**Forensic Toxicologist Case Study**

Case Study

*The body of a nude, approximately 20 year old, woman wrapped in a red blanket was found on the bank of the river, partly in the water. There was no identification. She was unknown to the police. The autopsy determined that she did not drown, had not been hit or shot or died from disease. The forensic toxicology laboratory identified 0.45 mg/L free morphine and 0.70 mg/L total morphine in her blood. Hair from her scalp was continuously positive for opiates along its entire length (20 cm) and both morphine and 6-monoacetylmorphine (a metabolite of heroin) were present in her hair.*

Procedure: You are the forensic toxicologist. With your team Questions that you must answer are:

1. Was she an addict? How long has she used drugs?
2. Did she die quickly or was this a slow death as a result of long term use?
3. Determine the cause of death, mechanism and manner of death.

**Below is information that you will need:**

Hair grows approximately 1.5 cm per month

A ratio of greater than 50% of free morphine compared to total morphine indicates a rapid death (within minutes)

Calculation: Free morphine x 100

Total morphine