

**OFFICE of the WAYNE COUNTY MEDICAL EXAMINER**

1300 East Warren Avenue  
 Detroit, MI 48207

**POST MORTEM REPORT**

M.E. CASE NUMBER  
 17-6097  
 COUNTY OF DEATH  
 WAYNE  
 TOWN OF DEATH  
 DETROIT  
 DATE PRONOUNCED DEAD  
 May 18, 2017

THIS IS TO CERTIFY THAT  Theodore Brown, M.D., Assistant Medical Examiner	PERFORMED A POSTMORTEM EXAMINATION ON THE BODY  CORNELL, CHRISTOPHER
AT Wayne County Medical Examiner's Office	ON May 18, 2017

**SUMMARY & OPINION**

It is my opinion that death was caused by hanging.

Per the investigative report and the police report, the decedent was found partially suspended by a resistance exercise band in his hotel room by his security guard on May 18, 2017. The security guard had to kick in the decedent's locked hotel room door and locked bedroom door. The security guard found the decedent on the bathroom floor with a resistance exercise band around his neck which was looped around itself using the resistance exercise band handle. The opposite end of the resistance exercise band was attached to a metal clip device, which was placed over the top of the bathroom door. The security guard released the resistance exercise band from the top of the door, loosened the end of the resistance exercise band around the decedent's neck, and began resuscitative efforts. Despite resuscitation, the decedent was pronounced dead at the scene on May 18, 2017.

The autopsy was most significant for a ligature furrow mark of the neck, congestion of the head and neck above the ligature furrow mark, florid petechiae of the facial skin, and confluent petechiae of the left and right palpebral conjunctivae, all consistent with hanging, partially suspended by the resistance exercise band.

There were no other injuries or any diseases present that contributed to death. Postmortem toxicology detected butalbital, lorazepam, pseudoephedrine and its metabolite norpseudoephedrine, caffeine, and naloxone in the decedent's blood. These drugs did not contribute to the cause of death.

Based on the circumstances surrounding this death and the autopsy findings, the manner of death is suicide.

printed by: kmr

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Theodore Brown, M.D., Assistant Medical Examiner

June 2, 2017

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(report continues on next page)



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DETROIT  
DATE PRONOUNCED DEAD  
May 18, 2017

**Cause of Death:**

HANGING

**Other Significant Conditions:**

**Manner of Death:**

Suicide

**NARRATIVE SUMMARY**

Case Number: 17 - 6097  
Name: Christopher Cornell  
Date of Pronounced Death: May 18, 2017  
Date of Postmortem Examination: May 18, 2017

**EXTERNAL EXAMINATION:**

The body was that of a normally developed, adult white male appearing about the recorded age of 52 years. The body measured 6 feet 3 inches in length and weighed 180 pounds. The body was cool to touch from refrigeration, rigor mortis was partially developed, and livor mortis was present posteriorly and unfixed. Clothing consisted of a previously torn gray t-shirt and black underwear.

The head was normocephalic. The scalp had long brown hair and streaks of gray. Facial hair consisted of a brown mustache and partial beard with gray streaks. The eyes had blue-hazel irides. The teeth were natural and in a good state of repair. The frenula were intact. There were no masses discernable in the neck and the larynx was in the midline.

The thorax was symmetrical and unremarkable. The abdomen was soft and flat. The external genitalia were those of an adult circumcised male. The extremities and back had no significant deformities. The wrists had no scars. The medial aspect of the right thumb had a 1 x 0.7 centimeter red ulcer. The left knee had multiple, up to 2 centimeters, scars. The anterior aspect of the left leg had two, 3.5 x 3 centimeters, each, echymoses. Tattoos consisted of images and inscriptions on the right shoulder.

**EVIDENCE OF TREATMENT:**

An endotracheal tube was in place and was secured by adhesive tape wrapped around the head. The skin under the adhesive tape had a red-purple discoloration. The mid aspect of the lower lip had a focal, tan abrasion. Adhesive defibrillator pads were on the torso. The left antecubital fossa had four, 0.1 centimeter to 0.2 centimeter, needle puncture wounds. An intraosseous catheter extended from the anterior aspect of the right leg.

