

# Lycoming County Adult Probation Urine Analysis (2015)

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Offense	Number of Offenses	Number of Urine Tests	Number of Positive Tests	Percentage of Positive Tests
Alcohol	1	1	0	0%
Control	1	1	0	0%
Domestic Violence	1	1	0	0%
Drug	1	1	1	100%
Sexual	1	1	0	0%
Total	5	5	1	20%

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### Frequency of Tests (and Result of Urine Test Charts)

There were 3,223 UA administered and recorded by Lycoming County APO in 2015. For purposes of this analysis, 3,216 tests are valid—and there are 7 invalid UA tests because there was not enough information associated with that specific test (i.e. docket# was missing because the test was given by PBPP, or the result of the test was missing). The fact that these few cases are not included in the analysis is miniscule because 99.8% of the cases are valid.

A frequency test determined that 2,278 UA tests were negative, 696 UA tests were positive for *one* drug, and 242 UA tests were positive for *multiple* drugs. In total, there were 938 positive UA tests. To put it into perspective, 70.8% of the tests were negative, 21.6% of tests contained a single positive, and 7.5% contained multiple positives. It is important to recognize the fact that the overwhelming majority of tests were negative.

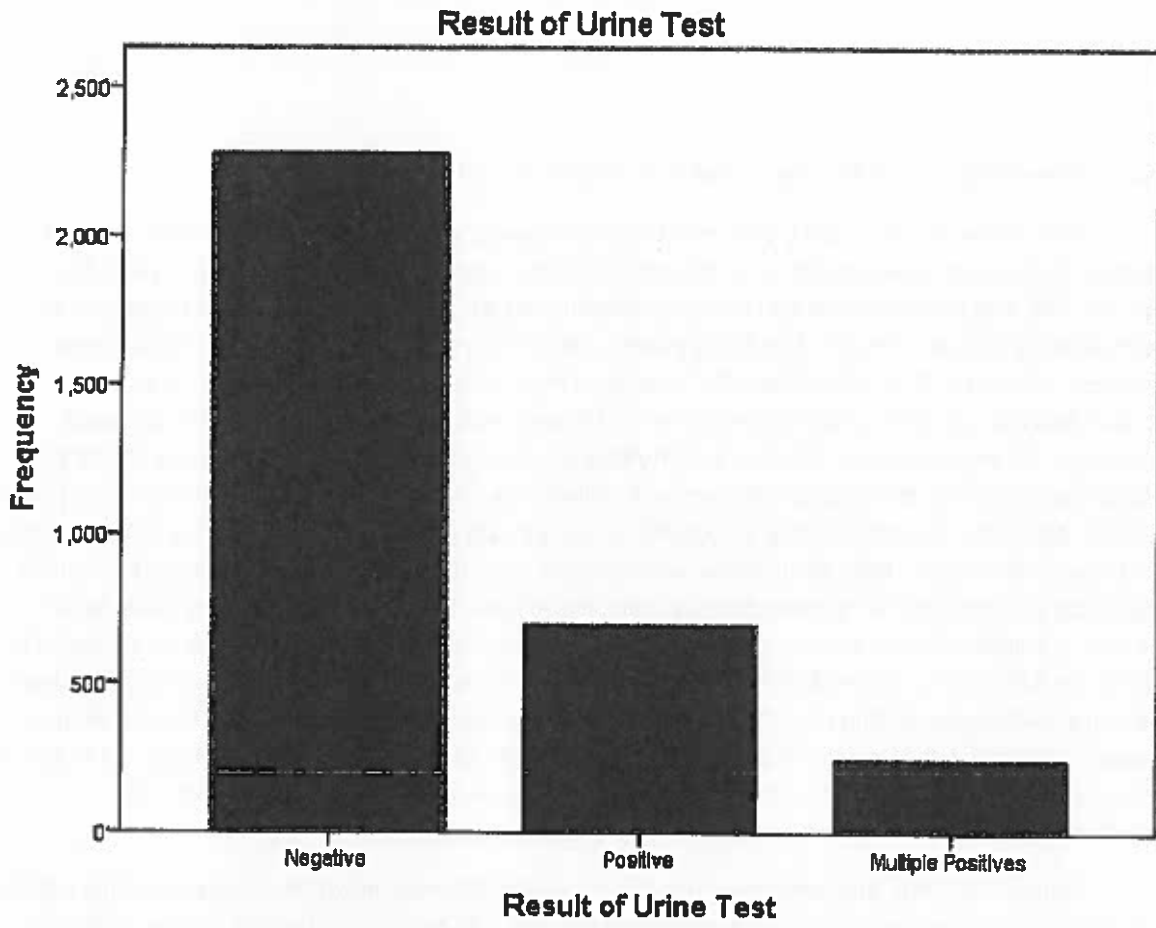
#### Statistics

##### Result of Urine Test

N	Valid	3216
	Missing	7

##### Result of Urine Test

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Negative	2278	70.7	70.8	70.8
	Positive	696	21.6	21.6	92.5
	Multiple Positives	242	7.5	7.5	100.0
	Total	3216	99.8	100.0	
Missing	System	7	.2		
Total		3223	100.0		



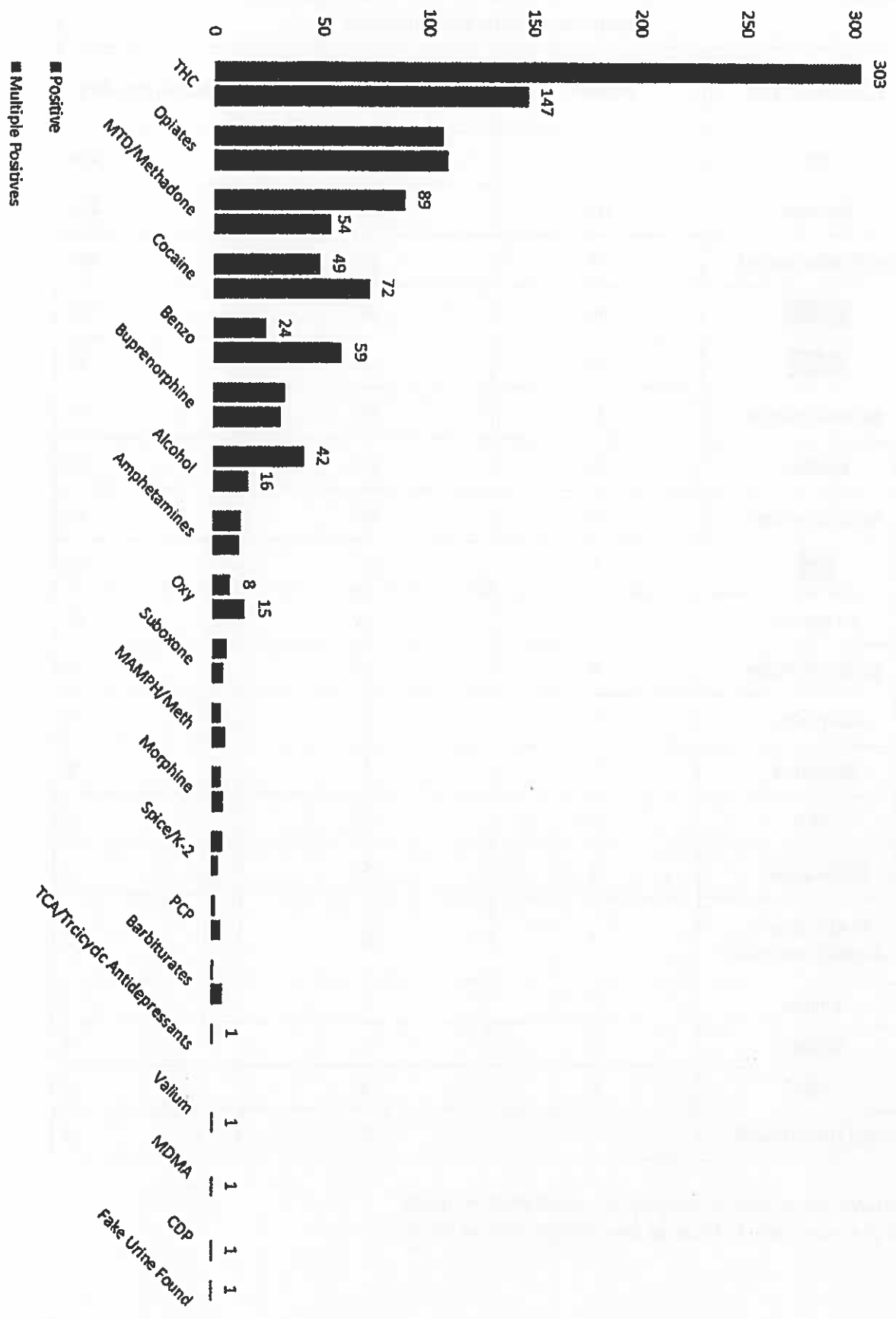
### ***Frequencies of Different Substances (with Frequency chart and graph)***

