Office of Chief Medical Examiner
Tarrant County Medical Examiner's District
Tarrant County, Texas
[redacted]

AUTOPSY REPORT

Name: Philip Andrew IRONS
Approximate Age: 32 years
Height: 72 inches

CASE NO: 1013091
Sex: Male
Weight: 176.6 pounds

We hereby certify that on the 3rd day of November, 2010, beginning at 1000 hours, we, Shipping Bao, M.D. and Nizam Peerwani, M.D. pursuant to Statute 49.25 of Texas Criminal Code, performed a complete autopsy on the body of PHILIP ANDREW IRONS at the Tarrant County Medical Examiner's District Morgue in Fort Worth, Texas and upon investigation of the essential facts concerning the circumstances of the death and history of the case as known to me, I am of the opinion that the findings, cause and manner of death are as follows:

FINDINGS:

I. **Investigative Findings**:
- A. Decedent discovered unresponsive in a hotel room at Dallas-Fort Worth International Airport and pronounced dead at the scene
- B. Suspected history of dengue fever
- C. Reported history of drug abuse
- D. Suicide Profile:
  1. History of depression: Yes
  2. Suicide ideations, threatened suicide or previous attempted suicide: None
  3. Suicide Note at the scene: None

II. **Postmortem Findings**:
- A. Atherosclerotic cardiovascular disease with:
  1. Cardiomegaly (weight = 423 gms)
  2. Absence of hypertrophy or dilatation
  3. Severe occlusive coronary atherosclerosis with focal 70-80% stenosis of left anterior descending branch
- B. Postmortem toxicology:
  1. Aorta Blood ethanol: Negative
  2. Femoral vein blood:
     a. Alprazolam = 52 ng/mL (lethal > 122 ng/mL)
     b. Benzoylecgonine (metabolite of cocaine) = 50 ng/mL

FINDINGS (Continued):

c. Methadone = 160 ng/mL (lethal > 400 ng/mL)
d. EDDP (metabolite of Methadone) = 16 ng/mL

C. Forensic Chemistry Lab Report (drugs at the scene): Alprazolam, Zolpidem and Methadone identified
D. Pulmonary vascular congestion, bilateral, severe, with mild edema
E. Hepatomegaly (weight = 2256 gms) with mild fatty metamorphosis
F. No evidence of dengue fever:
   1. Absence of clinical findings of typical history or postmortem findings of hemorrhagic rash
   2. Laboratory findings: Absence of immunochemical or molecular evidence of dengue fever (see CDC Report)

III. No evidence of trauma or foul play

COMMENT: Toxicology studies performed indicate recent use of both methadone and cocaine. Deaths, both cardiac and respiratory, have been reported during initiation and conversion of pain patients to methadone treatment. Although respiratory depression is the chief hazard associated with methadone hydrochloride administration, cases with QT interval prolongation and serious arrhythmia (torsades de pointes) have been observed during treatment with methadone, especially in patients being treated for pain with large, multiple daily doses of methadone. Cases also have been reported in patients receiving doses commonly used for maintenance treatment of opioid addiction. Torsades de pointes can degenerate into ventricular fibrillation, which will lead to sudden death in the absence of medical intervention.

It is well established that cocaine has cardiotoxic effects. Acute doses of cocaine suppress myocardial contractility, reduce coronary caliber (vasospasm) thereby reducing coronary blood flow, induce electrical abnormalities in the heart, and increase heart rate and blood pressure. These effects will decrease myocardial oxygen supply in the face of increasing demands due to rise in heart rate and blood pressure thereby inducing myocardial ischemia and/or infarction.

The presence of these drugs is therefore a significant finding especially in a death that is attributed to a sudden cardiac event. Nonetheless, it is our opinion that the primary and the underlying cause of death is ischemic heart disease due to coronary artery pathology. Drugs however, particularly, methadone and cocaine, are other significant conditions contributing to death but not resulting in the underlying cause.

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CAUSE OF DEATH:

1. SUDDEN CARDIAC DEATH ASSOCIATED WITH CORONARY ARTERY DISEASE
2. ACUTE MIXED DRUG INGESTION

MANNER OF DEATH: NATURAL

Signature

Shiping Bao, MD
Deputy Medical Examiner

Signature

6-10-2011

Nizam Peerwani, MD
Chief Medical Examiner

A complete autopsy is carried out at the Tarrant County Medical Examiner's Morgue.

