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CONFIDENTIAL

Supplemental Report

Report Issued 07/20/2016 18:00
Last Report Issued 07/15/2016 17:00

To: **10517**
East Baton Rouge Parish Coroner's Office
Attn: Shane Evans
4030 T.B. Herndon Avenue
Baton Rouge, LA 70807

Patient Name STERLING, ALTON
Patient ID 096-EBR16
Chain 16208842
Age 37 Y **DOB** 06/14/1979
Gender Male
Workorder 16208842

Positive Findings:

Compound	Result	Units	Matrix Source
Ethanol	**29**	**mg/dL**	**001 - Chest Blood**
Blood Alcohol Concentration (BAC)	**0.029**	**g/100 mL**	**001 - Chest Blood**
Caffeine	**Positive**	**mcg/mL**	**001 - Chest Blood**
Nicotine	**Positive**	**ng/mL**	**001 - Chest Blood**
Amphetamine	**23**	**ng/mL**	**001 - Chest Blood**
Methamphetamine	**280**	**ng/mL**	**001 - Chest Blood**
Cocaine	**26**	**ng/mL**	**001 - Chest Blood**
Benzoylecgonine	**130**	**ng/mL**	**001 - Chest Blood**
Hydrocodone - Free	**<5.0**	**ng/mL**	**001 - Chest Blood**
Delta-9 Carboxy THC	**13**	**ng/mL**	**001 - Chest Blood**
Delta-9 THC	**3.8**	**ng/mL**	**001 - Chest Blood**
Ethanol	**34**	**mg/dL**	**003 - Vitreous Fluid**
Opiates	**Presump Pos**	**ng/mL**	**004 - Urine**
Cocaine / Metabolites	**Presump Pos**	**ng/mL**	**004 - Urine**
Cannabinoids	**Presump Pos**	**ng/mL**	**004 - Urine**
Amphetamines	**Presump Pos**	**ng/mL**	**004 - Urine**
Fentanyl	**None.Detected**	**ng/mL**	**004 - Urine**
Norfentanyl	**None.Detected**	**ng/mL**	**004 - Urine**

See Detailed Findings section for additional information

Testing Requested:

Analysis Code	Description
9566B	Postmortem, Synthetic Cannabinoids (Add-On), Blood
8063B	Postmortem, Basic to Expanded Upgrade, Blood (Forensic)
8050U	Postmortem Toxicology - Urine Screen Add-on (6-MAM Quantification only)
8041B	Postmortem Toxicology - Basic with Vitreous Alcohol Confirmation, Blood (Forensic)

Specimens Received:

ID	Tube/Container	Volume/ Mass	Collection Date/Time	Matrix Source	Miscellaneous Information
001	Gray Top Tube	7.9 mL	07/05/2016 10:30	Chest Blood	CHEST CAVITY BLOOD
002	Gray Top Tube	7.1 mL	07/05/2016 10:30	Chest Blood	CHEST CAVITY BLOOD
003	Red Top Tube	3 mL	07/05/2016 10:30	Vitreous Fluid	

ID	Tube/Container	Volume/ Mass	Collection Date/Time	Matrix Source	Miscellaneous Information
004	White Plastic Container	40 mL	07/05/2016 10:30	Urine	
005	White Plastic Container	23.47 g	07/05/2016 10:30	Liver Tissue	
006	White Plastic Container	18 mL	07/05/2016 10:30	Gastric Fluid	CHUNKY ORANGE FLUID, pH=3

All sample volumes/weights are approximations.

Specimens received on 07/09/2016.

Detailed Findings:

