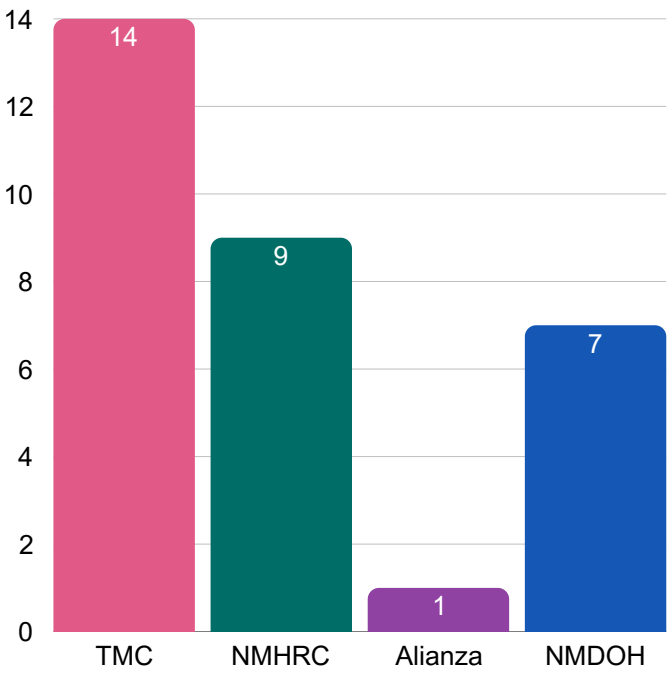
NMHealth

Harm Reduction Section

# Adulterant Checking Program Monthly Snapshot

NMHarmReduction.org

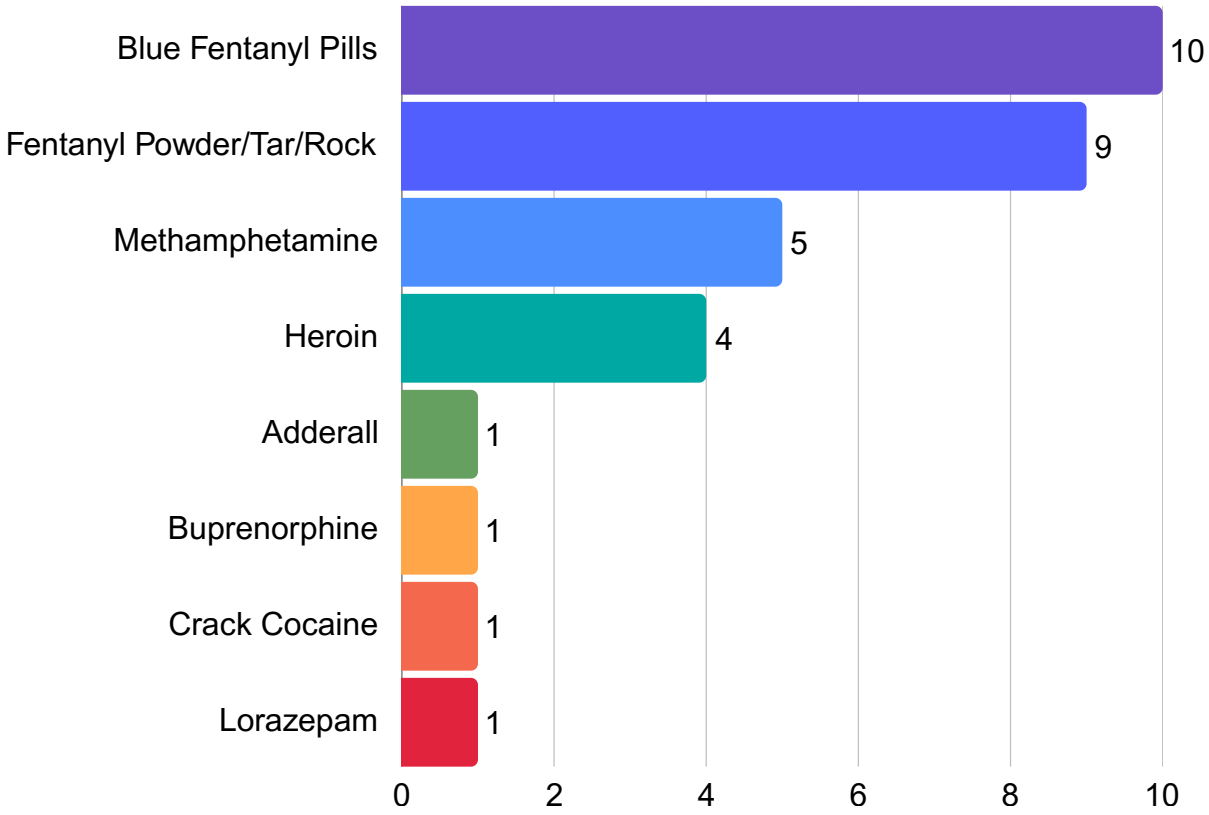
# March 2025




In March 2025, a total of **31 substances** were submitted at four sites throughout New Mexico. **32 tests** were conducted (1 methamphetamine sample had two distinctly colored crystals, one brown and one clear, both were tested separately at the Point-of-Care (POC). **27 total samples** were sent for confirmatory testing at the University of North Carolina Chapel Hill's Street Drug Analysis Lab.