GROSS ANATOMIC DESCRIPTION

I. CLOTHING AND PERSONAL EFFECTS: The body is presented to the Morgue wrapped in a white sheet and clad in white shorts

II. THERAPEUTIC INTERVENTION: None

III. EXTERNAL BODY DESCRIPTION: The body is that of a normally developed adult white male appearing the stated age of 32 years with a body length of 72 inches and body weight of 176.6 pounds. The body presents medium build with average nutrition, normal hydration, and good preservation. Rigor mortis is complete, and lividity is well-developed on the posterior surfaces of the body and is fixed. No rash or petechia is identified on skin. The body is cold to touch post refrigeration. The head is covered by medium length, brown hair. The face is shaven. There is average body hair of adult male pattern distribution. The eyes are closed with clear bulbar and palpebral conjunctivae. The irides are blue with white sclerae. There are no cataracts or arcus present. Pupils are equal at 5 mm. The orbits appear normal. The nasal cavities are unremarkable with intact septum. The oral cavity presents natural teeth with good oral hygiene and contains white foam purge. The ears are unremarkable with no hemorrhage in the external auditory canal. The neck is rigid due to postmortem changes, and there are no palpable masses. The chest is symmetrical. The abdomen is scaphoid.

The upper and lower extremities are equal and symmetrical presenting cyanotic nail beds without clubbing or edema. A ½" long scratch is localized on left wrist. A needle mark is localized on back of left hand. There are no fractures, injuries, deformities, or amputations present. External genitalia present descended testicles and an unremarkable penis. The back reveals dependent lividity with contact pallor. The buttocks are atraumatic, and the anus is intact. The integument is of normal color.

SCARS: An 8.0" long vertical surgical scar is localized on middle abdomen.

TATOOS: None

IV. INTERNAL EXAMINATION

1. INTEGUMENT: A Y-shaped thoracoabdominal incision is made and the organs are examined in-situ and eviscerated in the usual fashion. The subcutaneous fat is normally distributed, moist and bright yellow. The musculature of the chest and abdominal area is of normal color and texture.

2. SEROUS CAVITIES: The chest wall is intact without rib, sternal, or clavicular fractures. The pleura and peritoneum are congested, smooth glistening and essentially dry, devoid of adhesions or effusion. There is no scoliosis, kyphosis, or lordosis present. The left and right diaphragms are in their normal location and appear grossly unremarkable. The pericardial sac is intact, smooth, glistening and contains normal amounts of serous fluid.

3. CARDIOVASCULAR SYSTEM: The heart is slightly enlarged and weighs 423 grams and there is no evidence of chamber hypertrophy or dilatation. The left ventricular wall is 1.5 cm and the right 0.5 cm. The cardiac valves appear unremarkable with normal circumference. The coronary ostia are in the normal anatomical location leading into coronary arteries with atherosclerosis and 70% to 80% stenosis in middle portion of left anterior descending coronary artery. Other major coronary arteries are widely patent. Right dominant circulation is present. The endocardial surface is smooth without thrombi or inflammation. Sectioning of the myocardium presents no gross evidence of ischemic changes either of recent or remote origin. The aortic arch along with the great vessels appears grossly unremarkable.

4. PULMONARY SYSTEM: The neck presents an intact hyoid bone as well as thyroid and cricoid cartilages. The larynx is comprised of unremarkable vocal cords and folds, appearing widely patent without foreign material, and is lined by smooth, glistening membrane. The epiglottis is a characteristic plate-like structure without edema, trauma, or pathological lesions. Both the musculature and the vasculature of the anterior neck are unremarkable. The trachea and spine are in the midline, presenting no traumatic injuries or pathological lesions.

The lungs appear hyperinflated and together weigh 1358 grams. Both the lungs appear severely congested and edematous. There are no gross pneumonic lesions or abnormal masses identified. The tracheobronchial tree contains white foaming liquid. The pulmonary arterial system is intact and grossly unremarkable. The pleural surfaces are pink and smooth with focal mild anthracosis.

5. GASTROINTESTINAL SYSTEM: The esophagus is intact with normal gastroesophageal junctions and without erosions or varices. The stomach is also normal without gastritis or ulcers, and contains food particles. Loops of small and large bowel appear grossly unremarkable. The appendix is unremarkable.

The liver is enlarged and weighs 2256 grams presenting a brown smooth glistening surface. Focal patchy yellow discoloration due to mild fatty metamorphosis is present. On sectioning the hepatic parenchyma is yellow-brown, homogeneous and congested. The gallbladder is unremarkable containing approximately 10 mL of greenish bile. There is no cholecystitis or lithiasis. The biliary tree is patent. The pancreas weighs 166 grams and presents a lobulated yellow cut surface without acute or chronic pancreatitis.

