



FOR PUBLIC RELEASE: Coroner Judgement of Inquiry and Inquest Inquisition and Recommendations

Department of Justice, Legal Services
Yukon Coroners Service
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Yukon Coroners Service: Judgement of Inquiry into the death of: Cynthia Blackjack

Coroner Investigative File No.: 45202013045

Name: Cynthia Blackjack Date of Birth: 1982/02/10 Date of Death: 2013/11/07
YYYY/MM/DD YYYY/MM/DD

Address: Carmacks, Yukon
Street Address Province/Territory Postal Code

Ethnic Origin: First Nation Location of Death: Whitehorse International Airport

Cause of Death

Multi-organ Failure due to Hyperacute Liver Failure of Unknown Cause

Manner of Death

Natural

Autopsy Findings

An autopsy of Ms. Blackjack was performed on November 12, 2013 at Vancouver General Hospital. The autopsy revealed that there was mild swelling in association with very severe tooth decay. Due to the potential that the dental decay may have been a contributor to death, a specialized dental consult was requested by Yukon Chief Coroner. The Bureau of Legal Dentistry performed a post mortem dental examination of Ms. Blackjack on November 14, 2013 which included dental charting, photographs and digital radiographs (x-rays). A Forensic Dentist from the Bureau of Legal Dentistry located at the University of British Columbia determined that there were no evident intra oral origins that would have directly caused the death of Ms. Blackjack. However, the examination did reveal that Ms. Blackjack had ten abscessed teeth and rampant generalized dental decay.

The pathologist at Vancouver General Hospital also noted that the lungs of Ms. Blackjack were edematous (fluid in the airspace of the lungs) and congested and that Ms. Blackjack had an evolving acute respiratory distress syndrome.

The liver of Ms. Blackjack was grossly pale and fatty. Microscopically, there was marked stenosis and extensive centrilobular necrosis. Ms. Blackjacks' kidneys showed multiple old cortical infarcts (interruption of blood to the kidneys) and a pale cortex.

Toxicological Findings

Post mortem toxicology testing revealed blood morphine at the low range which is considered therapeutic in living patients. There was an estimate of sub therapeutic levels of metoclopramide (treats vomiting), diphenhydramine (used to treat nausea, vomiting, and dizziness caused by motion sickness) and ibuprofen. There was use of cannabis and a prior use of ranitidine (antacid).

Circumstances of Death

SEE ATTACHED PAGE

Significant Factors/Conclusions

SEE ATTACHED PAGE

Recommendations

SEE ATTACHED PAGE

A. Macdonald

Signature, Chief Coroner

Yukon

Province/Territory

Aug. 5/14

Date

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Inquisition and Recommendations**

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Yukon Coroners Service: Judgement of Inquiry into the death of: <u>Cynthia Blackjack</u>		
Coroner Investigative File No.: <u>45202013045</u>		
Name: <u>Cynthia Blackjack</u>	Date of Birth: <u>1982/02/10</u>	Date of Death: <u>2013/11/07</u>
Address: <u>Carmacks, Yukon</u>		
Ethnic Origin: <u>First Nation</u>	Location of Death: <u>Whitehorse International Airport</u>	

Circumstances of Death:

Cynthia Blackjack called the Carmacks Health Centre on November 4th and 5th, 2013 complaining of dental pain.

She was assessed over the phone and asked to come in to the health centre on November 6th, 2013.

On November 6th, 2013 Ms. Blackjack was assessed at the health centre. She was noted to have dental decay and slight swelling of the left side of her face. A tentative diagnosis of alcohol-induced gastritis was made. She received 3L of saline, medication for nausea and 7mg of morphine for pain. Medical staff tried to find her a ride to Whitehorse General Hospital. At 11:05hrs, Ms. Blackjack was discharged from the Health Centre with instructions to return if she could not find a ride by 16:30hrs. At the time of discharge Ms. Blackjack denied nausea, headache, dizziness or abdominal pain.

On November 7, 2013 a family member called the Health Centre to say that Ms. Blackjack was disorientated and yelling out in pain. She was transported to the Health Centre for assessment. Blood was drawn for a variety of chemistries and cultures but only CBC, glucose and urine dipstick could be done in Carmacks. All other testing had to be done in Whitehorse. The results of these tests were not reported until Ms. Blackjack had already passed away.

November 7, 2013 at 11:15hrs a decision was made to medevac Ms. Blackjack to Whitehorse General Hospital. The medevac team consisted of two paramedics and one physician. The physician originally declined to accompany the medevac team. He later changed his mind.

The medevac team arrived in Carmacks at 13:35hrs. The medevac team brought O negative blood for transfusion. The transfusion to Ms. Blackjack was delayed because the wrong type of IV tubing had been brought to Carmacks.

The investigation revealed that in preparing for the medevac, IV tubing for the blood transfusion was obtained from a storage area in Whitehorse. An incorrect size of IV tubing had been inadvertently stocked together with the proper size for transfusion.

