

Fentanyl Test Strip Pilot Project



Fentanyl, a synthetic opioid 50-100 times more potent than morphine, is the leading opioid for fatal overdose deaths in the United States¹. In 2019, 48 people died of accidental/undetermined overdoses involving fentanyl in Utah². While commonly seen in Eastern states with high opioid use, fentanyl presence in the Utah drug supply is not fully understood.

The Utah Department of Health (UDOH) was funded by the Division of Substance Abuse and Mental Health in May 2020 to purchase and distribute fentanyl test strips to participants of the Utah Syringe Exchange Program. The test strips were distributed through Syringe Services Providers (SSPs), beginning June 1, 2020. The pilot program expanded to allow other community-based organizations (CBOs) to distribute fentanyl test strips to their clients in August 2020. Four SSPs chose to participate in the pilot project: Utah Harm Reduction Coalition, One Voice Recovery, Soap 2 Hope, and the Southeast Utah Health Department. Two other CBOs chose to participate: Utah Support Advocates for Recovery Awareness and The Road Home. All participating agencies agreed to the UDOH guidelines of fentanyl test strip distribution and were asked to collect self-reported data from individuals after they received the fentanyl test strips. SSPs and CBOs submitted participant responses by paper or electronic form.



The fentanyl test strips used in this project are re-purposed fentanyl urinalysis strips. The test strip detects the presence of fentanyl and several of the most common fentanyl analogs. The test strips cannot identify which fentanyl analog is present or how much fentanyl is in the drug. Participants are given fentanyl test strips and provided education on how to use the strips, interpret results, and options for behavior changes they can make based on results. Participants are also given information on additional overdose prevention methods and substance use disorder treatment options.

Data included in this report represents participant responses from June 1 to Sept. 30, 2020. Data includes responses from SSP participants, as well as clients from other CBOs. Not all data responses were completed surveys. If a question was left blank, it was marked as 'Declined to answer. Surveys without data for fentanyl test strip use or the result of the strips were excluded from analysis.

Table 1. Fentanyl test strip usage

Did you use the Fentanyl Test Strip*	
	N (%)
Yes	307 (74.51)
No	105 (25.49)
Declined to Answer	0 (0)

*412 responses

Table 2. Motivations for not using fentanyl test strips

Why did you not use it?	
	N (%)
I forgot to use it	33(31.4)
It was stolen	4(3.8)
I lost it	1(1.0)
I don't know how	1(1.0)
Other	5(4.8)
Declined to answer	61(58.1)

*105 responses who did not use the test strips

Fentanyl test strips were given out to participants with the request they report back about their experience. Between June 1, 2020 and September 30, 2020, SSPs and CBOs distributed 4,300 fentanyl test strips during 2,009 client encounters. Clients could receive multiple test strips per encounter. Clients who returned within the time frame could receive more fentanyl test strips at each encounter. In the first three months of the project, 412 responses were collected. Of those 412 responses, 307 reported using the fentanyl test strips.

Participants who are given fentanyl test strips are not required to provide data for this project. Some people who did not use the strips may be less likely to report back. Individuals who had positive results may be more likely to report data.

¹NIDA. Fentanyl Drug Facts. National Institute on Drug Abuse website. <https://www.drugabuse.gov/publications/drugfacts/fentanyl>. February 28, 2019.

²Utah Department of Health Indicator-Based Information System for Public Health (IBIS-PH).

Table 3. Drug source

Did you purchase the drugs from a known source?	
	N (%)
Yes	129(42.0)
No	35(11.4)
Declined to answer	143(46.6)