6. GENITOURINARY SYSTEM: The left kidney weighs 174 grams, and the right 160 grams. On sectioning the cortex presents a normal thickness above the medulla. The renal columns of Bertin extend between the well-demarcated pyramids and appear unremarkable. The medulla presents normal renal pyramids with unremarkable papillae. The pelvis is of normal size and lined by gray glistening mucosa. There are no calculi. Renal arteries and veins are normal. The ureters are of normal caliber lying in their course within the retroperitoneum and draining into an unremarkable urinary bladder containing approximately 100 mL of clear urine.

External genitalia are unremarkable without hypospadia, epispadias, or phimosis. There are no infectious lesions or tumors noted. The descended testicles are of normal size encased within an intact and unremarkable scrotal sac and on palpation abnormal masses or hernias are not present. The prostate is of normal size and shape and sectioning presents normal two lateral lobes with thin median lobe forming the floor of the unremarkable urethra. There are no gross pathological lesions.

7. HEMATOPOIETIC SYSTEM: The spleen weighs 253 grams, presenting a gray-pink intact capsule and a dark red parenchyma. There is no lymphadenopathy. The thymus gland is involuted.

8. ENDOCRINE SYSTEM: Thyroid gland is of normal size and shape, presenting two well-defined lobes with connecting isthmus and a beefy brown cut-surface. There are no goitrous changes or adenomas present. The adrenal glands are of normal size and shape and sectioning present no gross pathological lesions.

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9. CENTRAL NERVOUS SYSTEM: A scalp incision, craniotomy and evacuation of the brain are carried out in the usual fashion. The scalp is intact without contusions or lacerations. The calvarium is likewise intact without bony abnormalities or fractures.

The brain weighs 1664 grams presenting moderate congestion of the leptomeninges. Overlying dura is intact and unremarkable. Cerebral hemispheres reveal a normal gyral pattern with severe global edema. The brainstem and cerebelli are normal in appearance with no evidence of cerebellar tonsillar notching. The Circle of Willis is patent, presenting no evidence of thrombosis or berry aneurysm. On coronal sectioning of the brain the ventricular system is symmetrical and contains clear cerebrospinal fluid. There are no space occupying lesions present. Spinal cord is not examined.

SPECIMENS AND EVIDENCE COLLECTED

1. 30 mL of aortic blood, 20 mL of femoral blood, 30 ml of urine, 30 ml of gastric content, and 5 mL of vitreous for further examination
2. Representative tissue sections in formalin for further examination
3. Blood card
4. Representative photographs
5. 7 cassettes of tissues
6. Swabs of brain

MICROSCOPY

Sections of the heart reveal normal interdigitating bundles of myocardium with essentially unremarkable interstitium. Individual myocardial fibers are long tapering and without hypertrophy. Well-preserved ovoid nuclei and unremarkable intercalated discs are present. In focal areas, the myocardial fibers appear to be fragmented without accompanying inflammation or fibrosis. Myonecrosis is not identified. Contraction bands are occasionally seen. Mild small vessel disease is noted. Section of middle portion of left anterior descending coronary artery reveals atherosclerosis with 70% to 80% stenosis.

Sections of the lung reveal prominent vascular congestion with mild edema. In focal areas, the alveoli appear collapsed. Infrequent lower respiratory tract histiocytes are noted within the alveolar spaces. Inflammation or fibrosis is absent. Bronchi and bronchioles appear unremarkable. Vascular channels likewise appear unremarkable. Pleural lining is intact with minimal anthracosis, focal lymphocytic infiltrate and associated focal patchy fibrosis.

Section of the liver reveals prominent passive congestion with dilated sinusoids. Portal triads appear unremarkable with intact limiting plates. The overall hepatic architecture is preserved and there is no evidence of hepatocellular necrosis or degeneration. Mild fatty metamorphosis is noted of the microvesicular type.

One section of the pancreas reveals autolysis. There is no micropathological lesions present.

Sections of the left and right kidney reveal an intact renal architecture with unremarkable glomeruli, tubular structures and vasculature. Prominent vascular congestion is however noted.

Section of the spleen reveals prominent congestion with enlarged red pulp. The sinuses are however intact and lined by unremarkable elongated flat endothelial cells. Small aggregates of mature lymphocytes and mononuclear cells are present. The white pulp is well-represented with prominent germinal centers. There are no micropathological lesions noted.