- The Mountain Center, Española
- NM Harm Reduction Collaborative, ABQ
- Alianza of New Mexico, Roswell
- NMDOH Southwest Region, Las Cruces

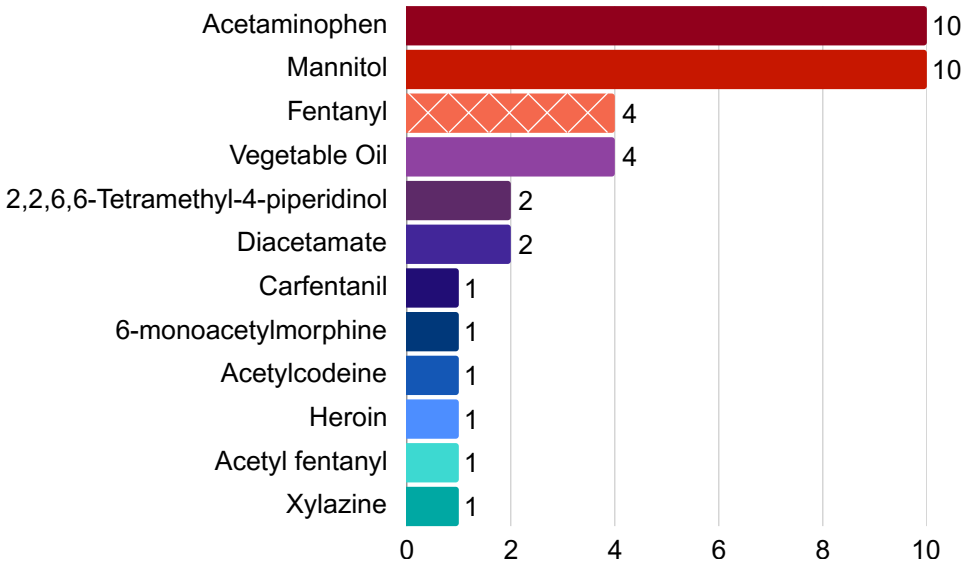
## Samples by Type (Expected Substance)




Sample type is determined by what the individual bringing the sample believes they purchased or received it as. Substances are tested using Fourier-transform infrared spectroscopy (FTIR) machines. It uses a laser and infrared light to scan and identify the different "ingredients" in a sample. It can identify well known drugs, common cuts, and other substances. It can give a rough estimate of the amount of each substance.

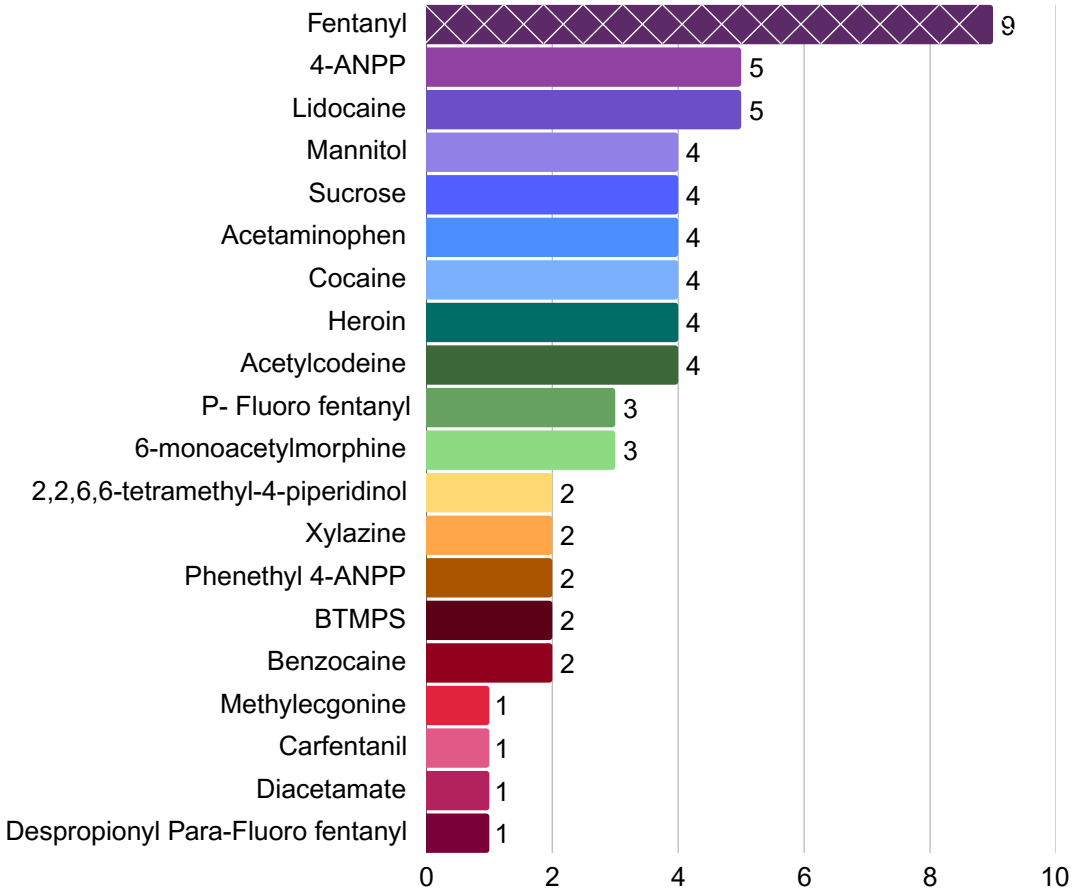
The following results show the various substances detected in 32 samples collected by the four Adulterant Checking Program sites through the New Mexico Department of Health. The contents of the samples are not mutually exclusive and there may be variations from sample to sample. The expected drug, or what it was sold to the individual as, is demarked with an ⨯. A glossary of terms can be found at the end of the document.

## Graph 1: Counterfeit M30 Fentanyl Pills “Blues” (n=10)



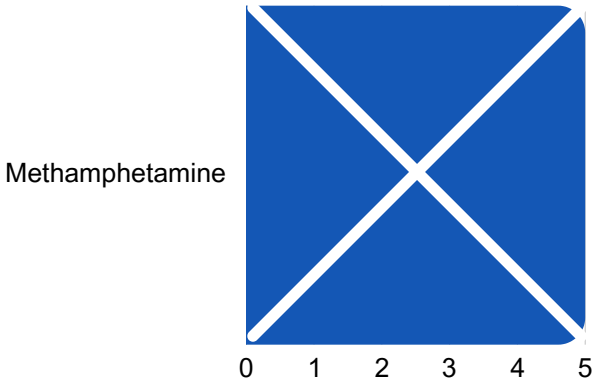

The results of **Graph 1** shows that of the 10 different pill samples expected to be fentanyl, only 4 of them contained fentanyl. The samples did contain two other opioids - heroin and carfentanil - as well as various opioid metabolites and precursors.