The patient was grunting, and there appears to have been some discussion between the medevac team members regarding whether or not Ms. Blackjack should be intubated for travel. Her O₂ saturations were in the mid-80's and she had grunting respirations. Ultimately, a decision was made to intubate Ms. Blackjack.

The intubation of Ms. Blackjack was delayed because there was a lack of pressure oxygen to attach to the ventilator at the health centre, and by failure of the first ventilator tubing circuit. This was replaced and the second set up system worked. There was no working suction apparatus in the health centre and a manual suction device had to be used in order to intubate.

At 16:45hrs Ms. Blackjack was ready to be moved to the aircraft and the medevac team with Ms. Blackjack was airborne by 17:11hrs. At this point, approximately six hours had passed since it was decided that Ms. Blackjack should be medevac'd to Whitehorse General Hospital from the community of Carmacks.

Ms. Blackjack could not be reliably ventilated using the mechanical ventilator on the aircraft because of multiple pressure alarms. She was ultimately reliably ventilated using a hand-held bag-valve device.

About ten minutes prior to landing in Whitehorse, Ms. Blackjack became bradycardic. Bradycardia occurs when someone's heart slows down. Bradycardia can be a serious problem if the heart doesn't pump enough oxygen-rich blood to the body. At 17:40hrs vital signs were lost and CPR was started.

The noise of the aircraft inhibited the ability of the medevac team to confirm proper ventilation so the endotracheal tube was removed and replaced with a supraglottic airway. The pathologist noted that the endotracheal tube was placed within the gullet. This tube misplacement was thought to be of unlikely significance as related to the cause of death.

Ms. Blackjack remained in asystole (no cardiac activity) and death was pronounced at 17:59hrs on November 7, 2013.

Significant Factors/Conclusions

Ms. Blackjack was well known to the medical staff in Carmacks. The medical triage, assessment, and management of Ms. Blackjack at the health centre in Carmacks on November 4, 5 and 6, 2013 was reasonable given the presenting symptoms, medical and social history.

Carmacks has a limited ability to perform laboratory investigations in the community. Blood work relevant to Ms. Blackjack's condition on November 6, 2013, would have been part of a more complete assessment. Sending Ms. Blackjack to Whitehorse once she was stabilized at the health centre in Carmacks would have provided a more complete assessment of her condition in accessing the laboratory at Whitehorse General Hospital.

Ms. Blackjack did not make her way to Whitehorse for a more complete assessment on November 6, 2013, contrary to the suggestion of medical staff.

Originally, the medevac physician was not going to travel on the medevac flight to Carmacks. Later, the physician decided to go to Carmacks.

The wrong tubing to administer the blood transfusion was not brought by the transport team, despite them bringing blood products for the patient.

Airway suction equipment at the health centre was not functioning and this delayed (and could have compromised) the airway management of Ms. Blackjack.

There appears to have been some hesitation in making a decision to intubate Ms. Blackjack despite her presentation of a decreased level of consciousness, signs of shock, a respiratory rate of 40-50, and poor oxygen saturation.

The cause of death was reported as being multi-organ failure secondary to hyperacute liver failure of unknown cause.

Given the clinical, toxicological and post mortem finding, the precise nature of the liver failure is unclear. The pathologist speculated that given the need for Ms. Blackjack to take ibuprofen and acetaminophen on a regular basis for her dental pain, these medications, in conjunction with chronic alcohol consumption, may have been the precipitants of her liver failure.

Recommendations:

Directed to Government of Yukon, Department of Health and Social Services:

- 1.) Point of care blood testing could be made available to enhance the level of care that can be rendered in rural locations and could include testing of CBC, INR, electrolytes, urea, creatinine, glucose, liver function tests, albumin, calcium, amylase, CK, and troponin.
- 2.) Health Centres must have functional suction devices available at all times.
- 3.) Medical and nursing staff who see patients with chronic alcohol consumption should be made aware of the increased potential for acetaminophen toxicity in these patients.
- 4.) A review should be conducted of the policies and procedures for transfer of patients from community health centres to Whitehorse. This review should include the indications for transfer (including the need for timely investigations such as laboratory analysis) not available in the community.

Directed to Government of Yukon, Department of Community Services:

- 5.) Medevac transport teams and persons re-stocking supply cabinets with medical tubing and other equipment should ensure that items are stocked properly, and that prior to departure a check should be made to ensure that the proper equipment is brought with the transport team.
- 6.) Transport teams (paramedics and physicians) should receive in-service education to ensure they are completely familiar with the equipment they carry, including blood transfusion tubing and oxygen connections for their ventilator.
- 7.) Monitoring equipment must be capable of assessing blood pressure, pulse and oxygen saturation at all times, despite aircraft noise and vibration.
- 8.) Transport physicians who are providing on-scene or on-line advice to paramedics need to be aware of guidelines for airway management in critically ill patients - including the need for airway protection in patients with decreased levels of consciousness, and controlled ventilation in shock states in which there is poor tissue perfusion and oxygenation.