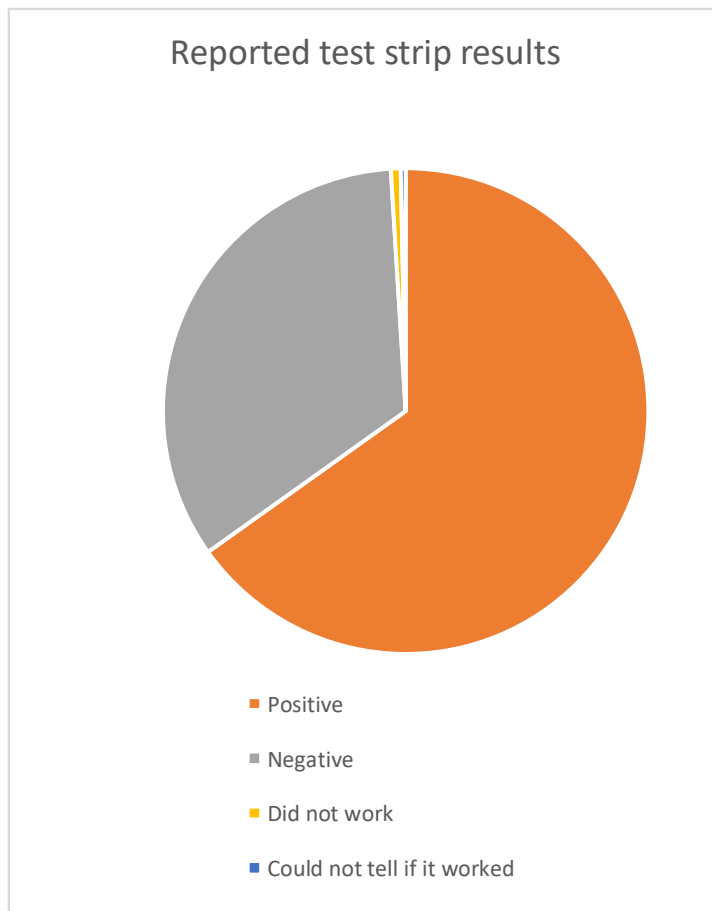
Table 4. Testing behaviors

Did you test the drugs before or after use?	
	N (%)
Before	117(38.1)
After	55(17.9)
Declined to answer	135(44.0)

Table 5. Fentanyl test strip results

What were the test strip results?	
	N (%)
Positive	200(65.1)
Negative	104(33.9)
Did not work	2(0.7)
Could not tell if it worked	1(0.3)

Figure 1. Fentanyl Test Strip Results



Individuals who reported using the fentanyl test strips were asked additional questions. They were given the option to decline to answer most questions.

Education provided recommends participants test the drugs prior to use.

Of participants who chose to respond, most tested their drugs prior to use, and purchased the drugs tested from a known source.

Participants were asked to report the results of the fentanyl test strips. Clients may have been more likely to report positive results, compared with negative results or strips that were difficult to interpret due to user error. Agency staff who gathered fentanyl test strip reporting forms were instructed to confirm the number of lines a client reported seeing on the positive or negative strip.

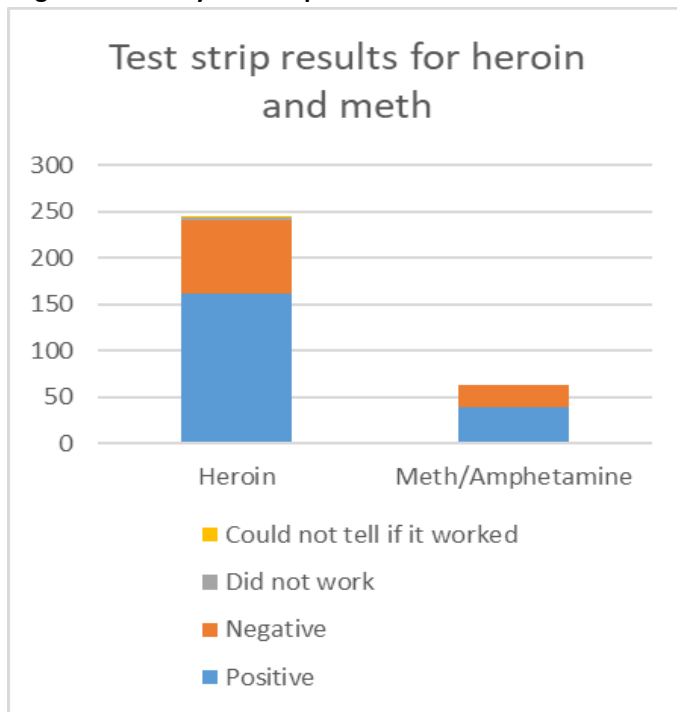
User error may also contribute to the large proportion of positive test results. For most in the People Who Use Drugs community in Utah, this is a new harm reduction tool.

