PROJECT PROFILE

A sample of preserved blood, unpreserved blood and urine were delivered to Birmingham City Laboratories. HM Coroner had requested full drugs of abuse screen and alcohol analysis.

Initially tests were carried out to identify if any of the main classes of drugs of abuse were present (Amphetamines, Benzodiazepines, Cannabinoids, Cocaine, Methadone, Methamphetamines and Morphine/Opiates).

The cocaine, methadone and opiate tests yielded positive results and further confirmation and quantification was carried out to determine what was present in the blood.

The concentration of free morphine and metabolised morphine are both measured as the ratio can be useful in establishing possible fatal outcome of use.

Methadone is an opioid used most commonly to treat dependence on other opioid drugs such as heroin, codeine and morphine. The levels of methadone in a regular user overlap significantly with what would be a fatal concentration in a non-regular user and so care has to be taken when interpreting the results.

Morphine and methadone were quantified and the concentrations detected were consistent with concentrations that have resulted in fatalities especially as when used together morphine and methadone can have addictive side effects.

Cocaine was also detected together with its metabolites in the blood. Cocaine is unstable in body fluids and rapidly metabolised so the fact that cocaine itself was present implied the substance was taken recently before death.

The blood alcohol concentration was also indicative of the consumption of a large amount of alcohol prior to death. Cocaethylene, a toxic cocaine metabolite only formed when cocaine and alcohol are ingested together, was also identified.

It was concluded that this combination of drugs could have caused or contributed to the cause of death. The results and interpreted findings were submitted to the pathologist and HM Coroner to assist in their cause of death investigation.