
   - Explain that nitrous oxide use should be stopped immediately if neurological or psychological symptoms occur. Reinforce that legal or retail products are not necessarily safe.
   - Share prevention messaging with adolescents and young adults when appropriate.

6. **Encourage safer use practices.**
   Some individuals may continue using nitrous oxide despite known risks. Providers can help reduce harm through practical, nonjudgmental safety messaging.
   - Encourage individuals not to use nitrous oxide alone or before driving.
   - Discuss the increased risks associated with repeated or heavy use, especially alongside alcohol or other substances.
   - Connect patients to harm reduction services and community resources available in Michigan.

Additional Resources

Nitrous Oxide Education

- US Nitrous Oxide Mortality.
- Nitrous Oxide Misuse.
- Tackling the growing burden of nitrous oxide-induced public health harms.
- Whippits, nitrous oxide, and the dangers of legal highs.
- CDC Notes from the Field: Recreational Nitrous Oxide Misuse — Michigan, 2019–2023.

Data and Surveillance

- Michigan Poison and Drug Information Center.
- Notes from the Field: Recreational Nitrous Oxide Misuse — Michigan, 2019–2023 | MMWR.
- MDHHS MI Overdose Data to Action Dashboard.
- MDHHS Michigan's Crisis Response.
- CDC Drug Overdose Surveillance and Epidemiology (DOSE) System.
    - DOSE Dashboard: Nonfatal Overdose Syndromic Surveillance Data.
    - DOSE Dashboard: Nonfatal Overdose Emergency Department and Inpatient Hospitalization Discharge Data.
- CDC State Unintentional Drug Overdose Reporting System (SUDORS).
    - SUDORS Dashboard: Fatal Drug Overdose Data.

Provider and Partner Tools

- MDHHS SUD Resources – Information for Health Professionals.
- MDHHS SUD Provider Map.
- MDHHS Naloxone Resources.
- Harm Reduction and Syringe Service Programs.