Table 6. Drugs tested

What drug(s) was tested? (If a mixed drug, check all)	
	N (%)
Heroin	244(76.0)
Meth/Speed/Other amphetamine	63(19.6)
Fentanyl	10(3.1)
Benzodiazepines (benzos, ativan, xanax)	1(0.3)
Crack/Cocaine	1(0.3)
Gabapentin	1(0.3)
Prescription pain medicine (oxycotin, hydrocodone, percocet)	1(0.3)
Marijuana	0(0.0)
Methadone	0(0.0)
Spice	0(0.0)
Suboxone	0(0.0)
Subutex	0(0.0)

*321 responses of drugs used

Figure 2. Fentanyl test strip results for heroin and meth



Participants were asked to provide the type of drug that was tested. If a participant was using a mix of drugs, they were asked to report all the drugs being used that were tested with a single fentanyl test strip. If a fentanyl test strip used to test both meth and heroin had a positive strip result, it would not be possible to discern which of the drugs mixed contained fentanyl.

There were ten participants who reported testing fentanyl with fentanyl test strips. It was not reported what form of fentanyl was tested. Only eight of the ten strips testing for fentanyl presence in drugs claiming to be fentanyl were positive.

Methamphetamines and heroin were the most commonly reported drugs.

Table 7. Drug Results

	Positive	Negative	Did not work	Could not tell if it worked
	N	N	N	N
Heroin	162	79	2	1
Meth/Amphetamine	39	24	0	0
Fentanyl	8	2	0	0
Crack/Cocaine	1	0	0	0
Benzodiazepine	1	0	0	0
Prescription Pain Medicine	1	0	0	0
Gabapentin	1	0	0	0