The soft tissues and muscles of the chest had multiple foci of hemorrhage. The anterior aspects of the right second through sixth and left second through fifth ribs were fractured. The anterior mediastinal soft tissues were hemorrhagic. The anterior aspects of the right and left lungs had focal areas of hemorrhage.

**EVIDENCE OF INJURY- HANGING:**



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A circumferential ligature furrow mark was around the neck. On the anterior aspect and left side of the neck, the ligature furrow mark was dry, red-purple, and had areas of pallor. On the right side and posterior aspect of the neck, the ligature furrow mark was dry, faint red-purple, and had a central area of pallor.

On the anterior aspect of the neck, the ligature furrow mark was 11-1/2 inches below the top of the head, up to 0.5 centimeter wide, and above the thyroid cartilage. On the left side of the neck, the ligature furrow mark extended posterior and upward, and was up to 1.2 centimeters wide. On the right side of the neck, the ligature furrow mark extended posterior and upward, and was up to 2 centimeters wide. On the posterior aspect of the neck, the ligature furrow mark curved upward and was 8 inches below the top of the head. In addition, the posterior aspect of the neck had four, less than 0.1 centimeter to 0.5 centimeter, dry, tan, abrasions, associated with the ligature furrow mark.

A layered dissection of the anterior aspect of the neck demonstrated no hemorrhages of the soft tissues and muscles. The hyoid bone and thyroid cartilage had no fractures.

Associated with the hanging was pronounced congestion of the head and neck above the ligature furrow mark, florid petechiae of the facial skin, and confluent petechiae of the left and right palpebral conjunctivae.

#### INTERNAL EXAMINATION:

An autopsy was performed utilizing the normal thoraco-abdominal and posterior coronal scalp incisions. The pleural cavities, pericardial sac, and peritoneal cavity had smooth serosal surfaces and the viscera were in their normal anatomical positions. Except for the above previously described injuries, the internal systems were as follows:

##### Head:

No abnormality was noted in the reflected scalp, calvarium, dura, meninges, or the base of the skull. The 1600 gram brain was free of neoplastic and other focal lesions, infarcts, and hemorrhages. The cerebral vascular system was congested.

##### Neck:

No abnormality was noted in the cervical muscles, hyoid bone, thyroid cartilage, trachea, or the cervical vertebral column.

##### Cardiovascular System:

The 400 gram heart had a normal configuration with an unremarkable epicardial surface and a mild amount of epicardial fat. The coronary arteries had no significant atherosclerotic disease. No acute thrombi were present. The left ventricular free wall was 1.8 centimeters thick; the interventricular septum was 1.7 centimeters thick; and the right ventricular free wall was 0.3 centimeter thick. No focal endomyocardial lesions were present. The papillary muscles and chordae tendineae were not thickened, and the heart valves were unremarkable. The aorta had no significant atherosclerosis.

##### Respiratory System:

The larynx and trachea were unremarkable. The epiglottis had focal areas of congestion. The right and left lungs weighed 1150 grams and 975 grams, respectively. The parenchyma was red-dark red and congested. No pulmonary emboli were identified.

##### Hepatobiliary System:

The 1750 gram liver had firm dark tan surfaces and an unremarkable parenchymal pattern. The gallbladder was unremarkable.

##### Hemolymphatics:

The 225 gram spleen had smooth surfaces and dark purple firm pulp. There was no significant lymphadenopathy.

##### Alimentary System:



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The lateral aspects of the tongue had multiple, up to 2 centimeters, foci of congestion. The posterior aspect of the tongue was congested. The esophagus, stomach, small bowel, appendix, and colon were unremarkable. The lining of the stomach had an intact and unremarkable rugal pattern and the contents of the stomach consisted of approximately 10 milliliters of tan-brown fluid. No pills were in the stomach.

