

**EL PASO COUNTY CORONER  
2741 EAST LAS VEGAS STREET  
COLORADO SPRINGS, COLORADO 80906**

NAME: BURCH, Michael

COUNTY: HUERFANO

Date of Birth: 5/18/1953

Age: 69

AUTOPSY NO: **23-0340**

AUTOPSY DATE: 4/7/2023

Sex: Male Ht: 69"

Wt: 167 lbs.

BEGAN: 0800

MD: Leon Kelly, M.D.

DATE OF PRONOUNCEMENT: 4/4/2023

TIME OF PRONOUNCEMENT: 0745

Identified by: Fingerprints

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**FINAL DIAGNOSIS:**


- I. Complications of blunt force trauma to the chest and abdomen
  - A. Extensive and deep soft tissue bruising of the lateral right chest, flank, sacrum and abdomen
  - B. Widely displaced fractures of right ribs 7-12
  - C. Right hemothorax, 500 mL
  - D. Atelectasis of the right lung
  - E. Probable intestinal bruising with copious hemorrhage within the distal small intestine and colon
  - F. Complaints of right chest pain with a decline over the last several days following injury
- II. Blunt force injuries of the face and extremities
- III. Clinical history of chronic renal insufficiency with bilateral scarring and nephrosclerosis
- IV. Cardiac hypertrophy, mild, 430 gm

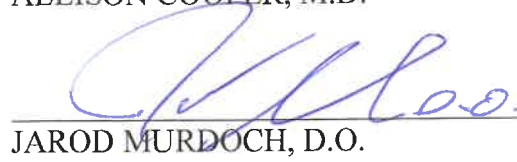
**OPINION:** It is my opinion that Michael Burch, a 69-year-old Caucasian male, died as a result of complications of blunt force trauma to the chest and abdomen. These injuries were incurred when the decedent was tased and wrestled to the ground by law enforcement striking his right chest and flank at the Huerfano County Jail. Video footage of the incident is reviewed.


**MANNER OF DEATH: Homicide**

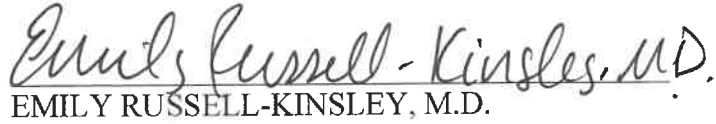
23-00340

  
LEON KELLY, M.D.

  
ALLISON COOPER, M.D.

  
JAROD MURDOCH, D.O.

  
MEGAN KLIESNER, M.D.

  
EMILY RUSSELL-KINSLEY, M.D.

April 28, 2023

LK

**PERSONS PRESENT AT AUTOPSY**

Investigators Andrew Marceau, Jay Moss, Tanya Atkinson, and Courtney McCormack of the Colorado Bureau of Investigation are present for the postmortem examination.

**GENERAL EXAMINATION**

The body is that of a normally-developed, well-nourished, older adult Caucasian male, 69 inches tall, weighing 167 lbs, and appearing compatible with the stated age of 69 years. The deceased is clad in an orange short-sleeved T-shirt and orange shorts. Received loose in the body bag are a pair of orange socks, yellow pants, and 2 brown blankets.

Full body radiographs are examined.

Received from investigators are 3 prescription bottles containing omeprazole, metoprolol, and tamsulosin which are retained as evidence.

**EXTERNAL EXAMINATION**

There is good preservation in the absence of embalming. Rigor mortis is fully developed in the extremities, jaw, and neck. Lividity is reddish purple and fixed over the posterior body surfaces. The deceased has gray scalp hair measuring 8 inches in maximum length. The irides appear blue; the corneae are clear; and the conjunctivae are without petechiae. The ears, nose, lips, and external auditory canals are unremarkable. The mouth has natural dentition in good condition. The external genitalia and perineum are unremarkable.

Except for the evidence of medical therapy and the injuries to be described, the remainder of the external examination of the body is unremarkable.