Zip code where drugs were tested

Figure 3. Location of fentanyl test strip use

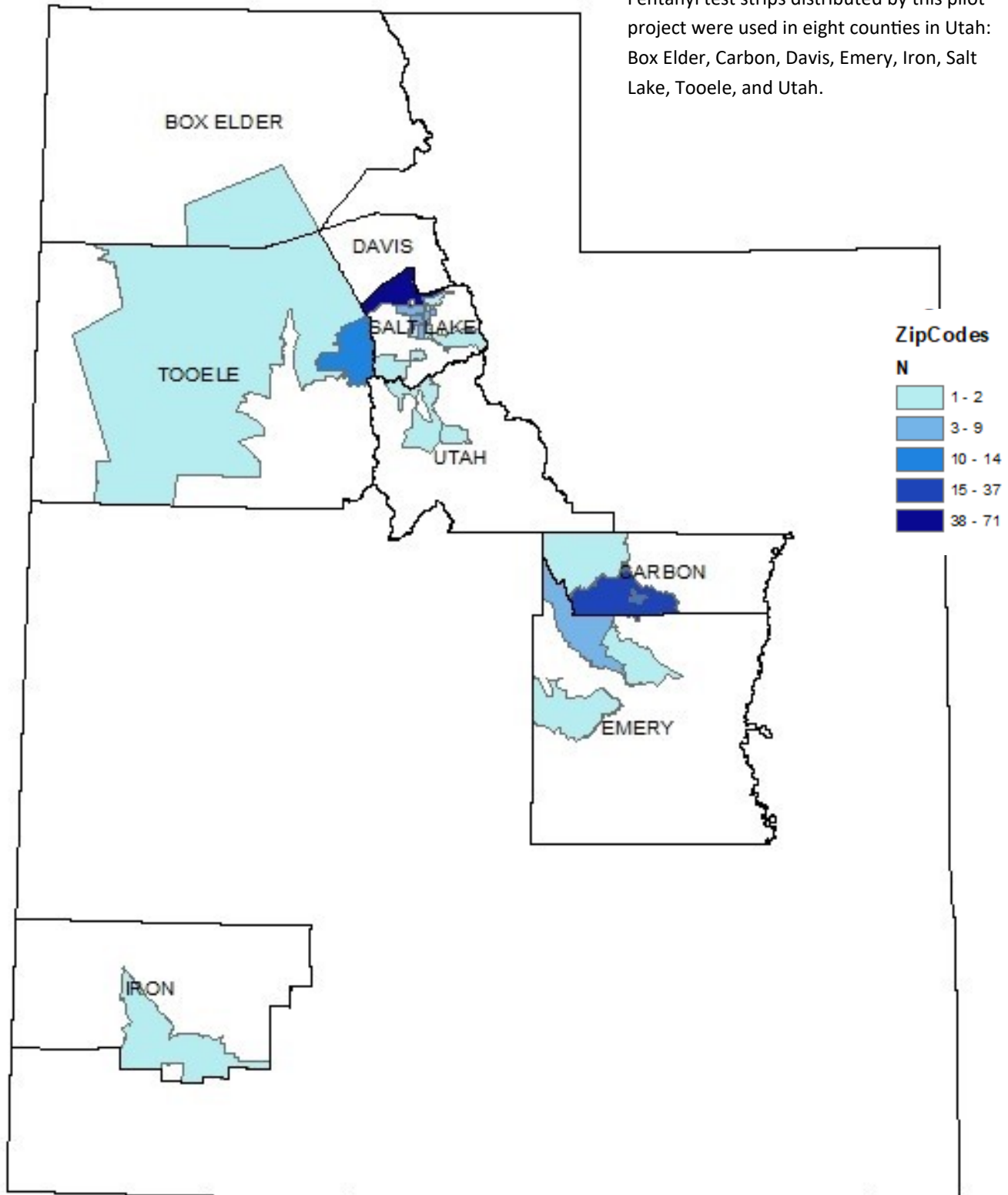
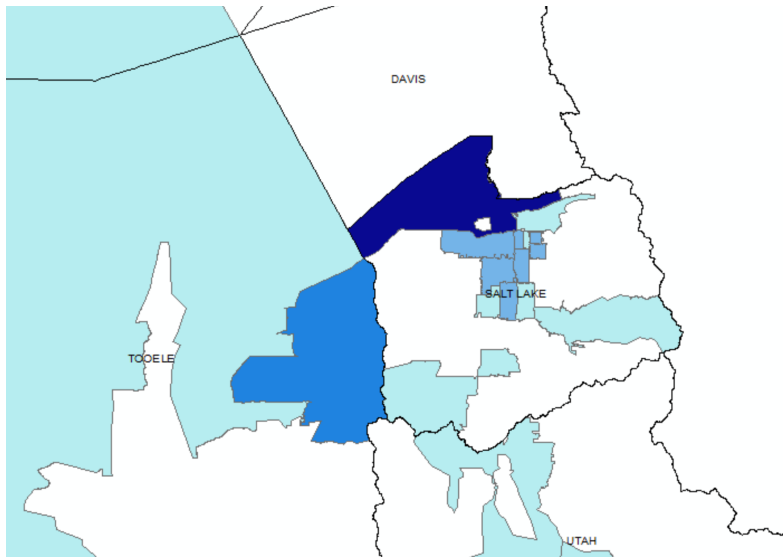


Figure 4. Common locations of fentanyl test strip use and distribution



The ZIP codes that were most reported were 84116, the North Temple area of Salt Lake City, and 84501, the ZIP code in Price in Carbon County.

The test strips were distributed by SSPs and CBOs in Salt Lake City and Price predominantly. This data reflects that fentanyl test strips are mostly used in the areas where they are distributed.