The following tables and graphs were tabulated using Microsoft Excel and the SPSS data. THC, Opiates, Methadone, and Cocaine were the most frequent substances that showed up in the urine analysis. THC was the substance that occurred most frequently in positive tests; it was present in 303 single positive tests and in 147 of multiple positive tests. This means that 450 of 938 positive tests included THC (this is 47.97%) and that THC was more than twice as likely to be present in a single positive test compared to multiple positive tests. Opiates was the next most frequent drug, being present in 107 single positive tests and 109 multiple positive tests; or 216 of 938 positives (23.02%). Interestingly, it seems as if opiate users are just as likely to produce a single positive as they are to have multiple positives—this means they are equally as likely to use other substances besides opiates as they are to only use opiates. Next, Methadone was the third most frequent substance, being present in 89 single positive tests and 54 multiple positive tests. It also looks as if Methadone is more likely to be present in a single positive test as opposed to a multiple positive test. In total Methadone is present in 143 of the 938 positive tests (15.35%), but again, it should be noted that it is not known whether these users are in Methadone clinics or if they are obtaining the drug illegally. Cocaine was the fourth most frequent substance and was found in 49 single positive tests and 72 multiple positive tests—or in 121 of 938 positive tests (12.90%). This finding is interesting because it looks as if Cocaine users are significantly more likely to also have other substances in their system.

Benzo (the fifth), Buprenorphine (the sixth), Alcohol (then seventh), Amphetamines (the eighth), and Oxy (the ninth) were much less frequent than the four substances listed above. There is evidence that Benzo is more than twice as likely to be present in a multiple positive test than it is in a single positive test—and is present in 59 multiple positives versus 24 single positive tests. This leads one to believe that the Lycoming County Benzo users who are on probation most likely consume this with other substances. Buprenorphine was just as likely to show up in a single positive test as it was in a multiple positive test. Alcohol was distinctly more present in single positive tests versus multiple positive tests (42 single positives versus 16 multiple positives)—which suggests that frequent Alcohol users primarily only consume alcohol as opposed to a combination of substances. Lastly, Oxycodone was almost twice as likely to be present in a multiple positive test (15) versus a single positive test (8)—suggesting that users are more likely to consume this substance with others.

Respectively, THC, Opiates, Methadone, Cocaine, Benzo, Buprenorphine, and Alcohol were the most prevalent substances in the 2015 Lycoming County Urine Analysis.

### Frequencies of Different Substances



Frequency of Different Substances			
Substance Type	Positive	Multiple Positives	Total Frequency
THC	303	147	450
Opiates	107	109	216
MTD/Methadone	89	54	143
<b>Nicotine</b>	49	72	121
<b>Heroin</b>	24	59	83
Buprenorphine	33	31	64
Alcohol	42	16	58
Amphetamines	13	12	25
<b>MS</b>	8	15	23
Suboxone	7	5	12
MAMPH/Meth	4	6	10
Morphine	4	5	9
Spice/K-2	5	3	8
PCP	2	4	6
Barbiturates	1	5	6
TCA/Tricyclic Antidepressants	1	0	1
Valium	0	1	1
MDMA	0	1	1
CDP	0	1	1
Fake Urine Found	1	0	1