Analysis and Comments	Result	Units	Rpt. Limit	Specimen Source	Analysis By
Ethanol	29	mg/dL	10	001 - Chest Blood	Headspace GC
Blood Alcohol Concentration (BAC)	0.029	g/100 mL	0.010	001 - Chest Blood	Headspace GC
Caffeine	Positive	mcg/mL	1.0	001 - Chest Blood	LC/TOF-MS
Nicotine	Positive	ng/mL	100	001 - Chest Blood	LC/TOF-MS
Amphetamine	23	ng/mL	5.0	001 - Chest Blood	LC-MS/MS
Methamphetamine	280	ng/mL	5.0	001 - Chest Blood	LC-MS/MS
Cocaine	26	ng/mL	20	001 - Chest Blood	GC/MS
Benzoylecgonine	130	ng/mL	50	001 - Chest Blood	GC/MS
Hydrocodone - Free	<5.0	ng/mL	5.0	001 - Chest Blood	LC-MS/MS
Delta-9 Carboxy THC	13	ng/mL	5.0	001 - Chest Blood	LC-MS/MS
Delta-9 THC	3.8	ng/mL	0.50	001 - Chest Blood	LC-MS/MS
Ethanol	Confirmed	mg/dL	10	001 - Chest Blood	Headspace GC
Ethanol	34	mg/dL	10	003 - Vitreous Fluid	Headspace GC
Opiates	Presump Pos	ng/mL	300	004 - Urine	EIA
This test is an unconfirmed screen. Confirmation by a more definitive technique such as GC/MS is recommended.					
Cocaine / Metabolites	Presump Pos	ng/mL	150	004 - Urine	EIA
This test is an unconfirmed screen. Confirmation by a more definitive technique such as GC/MS is recommended.					
Cannabinoids	Presump Pos	ng/mL	20	004 - Urine	EIA
This test is an unconfirmed screen. Confirmation by a more definitive technique such as GC/MS is recommended.					
Amphetamines	Presump Pos	ng/mL	500	004 - Urine	EIA
This test is an unconfirmed screen. Confirmation by a more definitive technique such as GC/MS is recommended.					
Fentanyl	None.Detected	ng/mL	1.0	004 - Urine	LC-MS/MS
Norfentanyl	None.Detected	ng/mL	1.0	004 - Urine	LC-MS/MS

Other than the above findings, examination of the specimen(s) submitted did not reveal any positive findings of toxicological significance by procedures outlined in the accompanying Analysis Summary.

Reference Comments:

1. Amphetamine - Chest Blood:

   Amphetamine (Adderall, Dexedrine) is a Schedule II phenethylamine CNS-stimulant. It is used therapeutically in the treatment of narcolepsy and obesity and also in the treatment of hyperactivity in children. Amphetamine has a high potential for abuse. When used in therapy, initial doses should be small and increased gradually. In the treatment of narcolepsy, amphetamine is administered in daily divided doses of 5 to 60 mg. For obesity and children with attention deficits, usual dosage is 5 or 10 mg daily.

Reference Comments:

Following a single oral dose of 10 mg amphetamine sulfate, a reported peak blood concentration of 40 ng/mL was reached at 2 hr. Following a single 30 mg dose to adults, an average peak plasma level of 100 ng/mL was reported at 2.5 hr. A steady-state blood level of 2000 - 3000 ng/mL was reported in an addict who consumed approximately 1000 mg daily.

Overdose with amphetamine can produce restlessness, hyperthermia, convulsions, hallucinations, respiratory and/or cardiac failure. Reported blood concentrations in amphetamine-related fatalities ranged from 500 - 41000 ng/mL (mean, 9000 ng/mL). Amphetamine is also a metabolite of methamphetamine, benzphetamine and selegiline.

2. Amphetamines - Urine:

   Amphetamines are a class of central nervous system stimulant drugs, with some therapeutic uses, and a high potential for abuse.

   This result derives from a presumptive test, which may be subject to cross-reactivity with non-amphetamine related compounds. A second test is necessary to confirm the presence of amphetamine related compounds.

3. Benzoylecgonine (Cocaine Degradation Product) - Chest Blood:

   Benzoylecgonine is an inactive metabolite and chemical breakdown product of cocaine. Cocaine is a DEA Schedule II controlled central nervous stimulant drug. Effects following cocaine use can include euphoria, excitement, restlessness, risk taking, sleep disturbance, and aggression. A period of mental and physical fatigue and somnolence follow the use of cocaine after the excitant-stimulant effects wear off. Benzoylecgonine has a half-life of 6 to 10 hours. The average blood benzoylecgonine concentration in 906 impaired drivers was 1260 ng/mL (range 5 - 17600 ng/mL). Benzoylecgonine blood concentrations in patients admitted to an emergency room for cocaine related medical complaints were 1280 ng/mL (SD = 1290 ng/mL). Benzoylecgonine concentrations in plasma following oral administration of 2 g/day of cocaine over 6 days, averaged 4900 ng/mL. The average blood benzoylecgonine concentration in 37 cocaine related fatalities was 7900 ng/mL (range 700 - 31000 ng/mL).