#### Pancreas:

The pancreas had an unremarkable tan lobulated pattern.

#### Endocrine System:

The thyroid gland had a normal bilobed configuration. The adrenal glands were each unremarkable with golden-yellow cortices.

#### Genitourinary System:

The right and left kidneys weighed 125 grams and 150 grams, respectively. Each kidney had smooth cortical surfaces and normal cortico-medullary regions. The bladder was tan, smooth, and unremarkable. The prostate gland had multiple, up to 1.5 centimeters, centrally-located, tan, well-circumscribed nodules.

#### Musculoskeletal System:

All of the muscles and axial skeleton were free of any significant abnormalities.

Routine tissue specimens were retained in formalin for one year after autopsy in accordance with the current record retention schedule.

### MICROSCOPIC DESCRIPTION

#### Cassette Summary:

1. Liver
2. Kidneys
3. Lung, right upper and middle lobes
4. Lung, right lower lobe
5. Lung, left upper and lower lobes
6. Heart, left ventricular free wall
7. Heart, septum
8. Heart, septum
9. Brain, cerebral cortex (including meninges)
10. Brain

Heart: Foci of increased interstitial and perivascular fibrosis with associated myocyte hypertrophy.

Lungs: Vascular congestion.

Liver: No significant histopathologic abnormality.

Kidneys: No significant histopathologic abnormality.

Brain: No significant histopathologic abnormality.

### ANATOMIC DIAGNOSES

1. Hanging:
  - a. Ligature furrow mark of the neck
  - b. Congestion of the head and neck above the ligature furrow mark
    - c. Florid petechiae of the facial skin
    - d. Confluent petechiae of the left and right palpebral conjunctivae
2. Status post acute cardiopulmonary resuscitation
3. Concentric left ventricular hypertrophy
4. Pulmonary congestion



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5. Multinodular prostate gland

POSTMORTEM TOXICOLOGY

Caffeine Positive - Peripheral Blood  
Naloxone Positive - Peripheral Blood  
Butalbital 5.4 mcg/mL - Peripheral Blood  
Lorazepam 41 ng/mL - Peripheral Blood  
Pseudoephedrine 170 ng/mL - Peripheral Blood  
Norpseudoephedrine 10 ng/mL - Peripheral Blood  
Barbiturates Presump Pos - Urine

**(End of Report)**



NMS Labs

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Robert A. Middleberg, PhD, F-ABFT, DABCC-TC, Laboratory Director

Toxicology Report

Report Issued 06/01/2017 22:04

Patient Name CORNELL, CHRISTOPHER
Patient ID 17-6097
Chain 17156412
Age Not Given DOB Not Given
Gender Male
Workorder 17156412

To: 10373
University of Michigan - Wayne County
Attn: Dr. Carl J. Schmidt
1300 East Warren
Detroit, MI 48207

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Positive Findings:

Table with 4 columns: Compound, Result, Units, Matrix Source. Rows include Caffeine, Naloxone, Butalbital, Lorazepam, Pseudoephedrine, Norpseudoephedrine, and Barbiturates.

See Detailed Findings section for additional information

Testing Requested:

Table with 2 columns: Analysis Code, Description. Rows include 8057B and 8050U.

Specimens Received:

Table with 5 columns: ID, Tube/Container, Volume/Mass, Collection Date/Time, Matrix Source, Miscellaneous Information. Rows include 001 through 005.

All sample volumes/weights are approximations.
Specimens received on 05/19/2017.



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Patient ID 17-6097

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**Detailed Findings:**

Analysis and Comments	Result	Units	Rpt. Limit	Specimen Source	Analysis By
Caffeine	Positive	mcg/mL	0.20	001 - Peripheral Blood	LC/TOF-MS
Naloxone	Positive	ng/mL	1.0	001 - Peripheral Blood	LC/TOF-MS
Butalbital	5.4	mcg/mL	0.20	001 - Peripheral Blood	GC/MS
Lorazepam	41	ng/mL	5.0	001 - Peripheral Blood	LC-MS/MS
Pseudoephedrine	170	ng/mL	5.0	001 - Peripheral Blood	LC-MS/MS
Norpseudoephedrine	10	ng/mL	5.0	001 - Peripheral Blood	LC-MS/MS
Barbiturates	Presump Pos	mcg/mL	0.30	004 - Urine	EIA

This test is an unconfirmed screen. Confirmation by a more definitive technique such as GC/MS is recommended.