## Graph 2: Fentanyl Powder/Rock/Tar Formulations (n=9)



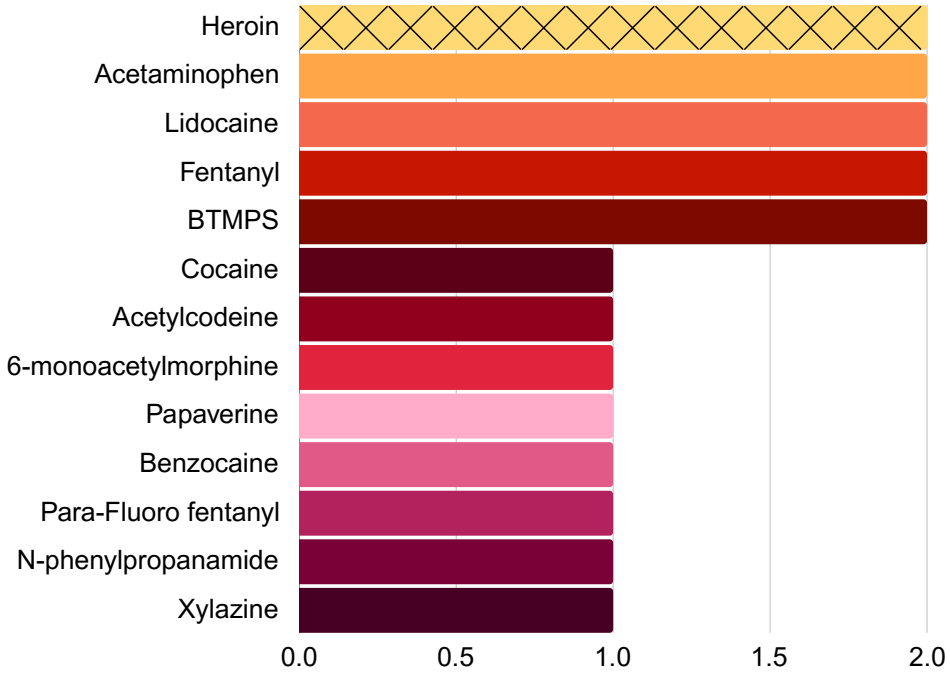

**Graph 2** shows that of the 9 samples submitted that were fentanyl powder, rock, tar, or other formulations, all 9 contained fentanyl. The amount of fentanyl present in each sample can vary. There were 20 different substances found in the samples.

## Graph 3: Methamphetamine (n=5)



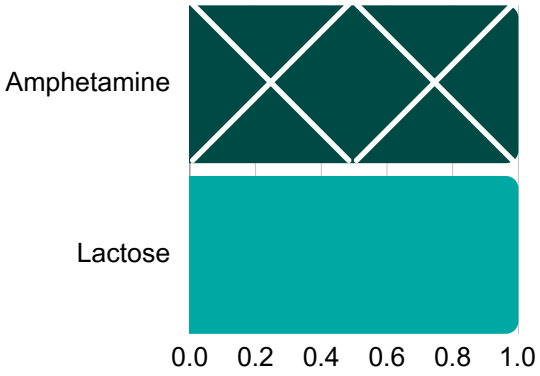

The results of **Graph 3** display that in the 5 samples of expected to be methamphetamine, the only substance detected was methamphetamine. The fentanyl test strips were also negative.

## Graph 4: Heroin (n=4)



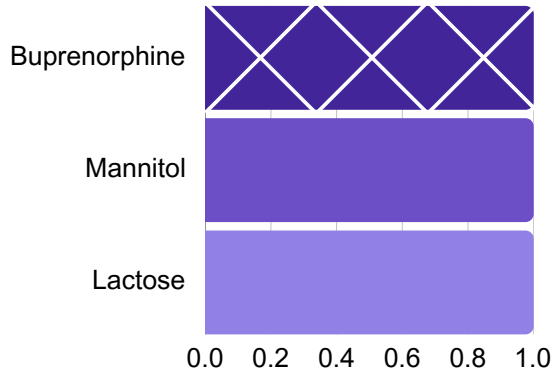

In the four samples submitted that were expected to be Heroin (Tar, “Black”), **Graph 4** shows that 2 of the samples contained heroin. Additionally, fentanyl and various fentanyl analogues, precursors, and metabolites were also detected in some of the samples.

## Graph 5: Adderall (n=1)



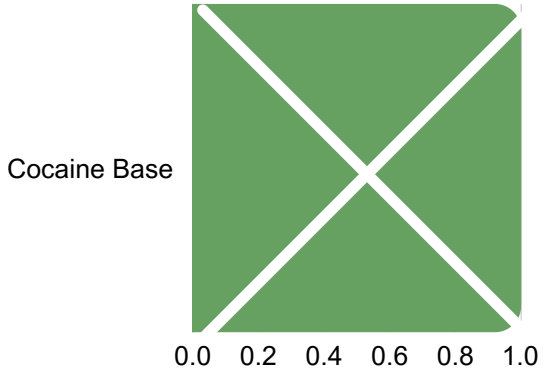

**Graph 5** shows the results for 1 submitted sample expected to be Adderall. The sample contained amphetamine and lactose, a common inactive ingredient found in medications.