4. Caffeine (No-Doz) - Chest Blood:

   Caffeine is a xanthine-derived central nervous system stimulant. It also produces diuresis and cardiac and respiratory stimulation. It can be readily found in such items as coffee, tea, soft drinks and chocolate. As a reference, a typical cup of coffee or tea contains between 40 to 100 mg caffeine.

   The reported qualitative result for this substance was based upon a single analysis only. If confirmation testing is required please contact the laboratory.

5. Cannabinoids - Urine:

   Cannabinoids are chemical compounds derived from the plant Cannabis sativa (marijuana), including active components, chemical congeners and metabolites. Delta-9-Tetrahydrocannabinol (THC) is the principal active component.

   This result derives from a presumptive test, which may be subject to cross-reactivity with non-cannabinoid related compounds. A second test is necessary to confirm the presence of cannabinoid related compounds.

6. Cocaine - Chest Blood:

   Cocaine is a DEA Schedule II controlled central nervous stimulant drug. Effects following cocaine use can include euphoria, excitement, restlessness, risk taking, sleep disturbance, and aggression. A period of mental and physical fatigue and somnolence follow the use of cocaine after the excitant-stimulant effects wear off. Cocaine is metabolized to the inactive compounds benzoylecgonine, ecgonine methyl ester, and ecgonine. Benzoylecgonine and ecgonine methyl ester can form from cocaine breakdown after death and even after sample collection. The average blood cocaine concentration in 906 impaired drivers was 87 ng/mL (range 5 - 2390 ng/mL). Blood cocaine concentrations in patients admitted to an emergency room for cocaine related medical complaints were 260 ng/mL (SD = 500 ng/mL). Cocaine concentrations in plasma following oral administration of 2 g/day over 6 days, averaged 1260 ng/mL. The average blood cocaine concentration in 37 cocaine related fatalities was 4600 ng/mL (range 40 - 31000 ng/mL).

7. Cocaine / Metabolites - Urine:

   Cocaine is a central nervous system stimulant and drug of abuse.

   This result derives from a presumptive test, which may be subject to cross-reactivity with non-cocaine related compounds. A second test is necessary to confirm the presence of cocaine related compounds.

Reference Comments:

8. Delta-9 Carboxy THC (Inactive Metabolite) - Chest Blood:

   Delta-9-THC is the principle psychoactive ingredient of marijuana/hashish. Delta-9-carboxy-THC (THCC) is the inactive metabolite of THC. The usual peak concentrations in serum for 1.75% or 3.55% THC marijuana cigarettes are 10 - 101 ng/mL attained 32 to 240 minutes after beginning smoking, with a slow decline thereafter. The ratio of whole blood concentration to plasma concentration is unknown for this analyte. THCC may be detected for up to one day or more in blood. Both delta-9-THC and THCC may be present substantially longer in chronic users. THCC is usually not detectable after passive inhalation.

9. Delta-9 THC (Active Ingredient of Marijuana) - Chest Blood:

   Marijuana is a DEA Schedule I hallucinogen. Pharmacologically, it has depressant and reality distorting effects. Collectively, the chemical compounds that comprise marijuana are known as Cannabinoids.

   Delta-9-THC is the principle psychoactive ingredient of marijuana/hashish. It rapidly leaves the blood, even during smoking, falling to below detectable levels within several hours. Delta-9-carboxy-THC (THCC) is the inactive metabolite of THC and may be detected for up to one day or more in blood. Both delta-9-THC and THCC may be present substantially longer in chronic users.
   THC concentrations in blood are usually about one-half of serum/plasma concentrations. Usual peak levels in serum for 1.75% or 3.55% THC marijuana cigarettes: 50 - 270 ng/mL at 6 to 9 minutes after beginning smoking, decreasing to less than 5 ng/mL by 2 hrs.