**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. Barbiturates - Urine:

Barbiturates are CNS depressants that are prescribed as therapy for a variety of conditions including analgesia and minor medical procedures. Barbiturates may be used for their rapid action in the emergency treatment of convulsions and to reduce cerebral blood flow and oxygen consumption in patients with cerebral edema.

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

2. Butalbital - Peripheral Blood:

Butalbital is a barbiturate derivative with an intermediate duration of action. Signs noted following its administration include drowsiness, sedation and ataxia. The substance is often found in combination with other compounds, such as acetaminophen, aspirin, codeine, or caffeine. Typically these mixtures contain 50 mg of butalbital.

The reported mean peak blood concentration following a single 100 mg dose of butalbital was 2.1 mcg/mL (range, 1.7 - 2.6 mcg/mL) at 2 hours with a decline to 1.5 mcg/mL (range, 1.3 - 1.7 mcg/mL) by 24 hours.

Concentrations of butalbital in 64 persons arrested for driving under the influence of drugs have been reported at blood concentrations ranging from 0.1 - 28 mcg/mL (average 8.5 mcg/mL). Two reported butalbital-related deaths had blood concentrations of 13 and 26 mcg/mL.

3. Caffeine (No-Doz) - Peripheral 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.



**Reference Comments:**

4. Lorazepam (Ativan®) - Peripheral Blood:

Lorazepam is a DEA Schedule IV benzodiazepine used in the treatment of anxiety and for short-term relief of anxiety associated with depressive symptoms. It shares the actions and adverse reactions of other CNS-depressants. This compound does have abuse potential and should be used cautiously with other CNS-depressants.

Lorazepam can be administered by oral, IV and IM routes; daily divided oral doses of up to 10 mg are generally prescribed for anxiety. Following a single oral dose of 2 mg, lorazepam concentrations in plasma averaged 20 ng/mL, declining to 10 ng/mL by 12 hours. Chronic oral administration of 10 mg dose resulted in an average steady-state plasma lorazepam level of 200 ng/mL (range, 140 - 240 ng/mL). In blood, the maximum therapeutic effect with lorazepam is reported to be within the range of 30 - 50 ng/mL.

Fatalities with lorazepam are relatively rare and generally have postmortem blood concentrations exceeding 300 ng/mL; however, such concentrations are not necessarily fatal.

5. Naloxone (Narcan®) - Peripheral Blood:

Naloxone is a narcotic antagonist used to counter the central nervous system depression effects of opioids, including respiratory depression. It is also used for the diagnosis of suspected acute opioid overdose. Naloxone is available as a 0.4 mg/mL solution of the hydrochloride for parenteral injection.

Naloxone is also available in combination with buprenorphine (Suboxone®) for the treatment of opioid dependence. This combination is available in tablets of 2 mg buprenorphine with 0.5 mg naloxone or 8 mg buprenorphine with 2 mg of naloxone for sublingual administration.

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

6. Norpseudoephedrine (Cathine) - Peripheral Blood:

Norpseudoephedrine is a metabolite of Pseudoephedrine.

7. Pseudoephedrine - Peripheral Blood:

Pseudoephedrine is a sympathomimetic decongestant used to treat respiratory symptoms of allergies and the common cold. It is commonly found in both prescription and non-prescription cold/allergy remedies either alone or in combination with antihistamines, antitussives, expectorants, and/or analgesics. The usual oral adult dosage of pseudoephedrine in immediate-release preparations is 60 mg every 4 to 6 hours; the usual oral dosage for extended-release preparations is either 120 mg every 12 hours or 240 mg once daily.