## Graph 6: Buprenorphine (n=1)



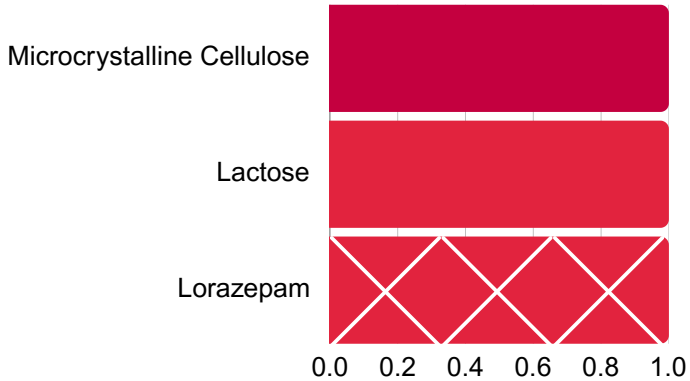

Of the 1 sample of Buprenorphine that was submitted, **Graph 6** shows that the sample did contain Buprenorphine. Mannitol and lactose were also detected.

## Graph 7: Crack Cocaine (n=1)




The results of **Graph 7** display that in the 1 sample of crack cocaine, the only substance that was detected was cocaine base. The fentanyl test strip was negative.

## Graph 8: Lorazepam (n=1)




**Graph 8** was a sample where the expected drug was lorazepam, a benzodiazepine medication more commonly known as Ativan. It is commonly used to treat anxiety, alcohol withdrawal, insomnia, and/or seizures.

***Samples are collected and analyzed by trained technicians with the Adulterant Checking Pilot Programs. Samples are tested with FTIR spectroscopy and test strip technologies at the Point-of-Care and sent for complimentary GCMS spectrometry testing at the University of North Carolina Chapel Hill's Street Drug Analysis Lab. Please contact Phillip Fiuty, Adulterant Checking Program Technical Advisor with NM Health, with further questions. Email: phil.fiuty@doh.nm.gov, Phone: (646) 581-0525.

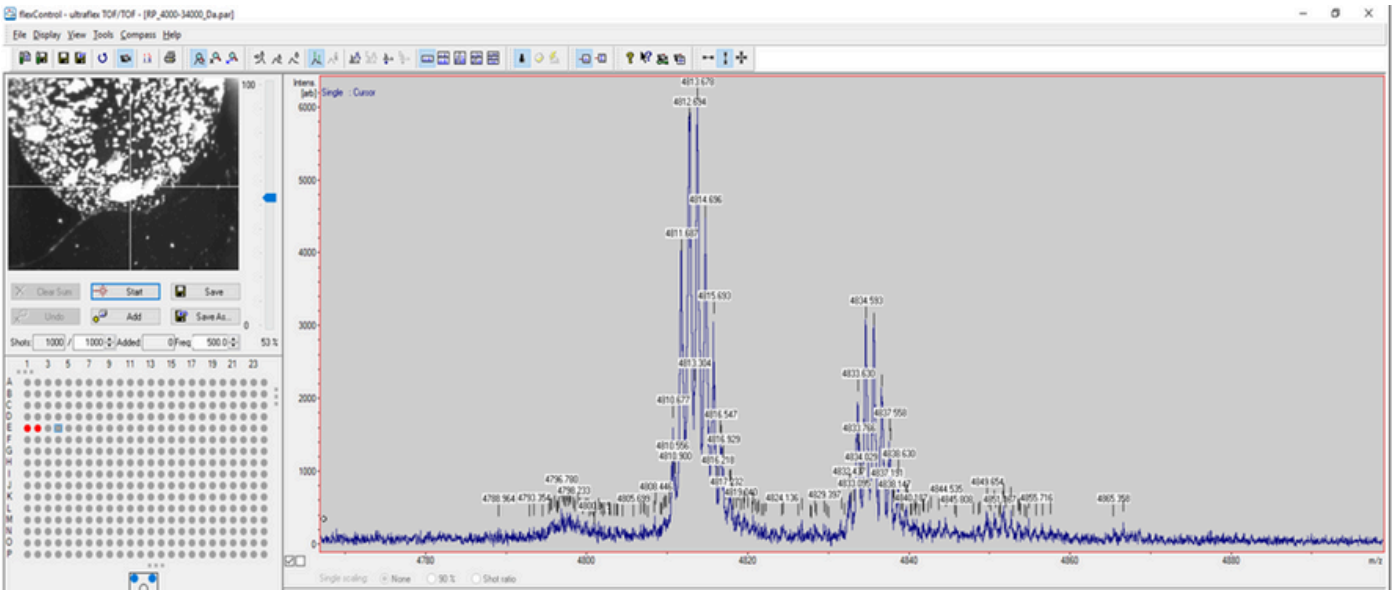
## Glossary of Words, Drugs and Chemicals

**Adulterant Checking as a tool for our community members who use hormones, steroids, and other non-narcotic medications not purchased from a pharmacy.**

***Correction from Phil Fuity, Technical Advisor on the February report: Tirzepatide (Mounjaro)***

When we originally sent the Tirzepatide sample to UNC, they told us that it was outside of the normal testing scope of their current analytical process (the molecule is too large to be detected by GCMS [4]), so they purchased a reference standard [11] and sent it to the UNC Injury Prevention Research Center, where the sample was run on two different mass spectrometers [1, 2], a Q Exactive HFX System [5] (accurate mass spectrometer) and a MALDI-ToF (Matrix-Assisted Laser Desorption/Ionization) [6] (not accurate, but meant for large molecules such as peptides and proteins). Both instruments identified the reference standard correctly but were not able to identify Tirzepatide in the sample. They thought it had a pattern like polymers but were unable to identify what it was.

On May 22nd I received a follow-up message from Jalice Manso with the Injury Prevention Research Center saying that she had wanted to re-run the sample in the MALDI because it is a tricky instrument to use. The sample prep had to be redone several times because it takes a certain level of skill to properly prepare samples for this type of spectrometer, and she was finally able to positively identify the sample as Tirzepatide after all. She also said to please disregard the previous finding with HFX that the sample was a polymer of some kind. She said that she is learning that larger molecules do "weird" things in that spectrometer, including multiple ionizations on a single molecule [8], but the MALDI was able to produce a positive identification of the sample.