Table 8. ZIP code locations of fentanyl test strip use

Where were the drugs tested? (Zip Code)	
	N(%)
Declined to Answer	96(31.3)
84116	71(23.1)
84501	37(12.1)
84074	14(4.6)
84542	14(4.6)
84115	9(2.9)
84101	8(2.6)
84119	8(2.6)
84102	7(2.3)
84104	7(2.3)
84123	6(2.0)
84105	5(1.6)
84528	5(1.6)
84029	2(0.7)
84107	2(0.7)
84111	2(0.7)
84121	2(0.7)
84129	2(0.7)
84526	2(0.7)
84043	1(0.3)
84095	1(0.3)
84096	1(0.3)
84103	1(0.3)
84518	1(0.3)
84523	1(0.3)
84601	1(0.3)
84720	1(0.3)

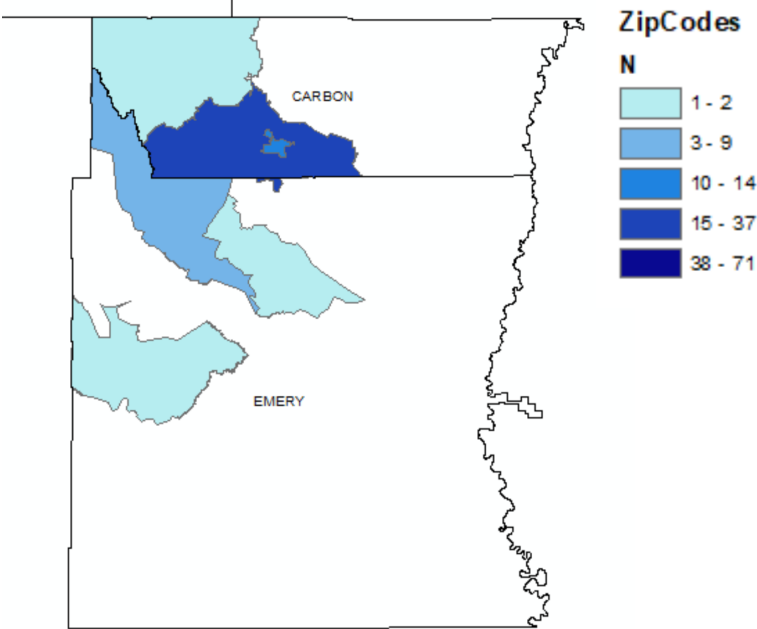


Table 9. Harm reduction behaviors

Based on test strip results, what did you do differently?	
	N (%)
Had naloxone available	68(24.1)
Used with someone else around	46(16.3)
Went slow	41(14.5)
Did a test shot/hit	27(9.6)
Used less	27(9.6)
Used the same as if I hadn't used a test strip	21(7.4)
Let seller know results	13(4.6)
Shared test strip results with others using the drug	12(4.3)
Disposed/threw them out	11(3.9)
Other	5(1.8)
Gave them away	5(1.8)
Smoked instead of injected	3(1.1)
Sought drug treatment/counseling	3(1.1)
Snorted instead of injected	0(0.0)
Sold them	0(0.0)

*282 responses of actions taken from 280 respondents

Participants were asked to select or describe what harm reduction behaviors, if any, they used based on the results of the fentanyl test strips. If the participants employed two different harm reduction behaviors, they were asked to select each one. The most common harm reduction behavior reported was having naloxone available.