10. Ethanol (Ethyl Alcohol) - Chest Blood:

    Ethyl alcohol (ethanol, drinking alcohol) is a central nervous system depressant and can cause effects such as impaired judgment, reduced alertness and impaired muscular coordination. Ethanol can also be a product of decomposition or degradation of biological samples. The blood alcohol concentrations (BAC) can be expressed as a whole number with the units of mg/dL or as a decimal number with units of g/100 mL which is equivalent to % w/v. For example, a BAC of 85 mg/dL equals 0.085 g/100 mL or 0.085% w/v of ethanol.

11. Ethanol (Ethyl Alcohol) - Vitreous Fluid:

    Ethyl alcohol (ethanol, drinking alcohol) is a central nervous system depressant and can cause effects such as impaired judgment, reduced alertness and impaired muscular coordination. Ethanol can also be a product of decomposition or degradation of biological samples.

12. Fentanyl (Duragesic®; Sublimaze®) - Urine:

    Fentanyl is a DEA Schedule II synthetic morphine substitute anesthetic/analgesic. It is reported to be 80 to 200 times as potent as morphine and has a rapid onset of action as well as addictive properties.

    Signs associated with fentanyl toxicity include severe respiratory depression, seizures, hypotension, coma and death.

13. Hydrocodone - Free (Vicodin®; Zohydro®) - Chest Blood:

    Hydrocodone is a DEA Schedule II semisynthetic narcotic analgesic. It is similar to codeine in analgesic activity and is also widely used in cough syrups for its antitussive activity. This compound is reported to be highly addictive. For relief of pain, hydrocodone, as the bitartrate salt, is only available in oral form in combination with non-opiate drugs, e.g., acetaminophen. Active metabolites of hydrocodone include hydromorphone and hydrocodol (dihydrocodeine). Normal adult oral dosages range from 5 to 10 mg every 4 to 6 hr. Hydrocodone has also been demonstrated to be a metabolite of codeine.

    After a single oral administration of 10 mg, mean peak serum levels of 20 ng/mL were reported at 1.5 hr; levels dropped to 7 ng/mL at 8 hr.

    Hydrocodone is reported to be more toxic than codeine. In overdose, it produces the same manifestations as other opiates including: drowsiness, sedation, respiratory depression, coma and death. In reported overdosage, post-mortem blood levels ranged from 130 - 7000 ng/mL.

14. Methamphetamine - Chest Blood:

    d-Methamphetamine is a DEA schedule II stimulant drug capable of causing hallucinations, aggressive behavior and irrational reactions. Chemically, there are two forms (isomers) of methamphetamine: l- and d-methamphetamine. The l-isomer is used in non-prescription inhalers as a decongestant and has weak CNS-stimulatory activity. The d-isomer has been used therapeutically as an anorexigenic agent in the treatment of obesity and has potent CNS-, cardiac- and circulatory-stimulatory activity. Amphetamine and norephedrine (phenylpropanolamine) are metabolites of methamphetamine. d-Methamphetamine is an abused substance because of its stimulatory effects and is also addictive.

Reference Comments:

A peak blood concentration of methamphetamine of 20 ng/mL was reported at 2.5 hr after an oral dosage of 12.5 mg. Blood levels of 200 - 600 ng/mL have been reported in methamphetamine abusers who exhibited violent and irrational behavior. High doses of methamphetamine can also elicit restlessness, confusion, hallucinations, circulatory collapse and convulsions.

*In this case, the level of methamphetamine determined has not been differentiated according to its isomeric forms. Differentiation of the isomers of methamphetamine is available upon request.

15. Nicotine - Chest Blood:

Nicotine is a potent alkaloid found in tobacco leaves at about 2 - 8% by weight. It is also reportedly found in various fruits, vegetables and tubers, e.g., tomatoes and potatoes, but at a smaller per weight fraction. As a natural constituent of tobacco, nicotine is found in all commonly used smoking or chewing tobacco products. It is also in smoking cessation products. Nicotine has been used as a pesticide, although not as widely since the advent of more effective agents.

Nicotine is extensively metabolized; the primary reported metabolite is the oxidative product cotinine. Many factors influence the levels found in an individual, including: frequency of use; amount of nicotine exposed to; route of administration; etc.