This is the spectra [3] of the sample on the MALDI (the picture on the left is the close-up of the deposit that generated the spectra). The Tirzepatide mass is 4812 (so the distribution is related to the isotopes [9] of the molecule - like C13) and then the following distribution around 4834 is consistent with Tirzepatide with a sodium adduct [10]. The distribution is visible because it is zoomed in.

So, the sample reported last month as "unidentified" has since be positively identified as

Tirzepatide. Many Drug Checking programs around the country have been experiencing an increase in people presenting with samples of non-narcotic substances, such as this Tirzepatide, hormones, steroids, and other medications that are either “home-made”, purchased from online pharmacies, purchased on the street, or from dark web when they are unable to obtain them through more “legitimate” sources. During a recent national online meeting of drug checking technicians, one of the techs described an almost surreal scene at their (Pacific Northwest) harm reduction program that now has a “steady stream of gym bros” there to get their steroids checked, waiting in their lobby with their other usual harm reduction clients.

The national drug checking community, including our partners at UNC, have been working to expand in scope to be able to accommodate all community members who are concerned with their health and safety even if they don’t identify as “people who use drugs.” Our programs here in NM have access to a growing online FTIR library of non-narcotic substances at their disposal and are a possible resource for people who may be acquiring hormones, steroids, and other substances from sources other than a pharmacy.

*The preceding passage contained a few words or phrases that many people may not be readily familiar with, so here’s a few additional definitions related to the passage that come up often in drug checking:*

**Mass Spectrometry:** Mass spectrometry (MS) is a complex analytical technique where the components of a sample are separated by their mass and electrical charge. It’s used for both quantitative and qualitative chemical analysis of sample compounds. MS is used to identify unknown compounds by determining molecular weight, quantifying known compounds, and elucidating the structural and chemical properties of the molecular components. [(1)]

The instruments used in such studies are called mass spectrometers and mass spectrographs, and they operate on the principle that moving ions may be deflected by electric and magnetic fields. The two instruments differ only in the way in which the sorted charged particles are detected. In the mass spectrometer they are detected electrically, in the mass spectrograph by photographic or other nonelectrical means; the term mass spectroscope is used to include both kinds of devices. Since electrical detectors are the most commonly used spectrometers, the field is typically referred to as “mass spectrometry.”

Mass spectroscopes consist of five basic parts: a high vacuum system; a sample handling system, through which the sample to be investigated can be introduced; an ion source, in which a beam of charged particles characteristic of the sample can be produced; an analyzer, in which the beam can be separated into its components; and a detector or receiver by means of which the separated ion beams can be observed or collected. [(2)]

1) ACD/Labs: A Beginner’s Guide To Mass Spectrometry, by Baljit Bains, Marketing Communications Specialist, ACD/Labs A Beginner’s Guide to Mass Spectrometry - ACD/Labs

2) Brown, Louis, Beynon, John Herbert. "Mass Spectrometry". Encyclopedia Britannica, 30 May. 2025, https://www.britannica.com/science/mass-spectrometry. Accessed 5 June 2025.

**Spectra:** (plural of spectrum) **1-a:** a continuum of color formed when a beam of white light is dispersed (as by passage through a prism) so that its component wavelengths are arranged in order; **b:** any of various continua that resemble a color spectrum in consisting of an ordered arrangement by a particular characteristic (such as frequency or energy): such as; **(1)**: electromagnetic spectrum **(2):** radio spectrum **(3):** the range of frequencies of sound waves **(4):** mass spectrum; **c:** the representation (such as a plot) of a spectrum

**2-a:** a continuous sequence or range [3]

3) "Spectrum." Merriam-Webster.com Dictionary, Merriam-Webster, https://www.merriam-webster.com/dictionary/spectrum. Accessed 6 Jun. 2025.

**GCMS:** Gas chromatography, in analytical chemistry, is a technique for separating chemical substances in which the sample is carried by a moving gas stream through a tube packed with a finely divided solid that may be coated with a film of a liquid. Its simplicity, sensitivity, and effectiveness in separating components of mixtures, gas chromatography is widely used for quantitative and qualitative analysis of mixtures. [4] This is what our partners at UNC primarily use to identify our samples.

4) Written and fact checked by The Editors of Encyclopedia Britannica. Last Updated: May 30, 2025 • Article History https://www.britannica.com/science/gas-chromatography

**Q Exactive HFX System:** The Q Exactive HF-X MS is a mass spectrometer that provides identification and quantitation in a single analysis. It combines quadruple precursor ion selection with high-resolution, accurate-mass Orbitrap detection, making it suitable for peptides, proteins, and small molecule applications. [5]

5) https://tools.thermofisher.com/content/sfs/brochures/PS-64048-LC-MS-Q-Exactive-HF-Orbitrap-PS64048-EN.pdf

**Matrix-Assisted Laser Desorption/Ionization (MALDI):** This technique involves embedding the analyte (the molecule of interest) within a matrix material. The matrix absorbs the laser energy and helps to facilitate the desorption (the release of one substance from another, either from the surface or through the surface) and ionization of the analyte molecules. The choice of matrix depends on the type of molecules being analyzed.

1) Time-of-Flight (TOF) Analyzer: The ionized molecules are accelerated into a flight tube by an electric field. Due to the acceleration, ions of different masses will have different velocities. The time it takes for ions to travel a certain distance (the flight tube) is directly related to their mass-to-charge ratio (m/z). Lighter ions reach the detector faster than heavier ions.

2) Ion Detection: At the end of the flight tube, there is a detector that records the arrival time of ions. By measuring the time it takes for ions to travel through the flight tube, the instrument can determine their mass-to-charge ratio, and consequently, their molecular weight. [6]

6) Medicallabnotes.com/MALDI-TOF Mass Spectrometry: Introduction, Principle, Handling

**Ionization:** In chemistry and physics, any process by which electrically neutral atoms or molecules are converted to electrically charged atoms or molecules (ions) through gaining or losing electrons.

Ionization is one of the principal ways that radiation, such as charged particles and X rays, transfers its energy to matter. (7)

7) The Editors of Encyclopaedia Britannica. "ionization". Encyclopedia Britannica, 13 Jun. 2022, https://www.britannica.com/science/ionization. Accessed 6 June 2025.