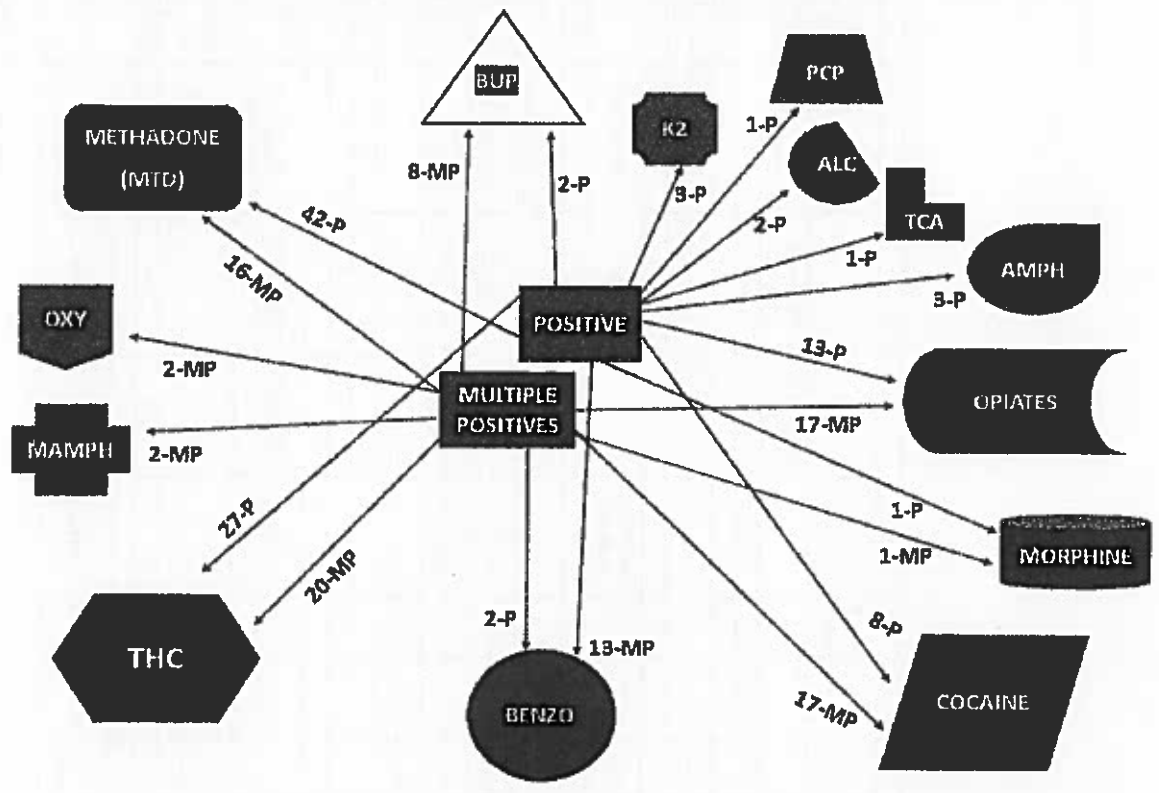
\*\*yellow = more likely to show up as a single positive results

\*\*blue = more likely to show up as a multiple positive results

**"Most Susceptible Offenders" (Spreadsheet and Flowchart)**

These individuals have been identified as "potential problem offenders" because they failed four or more urine analysis tests during 2015. Of the 938 positive UA results, 28 individuals account for 144 (15.4%) of the positive results (102 single positive tests and 42 multiple positive tests). The offender who had the most positive urines was Docket# 1578-2015 and this individual gave 5 single positive tests and 6 multiple positive tests; cocaine showed up in 6 out of these 11 tests, but MTD showed up in 10 out of 11 of these tests. Of these 28 offenders, 7 of them gave the same number or more "multiple positive" tests than they did single positive tests. Also, these 28 offenders were tested 220 times in 2015 and 144 of those tests were positive, which is a significant portion of those tests (65.5%).

Amongst these 28 offenders, Methadone (MTD) was most commonly associated with giving repeated positive tests; it is unknown whether or not these offenders were on the Methadone clinic or if they illegally obtained the drug; regardless, 58 of the 144 positive tests (40.3%) contained Methadone. Also, looking at the same cohort of offenders, Opiates were also associated with repeated positive tests (they were present in 30 of the 144 tests or 20.8% of the time). It is worth noting that 19 out of the 28 people had *not* tested positive for opiates during 2015. Additionally, 47 of the 144 cases (32.6%) contained THC and 20 of those 47 cases involved a multiple positive—meaning another drug. The next most frequent drug was Cocaine which was present in 25 of the positive results (17.4%). These percentages explain the drugs individually, not in the aggregate, so it is important to understand that 42 of the 144 positive tests contained multiple drugs. All of the Brown shapes below are insignificant.







Month \* All Positives Crosstabulation

		All Positives		Total	
		Negative	Positive		
Month	January	Count	180	75	255
		% within Month	70.6%	29.4%	100.0%
February	Count	230	76	306	
	% within Month	75.2%	24.8%	100.0%	
March	Count	255	95	350	
	% within Month	72.9%	27.1%	100.0%	
April	Count	207	79	286	
	% within Month	72.4%	27.6%	100.0%	
May	Count	216	72	288	
	% within Month	75.0%	25.0%	100.0%	
June	Count	167	59	226	
	% within Month	73.9%	26.1%	100.0%	
July	Count	212	98	310	
	% within Month	68.4%	31.6%	100.0%	
August	Count	134	65	199	
	% within Month	67.3%	32.7%	100.0%	
September	Count	177	70	247	
	% within Month	71.7%	28.3%	100.0%	
October	Count	198	77	275	
	% within Month	72.0%	28.0%	100.0%	
November	Count	151	80	231	
	% within Month	65.4%	34.6%	100.0%	
December	Count	148	88	236	
	% within Month	62.7%	37.3%	100.0%	
Total	Count	2275	934	3209	
	% within Month	70.9%	29.1%	100.0%	