**EVIDENCE OF MEDICAL THERAPY**

Cardiac monitoring pads are adherent to the right abdomen and right chest.

**EVIDENCE OF INJURY**

The right side of the forehead has a 1.5 x 0.5 cm yellow abrasion. The lateral wall of the left nostril has a 0.2 cm red abrasion.

The lateral right chest, flank, abdomen, and hip exhibit a 33 x 17 cm red-purple contusion.

The tip of the anterior right shoulder has a 3 x 1.5 cm red contusion. The anterior right arm has a 2 cm in diameter red contusion. The volar right forearm has a 1.5 cm in diameter red contusion. The back of the right forearm on its radial aspect has a 13 x 5 cm patchy red contusion at the center of which is a 3 cm laceration. The back of the right wrist has an 8 x 5 cm patchy red contusion. The back of the right hand between the metacarpal phalangeal joints of the fourth and fifth fingers is a 0.5 x 0.3 cm orange abrasion.

The anterior left arm has a 10 x 3 cm purple-red contusion. The lateral aspect the left elbow has a 0.5 cm in diameter red abrasion. The back of the left elbow has a 0.5 cm in diameter red abrasion. Immediately distal to the left elbow is a 1.2 cm laceration. The back of the left forearm has a 4 x 2 cm red contusion. The ulnar aspect of the back of the left forearm has a 2 cm in diameter red contusion. The back of the mid left forearm has a 2.5 cm in diameter red contusion. The back of the left forearm has a 1 cm in diameter red contusion. On the ulnar aspect of the back of the distal left forearm is a 1 cm in diameter red contusion. The back of the left thumb has a 0.5 cm orange abrasion.

The left buttock has a 5 x 3 cm red abrasion. The medial aspect of the left thigh has a 45 x 17 cm red contusion. The lateral aspect the left thigh has a 20 x 20 cm red contusion. Beginning at the knee and wrapping laterally around the left calf is a 28 x 25 cm red contusion at the center of which is a 0.5 cm red abrasion.

The medial aspect of the right leg has a 2.5 cm in length skin tear.

Reflection of the skin of the thorax reveals deep soft tissue contusion of the chest, flank, abdomen, and pelvis.

The skin of the back is reflected revealing dense and deep hemorrhage overlying the sacrum, lower right back, and extending to the right flank.

The medial and lateral aspects of the wrists and ankles and bottoms of the feet are incised which fails to reveal restraint injuries.

Subsequent internal examination of the chest reveals 500 mL of liquid blood in the right chest cavity.

Subsequent internal examination of the abdomen reveals intraluminal gastrointestinal hemorrhage beginning at the mid jejunal level extending into the colon. There is no evidence of peritonitis and while blood stained, the mucosal surface appears viable and intact. The mucosa is examined in its entirety and is free of mass lesions, erosion, or ulceration. There is no evidence of bowel infarction. There is bruising of the right abdominal wall but the mesentery is intact and without evidence of infarction or peritonitis.

### **INTERNAL EXAMINATION**

**HEAD:** The scalp is incised and retracted. The scalp, subscalpular area, and skull are unremarkable. The cranial vault is opened revealing thin, tough, pliable dura and no hemorrhage in the epidural, subdural, or subarachnoid spaces. The cerebrospinal fluid is clear. The brain weighs 1440 gm and the cerebral hemispheres, midbrain, and pons appear slightly pale but are otherwise symmetrical and grossly unremarkable. On cross-section of the brain parenchyma, there is no evidence of infection, tumor, or trauma. The dura is stripped from the basilar skull and no fractures are found.

**BODY:** The body is opened with a Y-shaped incision. The organs occupy their usual positions and relationships. Other than noted in the *Evidence of Injury* section, The body cavities are free

of adhesions or abnormal collections of fluid.

NECK: The hyoid bone and larynx are intact. The airway is patent and there is no evidence of infection or tumor. The thyroid gland and tongue are unremarkable.