One section of the thyroid gland presents a normal lobular architecture with each lobule composed of unremarkable follicles of variable size, filled with pink staining colloid material and lined by lower cuboidal epithelial cells. The interfollicular stroma is sparse and C-cells are difficult to identify. Solid cells nests are not present and there is no evidence of lymphocytic infiltrate.

Sections of the left and right adrenal glands reveal no micropathological lesions noted.

Sections of cerebral cortex, the brainstem and cerebellum are examined. These reveal prominent congestion as well as variable degree of cerebral edema. There is no evidence of neuronal dropout, necrosis or gliosis.

Completed: June 10, 2011
NP/

Toxicology Test Results

Office of Chief Medical Examiner
Toxicology Laboratory Service
200 Feliks Gwozdz Place
Fort Worth, Texas 76104
Name: **Philip Andrew Irons**
Case Number: [redacted]
Toxicology Work Number: [redacted]

Nizam Peerwani, M.D., DABFP
Chief Medical Examiner
Angela Springfield, PH.D., DABFT
Chief Toxicologist
Priority: **0**
Service Request Number: **001**

Specimen	Drug	Result	Drug Amount	Performed By
AORTA BLOOD	ETHANOL AxSYM	NEGATIVE		B. LANDRY
URINE	CANNABINOIDS AxSYM *	POSITIVE		B. LANDRY
URINE	COCAINE AxSYM	POSITIVE		B. LANDRY
URINE	OPIATES AxSYM	NEGATIVE		B. LANDRY
URINE	AMPHETAMINES AxSYM	NEGATIVE		B. LANDRY
URINE	BENZODIAZEPINES AxSYM	POSITIVE		B. LANDRY
AORTA BLOOD	ACID	NEGATIVE		C. LEWIS
URINE	NAPROXEN	POSITIVE		C. LEWIS
GASTRIC	ACID	NEGATIVE		C. LEWIS
FEMORAL BLOOD	ALPRAZOLAM	POSITIVE	52 NG/ML	C. LEWIS
URINE	ALPRAZOLAM	POSITIVE		C. LEWIS
FEMORAL BLOOD	AMPHETAMINE	NEGATIVE		C. LEWIS
URINE	AMPHETAMINE	POSITIVE		C. LEWIS
FEMORAL BLOOD	METHAMPHETAMINE	NEGATIVE		C. LEWIS
URINE	METHAMPHETAMINE	POSITIVE		C. LEWIS
FEMORAL BLOOD	COCAINE	NEGATIVE		C. LEWIS
URINE	COCAINE	POSITIVE		C. LEWIS
FEMORAL BLOOD	BENZOYLECGONINE	POSITIVE	50 NG/ML	C. LEWIS
URINE	BENZOYLECGONINE	POSITIVE		C. LEWIS
FEMORAL BLOOD	COCAETHYLENE	NEGATIVE		C. LEWIS
URINE	COCAETHYLENE	POSITIVE		C. LEWIS
FEMORAL BLOOD	METHADONE	POSITIVE	160 NG/ML	S. BOTCH
URINE	METHADONE	POSITIVE		S. BOTCH
FEMORAL BLOOD	EDDP	POSITIVE	16 NG/ML	S. BOTCH
URINE	EDDP	POSITIVE		S. BOTCH

*THIS SCREEN IS NOT CONFIRMED

Report Prepared By: Barb Landry

Approved By: [signature]

Approved Date: 11/5/10

OFFICE OF CHIEF MEDICAL EXAMINER
AND FORENSIC LABORATORIES
TARRANT COUNTY MEDICAL EXAMINER'S DISTRICT

NIZAM PEERWANI, M.D., DABFP
CHIEF MEDICAL EXAMINER

[redacted]

SUSAN R. HOWE, PH.D., DABFT
INTERIM CHIEF TOXICOLOGIST

FORENSIC CHEMISTRY LABORATORY

NAME: Irons, Philip Andrew
CASE NUMBER: [redacted]
OFFENSE DATE: 11-02-10
EVIDENCE REC'D: 11-04-10

AGENCY: Dallas/Fort Worth Airport PD
SERVICE NUMBER: [redacted]
REQUESTED BY: Ofc. Herring
ANALYST: John Harris

EVIDENCE RECEIVED:

Tape sealed manila envelope containing

16. plastic prescription bottle holding five blue tablets marked 'GG 258'.
17. plastic prescription bottle holding
    A. twenty six white tablets marked '6469 / V'.
    B. eleven white tablets marked 'M / 57 71' and a visually similar white tablet fragment.
18. white plastic nasal spray bottle with factory label 'Afrin No Drip 12 Hour Pump Mist' containing white liquid.