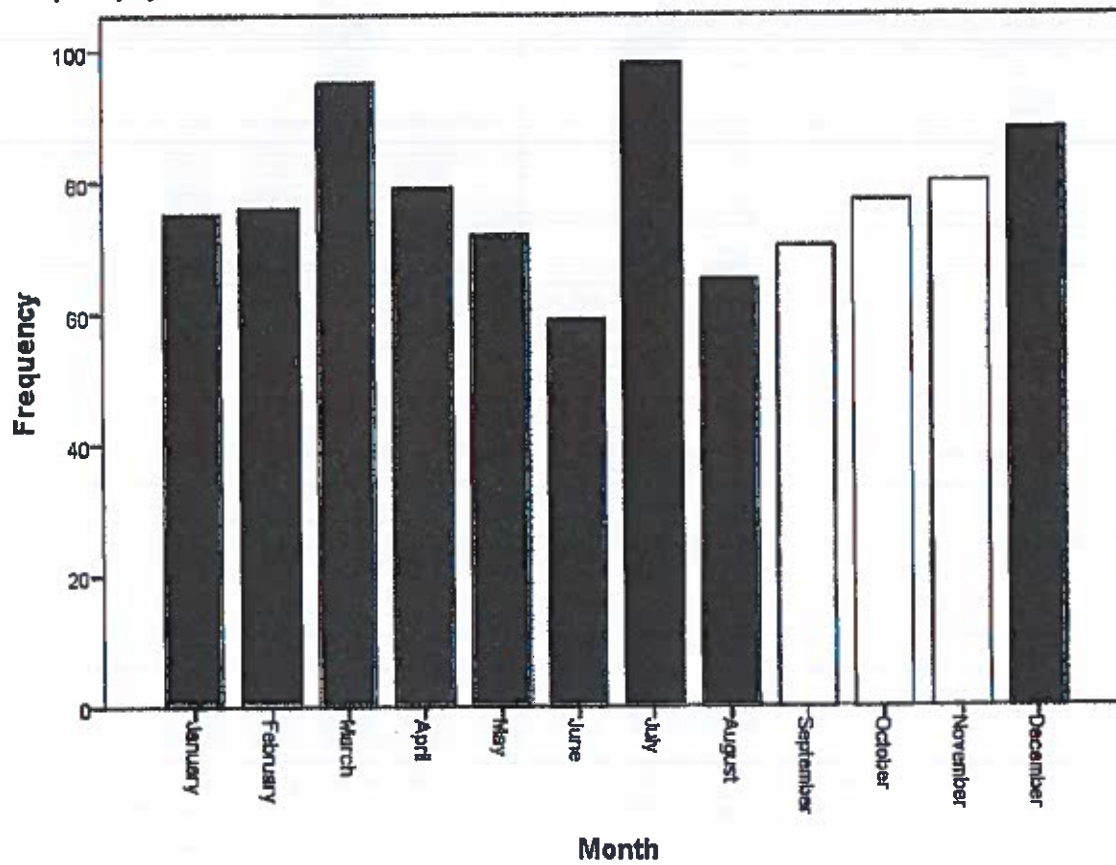
**Frequency of Positive Test by Month  
(and Chart and Graph)**

There were no discernible differences between months and the number of total positive urines (meaning both single and multiple positives). Although July contained the greatest number of positives (98), it was also the month where the most number of UA tests were administered (310).

December contained the greatest number of positive results in relation to total number of tests given that month—and this was statistically significant at the .05 level. Moreover, 37.3% of the tests in December were positive and 62.7% were negative. November produced the second greatest number of positive results in relation to the total number of tests administered that month; while this was not statistically significant, it was close to the .05 level. There were 34.6% positive tests and 65.4% negative tests in November.

The bar chart below is color coordinated by season to show the total number of positive UA tests by month. Red=Winter, Green=Spring, Blue=Summer, and Yellow=Fall. An ANOVA test (of statistical difference) was used to determine if there were any differences in the number of positives between seasons; but there were no significant differences.