CARDIOVASCULAR SYSTEM: The intimal surface of the abdominal aorta is free of significant atherosclerosis. The heart weighs 430 gm. The epicardial and endocardial surfaces are smooth and glistening. The myocardium is uniformly firm and has a homogeneous, beefy-red appearance. The cardiac valves are thin, delicate, and unremarkable. The coronary arteries are free of significant atherosclerosis.

LUNGS: The right lung weighs 470 gm and the left lung weighs 860 gm. The right lung is atelectatic. The major bronchi are unremarkable. The pleural surfaces are smooth and glistening and have a purple-red appearance. On cross-section, the parenchyma appears congested. There are no pulmonary emboli.

GASTROINTESTINAL SYSTEM: The esophagus, stomach, small and large bowel, and appendix are unremarkable. The stomach contains approximately 200 mL of dark brown granular partially digested food.

LIVER: The liver weighs 1410 gm. The capsule is smooth and glistening. The parenchyma is dark red-brown and moderately congested. The gallbladder contains 10 mL of dark green bile with no calculi.

PANCREAS: Unremarkable.

ADRENAL GLANDS: Unremarkable.

SPLEEN: The spleen weighs 100 gm and the capsule is smooth and blue-gray. On cross-section, the parenchyma is unremarkable.

KIDNEYS: The right kidney weighs 100 gm and the left kidney weighs 120 gm. The capsules strip revealing a deeply scarred and granular cortical surface. On cross-section, the cortices appear slightly pale with disappearance of the cortical medullary junction. The renal medulla has a gritty texture on sectioning. The collecting systems, ureters, and bladder are otherwise unremarkable. The urinary bladder contains 300 mL of clear-yellow urine.

PROSTATE: There is mild enlargement and nodularity.

### **MICROSCOPIC EXAM**

#### **Slide Key:**

- Slide #1: Left ventricular free wall
- Slide #2: Interventricular septum and right ventricular free wall
- Slide #3: Right lung
- Slide #4: Left lung

Slide #5: Liver and kidneys  
Slide #6: Brain  
Slide #7: Duodenum and jejunum

HEART: There is rare myocyte hypertrophy with no evidence of ischemic change.

LUNGS: The right lung shows significant atelectatic change compared to the left lung. There is scattered anthracosis but no significant acute inflammatory component.

LIVER: No specific histopathologic abnormalities identified.

KIDNEYS: The renal cortices contain occasional to frequent globally sclerotic glomeruli with associated interstitial fibrosis and a robust chronic inflammatory infiltrate. There is typical postmortem tubular artifact but no pathologic process. The vessels exhibit a small degree of arteriosclerosis.

BRAIN: No specific histopathologic abnormality is identified.

SMALL INTESTINE: Typical postmortem decompositional artifact is noted. There is no evidence of ischemic change or inflammatory process. The mucosa appears intact.

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## NMS Labs

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e-mail: nms@nmslabs.com

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

### Toxicology Report

Report Issued 04/26/2023 16:06

To: 10276  
El Paso County Coroner's Office  
Attn: Sandy Way  
2741 E. Las Vegas Street  
Colorado Springs, CO 80906

Patient Name BURCH, MICHAEL  
Patient ID 23-00340  
Chain NMSCP248071  
DOB 05/18/1953  
Sex Male  
Workorder 23136374

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### Positive Findings:

| Analyte                | Result      | Units | Matrix Source     |
|------------------------|-------------|-------|-------------------|
| Metoprolol             | Presump Pos | ng/mL | 001 - Heart Blood |
| Olanzapine             | 120         | ng/mL | 001 - Heart Blood |
| 11-Hydroxy Delta-9 THC | 1.5         | ng/mL | 001 - Heart Blood |
| Delta-9 Carboxy THC    | 16          | ng/mL | 001 - Heart Blood |
| Delta-9 THC            | 3.4         | ng/mL | 001 - Heart Blood |

See Detailed Findings section for additional information

### Testing Requested:

| Test  | Test Name  |
|-------|--|
| 8084B | Postmortem, Expanded w/Vitreous Alcohol and 6-MAM Confirmation, Blood (Forensic) |