Toxic effects of nicotine overdose include nausea, vomiting, dizziness, sweating, miosis, EEG and ECG changes, tachycardia, hypertension, respiratory failure, seizures and death. Death from nicotine exposure usually results from either a block of neuromuscular transmission in respiratory muscles or from seizures.

Anabasine is a natural product occurring in tobacco, but not in pharmaceutical nicotine. A separate test for anabasine in urine can be used to distinguish tobacco from pharmaceutical nicotine use.

The reported qualitative result for this substance was based upon a single analysis only. If confirmation testing is required please contact the laboratory.

16. Norfentanyl (Fentanyl Metabolite) - Urine:

Norfentanyl is a metabolite of the synthetic narcotic analgesic fentanyl. Norfentanyl was detectable for up to 72 hr at concentrations of 0.2 - 1.3 ng/mL in urine of 7 adult female patients receiving a single 50 - 100 mcg intravenous fentanyl dose. Groups of chronic pain patients given 25 - 100 mcg/hr transdermal patches had random urine concentrations that averaged 161 - 245 ng/mL for norfentanyl.

17. Opiates - Urine:

Opiates are a class of drugs that have effects similar to morphine. These drugs are most commonly prescribed as analgesics for the relief of pain, but are also utilized for sedation, preanesthetic medication and anesthesia in the hospital setting, and as antitussives and antidiarrheals in ambulatory medicine.

This result derives from a presumptive test, which may be subject to cross-reactivity with non-opiate related compounds. A second test is necessary to confirm the presence of opiate related compounds.

Unless alternate arrangements are made by you, the remainder of the submitted specimens will be discarded one (1) year from the date of this report; and generated data will be discarded five (5) years from the date the analyses were performed.

Workorder 16208842 was electronically signed on 07/20/2016 17:57 by:

Sherri L. Kacinko, Ph.D., F-ABFT
Forensic Toxicologist

Analysis Summary and Reporting Limits:

All of the following tests were performed for this case. For each test, the compounds listed were included in the scope. The Reporting Limit listed for each compound represents the lowest concentration of the compound that will be reported as being positive. If the compound is listed as None Detected, it is not present above the Reporting Limit. Please refer to the Positive Findings section of the report for those compounds that were identified as being present.

Acode 50010B - Amphetamines Confirmation, Blood (Forensic) - Chest Blood

-Analysis by High Performance Liquid Chromatography/ TandemMass Spectrometry (LC-MS/MS) for:

Compound	Rpt. Limit	Compound	Rpt. Limit
Amphetamine	5.0 ng/mL	Methamphetamine	5.0 ng/mL
Ephedrine	5.0 ng/mL	Norpseudoephedrine	5.0 ng/mL
MDA	5.0 ng/mL	Phentermine	10 ng/mL
MDEA	10 ng/mL	Phenylpropanolamine	5.0 ng/mL
MDMA	5.0 ng/mL	Pseudoephedrine	5.0 ng/mL

Acode 50014B - Cocaine and Metabolites Confirmation, Blood (Forensic) - Chest Blood

-Analysis by Gas Chromatography/Mass Spectrometry (GC/MS) for:

Compound	Rpt. Limit	Compound	Rpt. Limit
Benzoylecgonine	50 ng/mL	Cocaine	20 ng/mL
Cocaethylene	20 ng/mL		

Acode 50016B - Opiates - Free (Unconjugated) Confirmation, Blood (Forensic) - Chest Blood

-Analysis by High Performance Liquid Chromatography/ TandemMass Spectrometry (LC-MS/MS) for:

Compound	Rpt. Limit	Compound	Rpt. Limit
6-Monoacetylmorphine - Free	1.0 ng/mL	Hydromorphone - Free	1.0 ng/mL
Codeine - Free	5.0 ng/mL	Morphine - Free	5.0 ng/mL
Dihydrocodeine / Hydrocodol - Free	5.0 ng/mL	Oxycodone - Free	5.0 ng/mL
Hydrocodone - Free	5.0 ng/mL	Oxymorphone - Free	1.0 ng/mL

Acode 52142U - Fentanyl and Metabolite Confirmation, Urine (Forensic)