**"Multiple ionizations on a single molecule":** The binding energy significantly exceeds the atomic ionization potential for an electron in a singly charged ion (and even more so in a multiply charged ion). (8)

8) Delone, N.B., Krainov, V.P. (2000). Multiple Ionization of Atoms. In: Multiphoton Processes in Atoms. Springer Series on Atoms + Plasmas, vol 13. Springer, Berlin, Heidelberg. https://doi.org/10.1007/978-3-642-57208-1_8

**Isotope:** An isotope is one of two or more species of atoms of a chemical element with the same atomic number and position in the periodic table and nearly identical chemical behavior but with different atomic masses and physical properties. Every chemical element has one or more isotopes. Not all the atoms of an element need to have the same number of neutrons in their nuclei. In fact, it is precisely the variation in the number of neutrons in the nuclei of atoms that gives rise to isotopes. Many important properties of an isotope depend on its mass. The total number of neutrons and protons, or mass number, of the nucleus gives approximately the mass measured on the "atomic-mass-unit (amu)" scale. (9)

9) Herzog, Gregory F.. "isotope". Encyclopedia Britannica, 9 May. 2025, https://www.britannica.com/science/isotope. Accessed 6 June 2025.

**Sodium Adduct:** According to the Definitions of terms relating to mass spectrometry (IUPAC Recommendations 2013), "Adduct ions are formed by the interaction of a precursor ion with one or more atoms or molecules to form an ion containing all the constituent atoms for the precursor ion as well as the additional atoms from the associated atoms or molecules." (10)

10) ACD/Labs, Common Adduct and Fragment Ions in Mass Spectrometry by Sarah Srokosz, Marketing Communications Specialist, ACD/Labs Common Adduct and Fragment Ions in Mass Spectrometry - ACD/Labs

**Reference Standard:** A drug reference standard, or the pharmaceutical reference standard, is the most characterized material suitable to test the strength, identification, quality, and purity of substances for pharmaceutical uses and medicinal products. Reference standards are the integral/basic components for medicines, both biological and chemical, active pharmaceutical ingredients and excipients (inactive ingredients) set to ensure the quality, strength, identity, and purity of medicines and foods and are provided for quality control and documentary standards. Types of reference standards include Laboratory-made Reference Standards, Company Reference Standards, Official Reference Standards, Primary Reference Standards, Secondary Reference Standards, and Supplementary Reference Standards. (11)

11) Veeprho, Reference Standards, Types, Uses, Preparation & Qualification August 19, 2020 by Dr. Venkat Shinde Reference Standards, Types, Uses, Preparation & Qualification - Veeprho

**Adulterants, Cuts, and "Laced":** These words are often used interchangeably when talking about drugs, though they each mean very different things. This often creates confusion and obscures the true nature of illicit drug manufacturing and the supply chain while simultaneously implying malicious intent that further obfuscates the realities of illicit drug sales and use at the "street", or individual level.

An **“Adulterant”** is a pharmacologically active substance usually added during the manufacturing of an illicit drug or immediately after to enhance or to mimic the drug’s effects or to facilitate administration of the drug. They can also include artifacts from the manufacturing process, such as precursors that have not been properly washed out that may have pharmacological effects of their own. An adulterant may increase the risk of adverse side effects, including overdose, and other drug interactions.

Examples of adulterants identified in NM include:

- Other illicit drugs (fentanyl, carfentanil)
- Other licit drugs or chemicals (caffeine, dextromethorphan, phenacetin, BTMPS, diphenhydramine, benzocaine, procaine, aspirin, tramadol, medetomidine, xylazine, levamisole)
- Illicit drugs from cross-contamination during the manufacture, sale, or from shared storage (methamphetamine and cocaine found in fentanyl samples)
- Precursors, intermediaries, and other leftovers from the manufacturing process (4-ANPP, despropionyl, N-phenylpropanamide, methylecoginine, acetylcodeine, 6-monoacetylmorphine, N-propionyl norfentanyl)
- Others added to facilitate administration (acetaminophen which has a similar melting and boiling point as fentanyl and may help when “smoking” it by protecting the fentanyl from burning during the vaporization).

**“Cut”**, or **“cutting agents”**, also known as “dilutants”, are inert and often easily available and inexpensive substances used to add bulk, or to make a drug easier to measure, distribute, and use, otherwise known as an “excipient.” It is extremely difficult to measure some synthetic licit and illicit drugs that are pharmacologically active in minute amounts and divide them accurately into nonlethal doses. Mixing or binding a small amount of a synthetic drug (fentanyl) with a pre-measured amount of something that is easier to accurately weigh (mannitol) is a safer and more efficient way to work with and consume potentially dangerous substances.  Simultaneously, cutting agents can add uncertainty as to the actual dose of a drug that is being ingested.

Examples of cutting agents identified in NM include mannitol, inositol, microcrystalline cellulose, flour/corn flour, and sucrose.

The definition of **“Lace”**, or **“Laced”** is to put a small amount of a substance such as alcohol, a drug, or even poison into food or drink for someone else to consume, usually with bad intent. “Getting roofied” is slang for ‘laced”, specifically when someone puts Rohypnol, a sedative and common date-rape drug, into someone else’s drink without their knowledge.

Counterfeit pills that may contain fentanyl are not “laced with fentanyl” (see below), though there have been unfortunate cases where someone, often a young or inexperienced drug user, was taken advantage of by someone who sold them counterfeit pills and told them they were legitimate prescription pills. Although these situations involved deception it does not mean that the “dealers” were intentionally lacing the pills with fentanyl. No more are there Percocet pills laced with fentanyl then there are Adderall pills laced with methamphetamine. There are counterfeit pills made to look

ike oxycodone (M30's, or "the blues") that contain fentanyl and there are counterfeit pills made to look like Adderall that contain methamphetamine.