### Specimens Received:

| ID  | Tube/Container                 | Volume/<br>Mass | Collection<br>Date/Time | Matrix Source  | Labeled As |
|-----|--------------------------------|-----------------|-------------------------|----------------|------------|
| 001 | Gray Stopper Glass Tube        | 8.75 mL         | 04/07/2023 11:49        | Heart Blood    | 23-00340   |
| 002 | Red Stopper Glass Tube         | 2 mL            | 04/07/2023 11:47        | Vitreous Fluid | 23-00340   |
| 003 | White Cap Plastic<br>Container | 7 mL            | 04/07/2023 11:47        | Urine          | 23-00340   |

All sample volumes/weights are approximations.  
Specimens received on 04/11/2023.

**Detailed Findings:**

| Analysis and Comments   | Result      | Units | Rpt. Limit | Specimen Source   | Analysis By |
|---|-------------|-------|------------|-------------------|-------------|
| Metoprolol  | Presump Pos | ng/mL | 20         | 001 - Heart Blood | LC/TOF-MS   |
| This test is an unconfirmed screen. Confirmation by a more definitive technique such as GC/MS is recommended. |             |       |            |                   |             |
| Olanzapine  | 120         | ng/mL | 3.0        | 001 - Heart Blood | LC-MS/MS    |
| 11-Hydroxy Delta-9 THC  | 1.5         | ng/mL | 1.0        | 001 - Heart Blood | LC-MS/MS    |
| Delta-9 Carboxy THC   | 16          | ng/mL | 5.0        | 001 - Heart Blood | LC-MS/MS    |
| Delta-9 THC   | 3.4         | ng/mL | 0.50       | 001 - Heart Blood | 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. 11-Hydroxy Delta-9 THC (Active Metabolite) - Heart Blood:

11-hydroxy-THC is a psychoactive THC metabolite. 11-OH-THC was detectable in blood, with a 0.5 ng/mL cutoff, for 1.5 hours (range: 0.25-3.5) when cannabis was smoked by occasional users. 11-OH-THC may be present over 72 hours in chronic, frequent cannabis users.

In occasional cannabis users, median (range) peak blood concentrations after smoking of 6.9% (50 mg) THC were 1.9 (0.5-8.7) ng/mL with median times of maximum concentrations at approximately 11 minutes. In chronic, frequent cannabis users, median (range) peak blood concentrations after smoking 6.9% THC were 7.2 (1.9-30.9) ng/mL, with median times of maximum concentrations at approximately 12 minutes. Usual peak levels are less than 10% of THC levels after smoking.

2. Delta-9 Carboxy THC (Inactive Metabolite) - Heart 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.

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

Delta-9 THC is the principle psychoactive ingredient of marijuana (cannabis, hashish). It is also the active component of the prescription medication Marinol®. Marijuana use causes relaxation, distorted perception, euphoria and feelings of well being, along with confusion, dizziness, somnolence, ataxia, speech difficulties, lethargy and muscular weakness.

After smoking a user-preferred 300 mcg/kg dose average plasma THC concentrations at 35 minutes were reported at 16.1 (range 4.7-30.9) ng/mL, and had declined to 1.5 (range 0.4-3.2) ng/mL after 190 minutes. 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. Whole blood THC concentrations are typically half those in a corresponding plasma sample.

4. Olanzapine (Zyprexa®) - Heart Blood:

Olanzapine is a drug used in the treatment of psychotic disorders (schizophrenia and bipolar mania). It is administered orally (5 to 10 mg daily) or by intramuscular injection (5 to 10 mg) for the relief of symptoms. Plasma concentrations required for effective treatment of psychotic episodes range from 20 to 80 ng/mL in adults. Schizophrenic patients stabilized with olanzapine at an average daily dose of 14 mg had steady-state olanzapine plasma concentrations averaging 37 +/- 26 ng/mL.