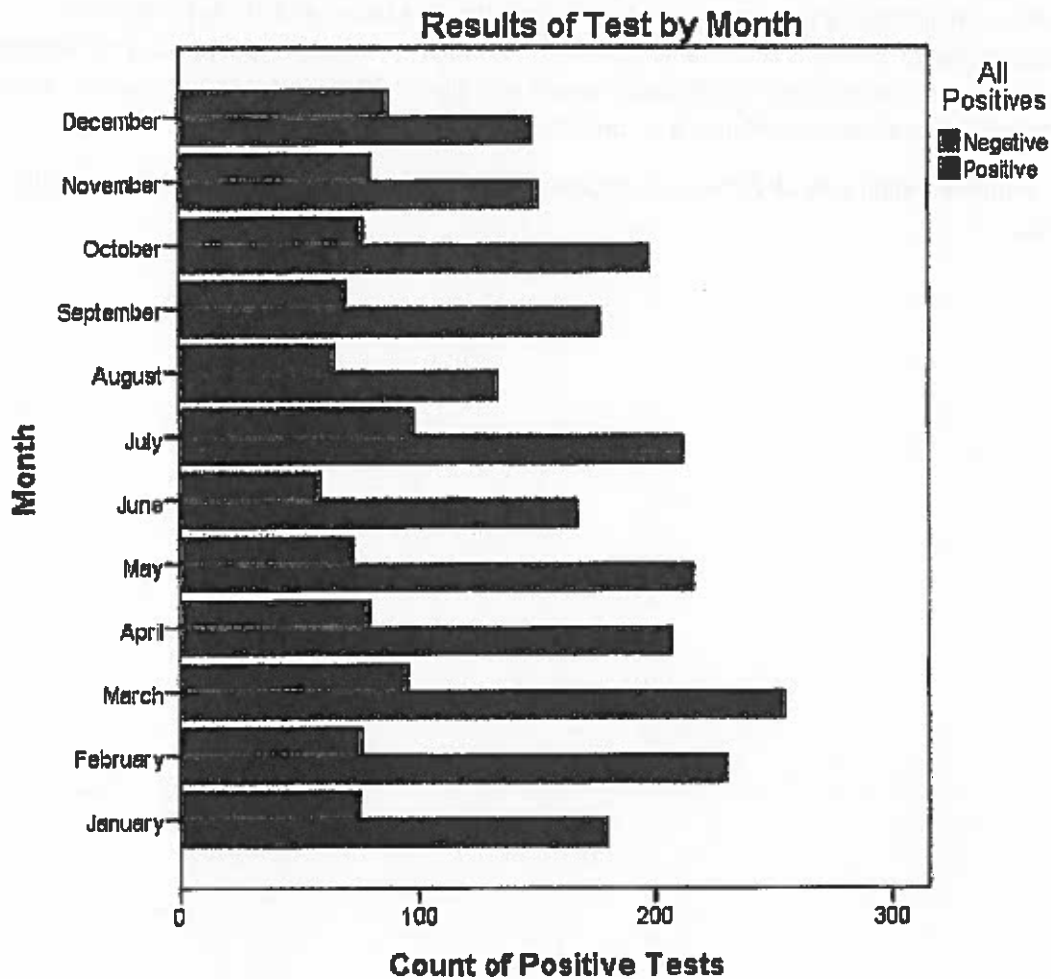
**Frequency of Positive Tests by Month (not in proportion to total number of monthly tests)**



This data was unable to tell us what time of the year offenders are most vulnerable to produce a positive UA test, but as mentioned there is *some* evidence that this would occur in December and maybe November.

The graph below displays the number of positive results in relation to the number of negative tests by each month. December and November produced the closest negative and positive numbers, suggesting that proportionately these months are likely to produce the greatest number of positive urine tests.

*Frequency of Positive Tests by Month (with reference to the number of negative tests given each month)*



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***Limitations to the Research***

Unfortunately, with the way the variables are structured the researcher was unable to produce many statistical measures. In order to have better statistical measures Lycoming County APO would have to include more variables on the urine analysis sheets (i.e. offender's gender, race, socioeconomic or employment status, and criminal charge(s)). It may be impractical for APOs to enter this information on every urine analysis sheet, but this would be the only way for future research to predict any causal relationships (meaning x causes y; or x is highly correlated with y because of z). As mentioned previously, the researcher was also unable to determine which users who tested positive for Methadone were in Methadone clinics; knowing this detail would also allow APO to better gauge whether or not Methadone is being abused by offenders on probation.

With that being said, all of the findings above were still methodologically and theoretically significant.