Another context where we often hear the word "laced" used is in the common assumption that "dealers" are "lacing" methamphetamine and cocaine with fentanyl, presumably to make them "more addictive", yet no one asks themselves why these drugs that for over a century were considered some of the most addictive substances in the world are suddenly not addictive enough so that sellers need to add something like fentanyl that might kill their customers? And at the same time, we're being told that the cocaine and "new meth" are more pure and more dangerous than ever. It seems strange that something could be simultaneously pure while also being laced with fentanyl, yet this is the way that most people, including those that sell and use drugs, have been conditioned to think and talk about drugs.

Very few samples of stimulants that also contained fentanyl have been identified by drug checking programs nationally, with none being identified by NM's programs. Most of the samples positive for fentanyl are attributed to dealer mix-ups or cross contamination rather than intentional mixing pre-sale, including the stories that have made national news about overdoses among people who thought they were doing cocaine.

This study, Prevalence of fentanyl in methamphetamine and cocaine samples collected by community-based drug checking services - ScienceDirect, which included samples of methamphetamine and cocaine collected in NM, examines the pervasive "fentanyl in everything" myth. Ironically, fentanyl samples have been frequently found to contain both cocaine and methamphetamine among the other adulterants identified. This report from CFSRE, Sentinel Snapshot - Qualitative Analysis Final.pdf, shows that the fentanyl is entering the country already adulterated/contaminated with the range of adulterants that we are reporting locally. So, according to the research, it's not true that "there's fentanyl in everything", but rather that "there's everything in the fentanyl."

**Counterfeit M30 Blue Pills, known as "blues" or "the blues":** Once again, there is confusion created using the words "cut" or "laced" which often leads people to believe that ordinary prescription drugs are somehow being adulterated with fentanyl. Counterfeit pills are not cut or laced with anything, nor do they contain crushed medications mixed with fentanyl, but rather they are counterfeit pills that are made to look like common prescription pills, such as the fake M30's that often contain fentanyl and look like a 30 mg oxycodone pill, fake blue or white Adderall pills that contain methamphetamine, and fake alprazolam ("Xanax") pills that contain illicitly manufactured bromazolam (benzodiazepine). Very few, if any, of the people that we serve with the Harm Reduction Program think that these are real oxycodone pills and know that they are likely to contain fentanyl. Fentanyl Test Strips are one tool that can help minimize the risks of an illicit and unregulated drug supply.

**4-ANPP:** Is used in the synthesis of pharmaceuticals and is a precursor to fentanyl, often left behind from the synthesis and inadequate "washing", or purification, of the final product. 4-ANPP is not

known to have any psychoactive effects, but many precursors, intermediaries, and metabolites commonly found with illicitly manufactured substances do have psychopharmacological effects of their own and may contribute to an overdose and other adverse effects.

**6-monoacetylmorphine:** A metabolite of heroin left over from the manufacturing process.

**Acetylcodeine:** A metabolite of heroin left over from the manufacturing process. Codeine naturally occurring in opium turns into acetylcodeine from the process of turning morphine into heroin.

**Acetaminophen:** An NSAID ("Tylenol") commonly found with fentanyl in the USA as a bulking agent and "excipient" (an inactive substance that serves as the "vehicle" for a drug), likely due to both its availability and having some similar chemical properties to fentanyl, including both a high "melting point" and a high "boiling point." These properties help to facilitate the vaporizing of fentanyl for inhalation without burning, commonly known as "smoking" fentanyl.

**BTMPS:** An industrial plastics additive that provides UV light protection and is also used in boat sealants, scented candles and air fresheners. BTMPS has become a commonly found adulterant in fentanyl, but the reason why is poorly understood, though a few recent discoveries may have begun to shed some light.

BTMPS was first identified in 2024 by a drug checking program in Portland, OR, by a FTIR Technician and Technical Assistance provider who had noticed something in the spectra of powdered fentanyl samples that wasn't matching anything in the various drug identification libraries, so he did a wider search of chemical libraries and found a match with an obscure compound by the brand name of Tinuvin 770 (BTMPS), which was confirmed by UNC shortly after. The issue was then that even though the compound was positively identified as BTMPS, the FTIR reference standard spectra did not entirely match the spectra of the substance that he had identified, and soon his scan of BTMPS was shared with drug checking programs across the country. Kelly Mytinger, formerly of The Mountain Center in Espanola, was the first Technician in the country to positively identify BTMPS in the counterfeit M30 fentanyl pills using the spectra that he created.

About this same time, our colleagues at UNC, CFSRE, and other people discovered that BTMPS was being sold on the dark web along with other chemicals that are used to make fentanyl. BTMPS, also known by its chemical name **bis(2,2,6,6-tetramethyl-4-piperidyl)sebacate**, has a "chemical structure that is dissimilar from most forensically relevant drugs; however, it contains substituted **piperidine** rings — a similar core moiety (pharmacology: an **active moiety** is the portion of an ion or molecule responsible for the activity of a drug [2]) to fentanyl" [1]. This seemed farfetched to most people with an understanding of chemistry because the position of the piperidine in the molecule makes it nearly impossible to isolate, or at best, it would be a highly inefficient way to achieve the desired results.

Next, a chemist colleague at Notre Dame University who provides quality analysis for drug checking programs of the different test strips sold today, as well as validating test strips that yield results that are incongruent with the lab results of samples, was studying BTMPS from drug samples and

discovered that the reason that the spectra for the chemical that was appearing with fentanyl was different than the reference standard is because the commercially available version is the “base” (alkaline, water resistant, i.e., ‘boat sealant’) form of BTMPS, and the chemical being sold on the dark web is the “hydrochloride” (HCl, or acid, water soluble, promotes chemical reactions to form new molecules) form. This allowed for a new reference standard that is now included with updated drug spectral libraries.