The following side effects have been reported following use of this compound; disturbances of body temperature, cardiovascular complications, altered mental status and tardive dyskinesia (uncontrolled movements of extremities). In 3 reported fatalities involving acute overdoses of the drug, postmortem blood concentrations ranged from 800 - 4900 ng/mL. The blood to plasma ratio of olanzapine is approximately 0.6.





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Workorder 23136374  
Chain NMSCP248071  
Patient ID 23-00340

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**Sample Comments:**

001 Physician/Pathologist Name: Dr. Leon Kelly  
001 County: Huerfano

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 23136374 was electronically signed on 04/26/2023 15:18 by:

Kristopher W. Graf, M.S., D-ABFT-FT  
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.

**Test 52091B - Olanzapine Confirmation, Blood - Heart Blood**

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

| <u>Analyte</u> | <u>Rpt. Limit</u> | <u>Analyte</u> | <u>Rpt. Limit</u> |
|----------------|-------------------|----------------|-------------------|
| Olanzapine     | 3.0 ng/mL         |                |                   |

**Test 52198B - Cannabinoids Confirmation, Blood - Heart Blood**

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

| <u>Analyte</u>         | <u>Rpt. Limit</u> | <u>Analyte</u> | <u>Rpt. Limit</u> |
|------------------------|-------------------|----------------|-------------------|
| 11-Hydroxy Delta-9 THC | 1.0 ng/mL         | Delta-9 THC    | 0.50 ng/mL        |
| Delta-9 Carboxy THC    | 5.0 ng/mL         |                |                   |

**Test 8084B - Postmortem, Expanded w/Vitreous Alcohol and 6-MAM Confirmation, Blood (Forensic) - Heart Blood**

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

| <u>Analyte</u> | <u>Rpt. Limit</u> | <u>Analyte</u> | <u>Rpt. Limit</u> |
|----------------|-------------------|----------------|-------------------|
| Barbiturates   | 0.040 mcg/mL      | Gabapentin     | 5.0 mcg/mL        |
| Cannabinoids   | 10 ng/mL          | Salicylates    | 120 mcg/mL        |

-Analysis by Headspace Gas Chromatography (GC) for:

| <u>Analyte</u> | <u>Rpt. Limit</u> | <u>Analyte</u> | <u>Rpt. Limit</u> |
|----------------|-------------------|----------------|-------------------|
| Acetone        | 5.0 mg/dL         | Isopropanol    | 5.0 mg/dL         |
| Ethanol        | 10 mg/dL          | Methanol       | 10 mg/dL          |



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**Workorder** 23136374  
**Chain** NMSCP248071  
**Patient ID** 23-00340

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**Analysis Summary and Reporting Limits:**

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



# EL PASO COUNTY OFFICE OF THE CORONER

2741 E Las Vegas St., Colorado Springs, CO 80906  
Main: 719-390-2450 / Fax: 719-390-2462

Leon Kelly, M.D.

County Coroner  
Medical Examiner  
Laboratory Director

## FINAL TOXICOLOGY REPORT

NAME: Burch, Michael

CASE NUMBER: 23-00340

AGENCY CASE NUMBER:

COUNTY: Huerfano

STAFF PATHOLOGIST: Dr. Murdoch, Jarod

PRONOUNCED DATE: 04/04/2023 07:45

DATE RECEIVED:

FINAL REPORT DATE: 4/7/2023

**TEST:** i-STAT Vitreous

**SAMPLE TYPE:** Vitreous

**Collected Date/Time:** 04/07/2023 11:48

**Analyte:**

**Result:**

**Instrument:**

Sodium

125 mmol/L

Abbott iSTAT

Potassium

17.0 mmol/L

Abbott iSTAT

Chloride

117 mmol/L

Abbott iSTAT

Glucose

< 20 mg/dL

Abbott iSTAT

BUN

120 mg/dL

Abbott iSTAT

Creatinine

1.6 mg/dL

Abbott iSTAT

**Additional Comments:**

Dr. Kelly, Leon  
04/07/2023 12:19

Dr. Kelly, Leon