RESULTS:

16. 0.65 gram of which 0.13 gram (one tablet) was analyzed and found to contain Alprazolam.
17A. 3.33 grams of which 0.12 gram (one tablet) was analyzed and found to contain Zolpidem.
17B. 2.82 grams of which 1.24 grams (five tablets) were analyzed and found to contain Methadone.
18. No controlled substances or dangerous drugs were detected in the liquid.

Analyst: John Harris

Administrative Review: ~~Susan R. Howe / Joyce Ho~~ Ronald L. Singer **Date:** 11/08/10

10|3091

Centers for Disease Control and Prevention

National Center for Emerging and Zoonotic Infectious Diseases (NCEZID)

Division of High-Consequence Pathogens & Pathology (DHCPP)

Infectious Diseases Pathology Branch (IDPB)

Pathology Report

IDPB Number: [redacted]
Receipt Date: 11/12/2010
Sign-out Date: 12/17/2010

Patient Name: **Irons, Andy**
Submitter/Outside #(s): [redacted]
Case Origin: TX, USA
Specimen(s) Received: 8 unstained slides. 4 blocks rec'd 11/17/10.
Submitted By: Medical Transcriptionist
Carol A Lawson,
Tarrant County
Office of Chief Medical Examiner
[redacted]
Fort Worth, TX 76104 USA
[redacted]

DASH and other CDC specimen numbers

DASH #	ASTRO #	BT #	Field #	BRRAT #	Outside #'s	Specimen:
[redacted]						

Diagnosis:

Liver, kidney, spleen, lung
-- no immunohistochemical or molecular evidence of dengue virus
-- no immunohistochemical evidence of Leptospira spp.

Lung without molecular evidence of influenza A

Comments:

Immunohistochemical (IHC) tests using an indirect immunoalkaline phosphatase technique were performed. The primary antibodies used in the tests included a mixture of 16 reference rabbit polyclonal anti-leptospira antisera (1) and a mouse polyclonal anti-dengue antiserum (2). Appropriate positive and negative controls were run in parallel. No immunohistochemical evidence of dengue virus infection or Leptospira spp. infection was observed.

RNA was extracted from formalin-fixed, paraffin-embedded sections of tissue and tested by using a broad-range, flavivirus-group specific RT-PCR assay, targeting a segment of the NS5 gene. No amplicon was obtained from the assay. House-keeping gene was amplified in all the samples ensuring the presence of amplifiable host nucleic acids.

RNA was extracted from formalin-fixed, paraffin-embedded portions of respiratory tissue and used as template for the CDC Real-time RT-PCR Protocol for Detection and Characterization of novel influenza A H1N1. This assay includes a panel of oligonucleotide primers and dual-labeled hydrolysis (Taqman) probes used in real-time RT-PCR assays for the in vitro qualitative detection and characterization of influenza viruses in respiratory specimens and viral cultures. The influenza A primer and probe set is designed for universal detection of type A influenza viruses. The novel influenza A H1N1 primer and probe set is designed for detection of the novel influenza A H1N1 virus. The samples were negative for influenza A.

Correlation with clinical history and other laboratory assays is recommended.

1. Zaki Zaki SR, Shieh WJ, et al. Lancet 1996, 347:535-536.
2. This antibody is known to cross-react with all four types of Dengue virus antigens.

Microscopic Examination:

The lungs are congested with mixed inflammation within the submucosa of a single large bronchus. The kidney, liver, and spleen are congested. The appendix shows no significant histopathologic abnormality.

Results:

Specimen	Test	Result
IHC		
Spleen, appendix	Dengue virus and other flaviviruses	Negative
Spleen, appendix	Leptospira spp.	Negative
Kidney	Dengue virus and other flaviviruses	Negative
Kidney	Leptospira spp.	Negative
Liver	Dengue virus and other flaviviruses	Negative
Liver	Leptospira spp.	Negative
Lung	Dengue virus and other flaviviruses	Negative
PCR		
Spleen, appendix	Flavivirus RT-PCR / NS5 / 250 bp	Negative
Kidney	Flavivirus RT-PCR / NS5 / 250 bp	Negative
Liver	Flavivirus RT-PCR / NS5 / 250 bp	Negative
Lung	Flavivirus RT-PCR / NS5 / 250 bp	Negative
Lung	2009 Influenza A H1N1 Real-time RT-PCR	Negative

CDC, IDPB, 1600 Clifton Road NE, MS: G32, Atlanta, GA 30333 Tel: 404-639-3132 Fax: 404-639-3043 Email: Pathology@cdc.gov