Figure 5. Harm reduction behaviors based on fentanyl test strip result

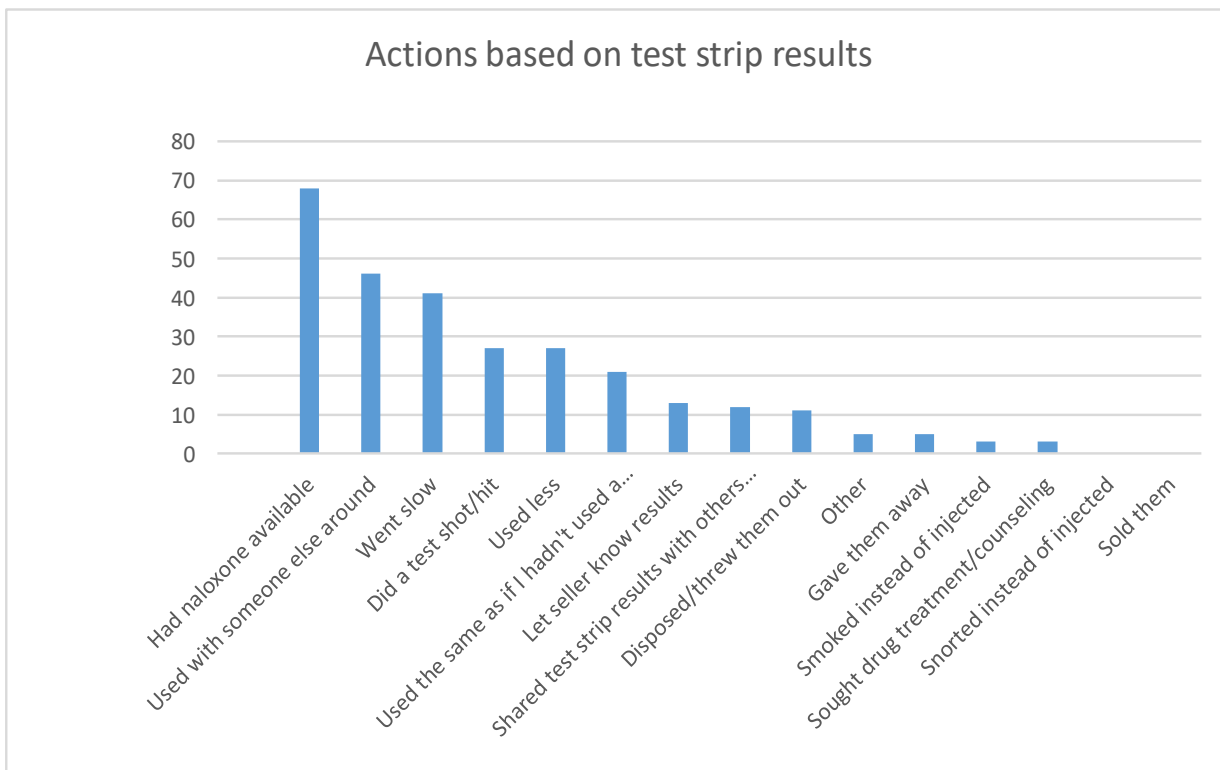


Table 10. Overdose

Did an overdose occur?	
	N (%)
Yes	9(2.9)
No	120(39.1)
Declined to answer	178(58.0)

Participants were asked if an overdose occurred with the drugs tested. Of those who reported an overdose occurring, eight reported using heroin and one reported using both heroin and meth.

Participants who reported an overdose occurring were also asked about the outcome.

Table 11. Overdose outcome

What was the outcome of the overdose?	
	N (%)
Person OK	5(55.6)
911/ EMS called	2(22.2)
Person taken to ER	1(11.1)
Person hospitalized	1(11.1)
Person died	0(0.0)
Unknown	0(0.0)
Declined to answer	0(0.0)

Summary

The self-reported data used in this initial analysis is biased to positive results. While the fentanyl test strips used are highly accurate³, user error and defective strips could have contributed to inaccurate or uninterpretable results. Sensitivity of the fentanyl test strips is high, reported between 96-100%⁴, and participants are educated about the limitations of a test, and encouraged to use harm reduction methods to prevent overdose regardless of the fentanyl test strip result.

The distribution of fentanyl test strips as a harm reduction tool creates opportunities for harm reduction education with people who use drugs. Harm reduction methods prevent overdose and empower people who use drugs to make decisions about their drug use behaviors. The approximate cost of each fentanyl test strip is one dollar, making this a relatively low-cost intervention for encouraging harm reduction behaviors in people who use drugs.

The UDOH is continuing to distribute fentanyl test strips through SSPs and CBOs as a continuation of this pilot project.

Contact: syringeexchange@utah.gov for more information

³Green TC, Park JN, Gilbert M, McKenzie M, Struth E, Lucas R, Clarke W, Sherman SG. An assessment of the limits of detection, sensitivity and specificity of three devices for public health-based drug checking of fentanyl in street-acquired samples. *Int J Drug Policy*. 2020 Mar;77:102661. doi: 10.1016/j.drugpo.2020.102661. Epub 2020 Jan 14. PMID: 31951925.

⁴Bloomberg School of Public Health. (2018). Fentanyl Overdose Reduction Checking Analysis Study. Retrieved August 9, 2018, from <https://americanhealth.jhu.edu/fentanyl/>