This discovery was most recently followed by this report from CFSRE, Public_Alert_BTMPS_and_TMF_Related_Substances_052025.pdf, in which they report the findings **oftetramethylfentanyl (TMF)** related compounds in drug samples, which although doesn’t confirm that BTMPS (bis(2,2,6,6-**tetramethyl-4-piperidyl**)sebacate) is the source material, it is definitely a strong indication of its use in the manufacturing of fentanyl. Fortunately, the presence of BTMPS in the illicit opioid supply appears to be declining.

Individuals using fentanyl that contains BTMPS have reported a harsh taste, coughing, vomiting, and blurry vision after use, and have described an odor like fish, bug spray, or chlorine.

1) Public_Alert_BTMPS_and_TMF_Related_Substances_052025.pdf

2) Helmenstine, Anne Marie, Ph.D. "Moiety Definition in Chemistry." ThoughtCo, Jun. 25, 2024, thoughtco.com/definition-of-moiety-605357.

**2,2,6,6-tetramethyl-4-piperidinol:** A research chemical with no medical or household uses, and is likely a cheaper alternative to the BTMPS, though, again, the reason for it remains unclear.

**Carfentanil:** A potent analogue of fentanyl known to be much stronger and have a significantly longer half-life than fentanyl. Because Carfentanil has a slightly different molecular structure than fentanyl, and can be present in such small quantities, it often may not be detectable with the fentanyl test strips. It’s re-emergence nationally in 2024 is primarily categorized as being in “trace abundance”, meaning that it is often the smallest component of a sample, unlike in 2017 and 2018 when it was associated with a high number of fatal overdoses.

**Lorazepam:** (Ativan) A benzodiazepine that is used to treat insomnia, anxiety, seizures, and used to help with alcohol withdrawal.

**Lactose:** Milk sugar. In the pharmaceutical industry, lactose is sometimes used to form tablets because it has excellent compressibility properties. It is also used to form a diluent powder. Some examples of medications that contain lactose are Alprazolam (“Xanax”), Cetirizine (“Zyrtec”), Clonidine, Lorazepam, and Oxycodone.

**Despropionyl Para-Fluorofentanyl:** A precursor for the synthesis of para-fluorofentanyl as well as an impurity in the final product.

**Lidocaine:** A common numbing agent that may cause vein damage and collapse when injected intravenously, with accompanying wounds like those caused by xylazine. Lidocaine is also known to cause “false positive” test results with the xylazine test strips.

**Mannitol:** A type of sugar alcohol commonly used as a sweetener, a supplement, and a medication. It has very low “hygroscopicity” which means it does not absorb water from the air and is used as a coating for hard candies, gum, and counterfeit pills. Mannitol is commonly sold at smoke shops and used as a cutting, or bulking agent for cocaine, heroin, powdered methamphetamine, and fentanyl, and as an excipient when manufacturing counterfeit pills.

**Microcrystalline Cellulose:** A fine, white powder derived from plant matter that is commonly used in food, supplements, pharmaceuticals, and cosmetics. In pharmaceuticals it is used as an excipient, and it easily presses into hard tablets that can also quickly dissolve. Some common medications that contain microcrystalline cellulose are alprazolam (Xanax), hydrocodone, oxycodone, tramadol, and dextroamphetamine (Adderall), and it is frequently used for the manufacturing of counterfeit pills.

**N-phenylpropanamide:** Or NPAA, is a leftover impurity from the synthesis of fentanyl.

**N-Propionyl norfentanyl:** Is known to be a common precursor used in fentanyl synthesis. It is easily available online as an analytical reference standard that is similar to other known opioids, though its chemical structure is easily manipulated and can be used to manufacture many fentanyl analogues. The DEA added it to the “Special Surveillance List” in 2023.

**P-Fluoro Acetyl fentanyl:** A less potent isomer of fentanyl that appears as a reference standard, precursor, or impurity.

**Para-Fluoro fentanyl:** A fentanyl analogue made with different precursor chemicals and known to sometimes be more potent than fentanyl, even appearing at times as the primary substance in a sample.

**Phenethyl 4-ANPP:** A precursor to fentanyl available as a reference standard. Its presence is attributed to different synthesis methods, likely due to restrictions on other common precursors. Sucrose: Composed of naturally occurring glucose and fructose, which when refined produces sucrose, or “white sugar.”

**Tirzepatide:** (Mounjaro) A glucagon-like peptide often referred to as a GLP-1 receptor agonist used to treat type 2 diabetes and for weight loss. The sample provided was purchased from an online compounding pharmacy during the Mounjaro shortage and the person reported that they did not believe that it contained any active medication. The results from the FTIR at the POC were poor matches for “flour” or mannitol, but the lab was able to positively identify the sample as Tirzepatide.

Buying medications and illicit drugs online is another kind of risk, and the drug checking community has been building libraries of hormones and other medications commonly sought from online pharmacies and the dark web as more people seek medications there that they are unable to access through more legitimate sources.

**Vegetable Oil:** Vegetable oil is commonly used as a coating in the manufacture of counterfeit pills.

**Xylazine, also known as "Tranc":** A potent sedative used in veterinary medicine that is sometimes added to fentanyl to enhance and extend its effects. Repeated use sometimes leads to serious wounds that are difficult to heal.

## Resources

**NMPathways.org**

Medications for Opioid Use Disorder (MOUD) are available through the New Mexico Department of Health (NMDOH) at Public Health Offices (PHO) throughout the state for *free* or *low-cost.*

Medications have shown to:

- Manage Withdrawal
- Reduce Cravings
- Support long-term recovery

For more information or to find a provider: visit **NMPathways.org** or call **1-833-796-8773**

**NMHarmReduction.org**

- Order naloxone (Narcan) directly to you at no-cost
- Learn about harm reduction and overdose prevention

**NMHIVGuide.org**

- Locate a PHO or community partner closest to you for services such as:
  - Harm reduction education and safer use supplies
  - Naloxone and overdose prevention
  - STD/STI prevention, testing, or treatment
  - HIV prevention, testing, or treatment

*Additional harm reduction and overdose prevention materials are available for download on **NMHarmReduction.org***

NMHealth