Pseudoephedrine is metabolized to a small extent in the liver by N-demethylation to form norpseudoephedrine (cathine). About 90% of a dose is excreted in the urine within 36 hours. Between 55 - 75% of a dose is excreted as unchanged drug, the remainder as metabolites with less than 1% excreted as norpseudoephedrine. The elimination in urine is pH-dependent, increasing with acidification and decreasing with alkalization (tubular reabsorption occurs at pH > 7.0). Due primarily to the pH-dependent differences in excretion, the elimination half-life of pseudoephedrine may vary from 3 to 16 hours.

Following a 60 mg oral dose, a mean peak plasma level of 200 ng/mL at 3 hours was reported; after a 180 mg oral dose, the mean peak plasma level was 800 ng/mL. A postmortem blood concentration of 19000 ng/mL was reported in a fatal case. Pseudoephedrine may exhibit postmortem redistribution; the mean heart/femoral ratio reported is 1.5 (range, 0.9 - 2.2).

Unless alternate arrangements are made by you, the remainder of the submitted specimens will be discarded two (2) years from the date of this report; and generated data will be discarded five (5) years from the date the analyses were performed.

Workorder 17156412 was electronically signed on 06/01/2017 21:44 by:

Daniel S. Isenschmid, 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 50011B - Barbiturates Confirmation, Blood (Forensic) - Peripheral Blood

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

<u>Compound</u>	<u>Rpt. Limit</u>	<u>Compound</u>	<u>Rpt. Limit</u>
Amobarbital	0.20 mcg/mL	Pentobarbital	0.20 mcg/mL
Butobarbital	0.20 mcg/mL	Phenobarbital	0.20 mcg/mL
Butalbital	0.20 mcg/mL	Secobarbital	0.20 mcg/mL

Acode 50012B - Benzodiazepines Confirmation, Blood (Forensic) - Peripheral Blood

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

<u>Compound</u>	<u>Rpt. Limit</u>	<u>Compound</u>	<u>Rpt. Limit</u>
7-Amino Clonazepam	5.0 ng/mL	Flurazepam	2.0 ng/mL
Alpha-Hydroxyalprazolam	5.0 ng/mL	Hydroxyethylflurazepam	5.0 ng/mL
Alprazolam	5.0 ng/mL	Hydroxytriazolam	5.0 ng/mL
Chlordiazepoxide	20 ng/mL	Lorazepam	5.0 ng/mL
Clobazam	20 ng/mL	Midazolam	5.0 ng/mL
Clonazepam	2.0 ng/mL	Nordiazepam	20 ng/mL
Desalkylflurazepam	5.0 ng/mL	Oxazepam	20 ng/mL
Diazepam	20 ng/mL	Temazepam	20 ng/mL
Estazolam	5.0 ng/mL	Triazolam	2.0 ng/mL

Acode 52485B - Amphetamines Confirmation, Blood (Forensic) - Peripheral Blood

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

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

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

-Analysis by Enzyme Immunoassay (EIA) for:

<u>Compound</u>	<u>Rpt. Limit</u>	<u>Compound</u>	<u>Rpt. Limit</u>
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 8057B - Postmortem, Expanded w/Vitreous Alcohol Confirmation, Blood - University of MI (CSA) - Peripheral Blood

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



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Patient ID 17-6097

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**Analysis Summary and Reporting Limits:**

<u>Compound</u>	<u>Rpt. Limit</u>	<u>Compound</u>	<u>Rpt. Limit</u>
Barbiturates	0.040 mcg/mL	Salicylates	120 mcg/mL
Cannabinoids	10 ng/mL		

-Analysis by Headspace Gas Chromatography (GC) for:

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

-Analysis by High Performance Liquid Chromatography/Time of Flight-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, Hypnotics, Hypoglycemics, Muscle Relaxants, Non-Steroidal Anti-Inflammatory Agents, Opiates and Opioids.