-Analysis by High Performance Liquid Chromatography/ TandemMass Spectrometry (LC-MS/MS) for:

Compound	Rpt. Limit	Compound	Rpt. Limit
Fentanyl	1.0 ng/mL	Norfentanyl	1.0 ng/mL

Acode 52198B - Cannabinoids Confirmation, Blood (Forensic) - Chest Blood

-Analysis by High Performance Liquid Chromatography/ TandemMass Spectrometry (LC-MS/MS) for:

Compound	Rpt. Limit	Compound	Rpt. Limit
11-Hydroxy Delta-9 THC	1.0 ng/mL	Delta-9 THC	0.50 ng/mL
Delta-9 Carboxy THC	5.0 ng/mL		

Acode 52248B - Alcohols and Acetone Confirmation, Blood (Forensic) - Chest Blood

-Analysis by Headspace Gas Chromatography (GC) for:

Compound	Rpt. Limit	Compound	Rpt. Limit
Acetone	5.0 mg/dL	Isopropanol	5.0 mg/dL
Ethanol	10 mg/dL	Methanol	5.0 mg/dL

Analysis Summary and Reporting Limits:

Acode 53249FL - Alcohols and Acetone Confirmation, Vitreous Fluid (Forensic) - Vitreous Fluid

-Analysis by Headspace Gas Chromatography (GC) for:

Compound	Rpt. Limit	Compound	Rpt. Limit
Acetone	5.0 mg/dL	Isopropanol	5.0 mg/dL
Ethanol	10 mg/dL	Methanol	5.0 mg/dL

Acode 8041B - Postmortem Toxicology - Basic with Vitreous Alcohol Confirmation, Blood (Forensic) - Chest Blood

-Analysis by Enzyme-Linked Immunosorbent Assay (ELISA) for:

Compound	Rpt. Limit	Compound	Rpt. Limit
Amphetamines	20 ng/mL	Fentanyl / Metabolite	0.50 ng/mL
Barbiturates	0.040 mcg/mL	Methadone / Metabolite	25 ng/mL
Benzodiazepines	100 ng/mL	Methamphetamine / MDMA	20 ng/mL
Buprenorphine / Metabolite	0.50 ng/mL	Opiates	20 ng/mL
Cannabinoids	10 ng/mL	Oxycodone / Oxymorphone	10 ng/mL
Cocaine / Metabolites	20 ng/mL	Phencyclidine	10 ng/mL

-Analysis by Headspace Gas Chromatography (GC) for:

Compound	Rpt. Limit	Compound	Rpt. Limit
Acetone	5.0 mg/dL	Isopropanol	5.0 mg/dL
Ethanol	10 mg/dL	Methanol	5.0 mg/dL

Acode 8050U - Postmortem Toxicology - Urine Screen Add-on (6-MAM Quantification only)

-Analysis by Enzyme Immunoassay (EIA) for:

Compound	Rpt. Limit	Compound	Rpt. Limit
Amphetamines	500 ng/mL	Fentanyl / Metabolite	2.0 ng/mL
Barbiturates	0.30 mcg/mL	Methadone / Metabolite	300 ng/mL
Benzodiazepines	50 ng/mL	Opiates	300 ng/mL
Cannabinoids	20 ng/mL	Oxycodone / Oxymorphone	100 ng/mL
Cocaine / Metabolites	150 ng/mL	Phencyclidine	25 ng/mL

Acode 8063B - Postmortem, Basic to Expanded Upgrade, Blood (Forensic) - Chest Blood

-Analysis by High Performance Liquid Chromatography/
Time ofFlight-Mass Spectrometry (LC/TOF-MS) for: The following is a general list of compound classes included in this screen. The detection of any specific analyte is concentration-dependent. Note, not all known analytes in each specified compound class are included. Some specific analytes outside these classes are also included. For a detailed list of all analytes and reporting limits, please contact NMS Labs.
Amphetamines, Anticonvulsants, Antidepressants, Antihistamines, Antipsychotic Agents, Benzodiazepines, CNS Stimulants, Cocaine and Metabolites, Hallucinogens, Hypnosedatives, Hypoglycemics, Muscle Relaxants, Non-Steroidal Anti-Inflammatory Agents, Opiates and Opioids.