



# Medical Review from the Toxicologists' Perspective

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## Aim

- Familiarisation with MRO process
- Highlight the importance of using MRO
  - Not an added luxury to the analysis
- Partnership with the Toxicologist



# Overview

- Drug testing results review process
- Role of Toxicologist
- Medical Review Process
- Role of Medical Review Officer
- Why Both?
- Working in Partnership
- Case Studies
- MRO Training.



## Result Review Process

Instrument data reviewed by  
Analyst

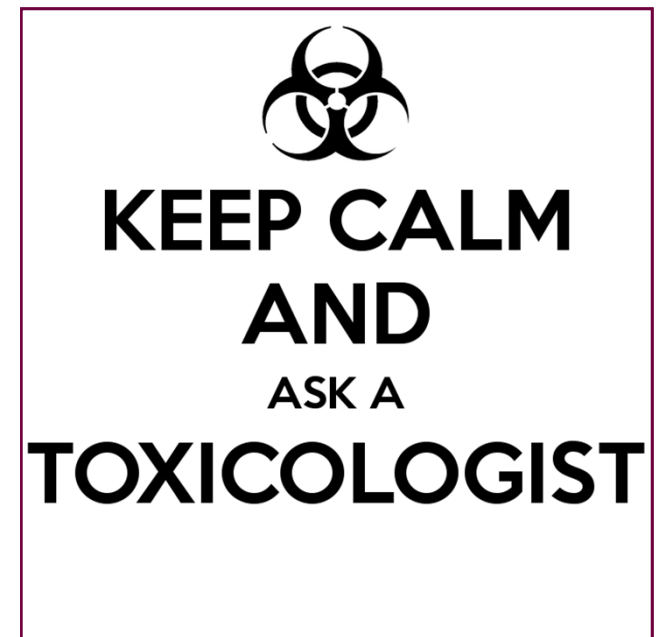
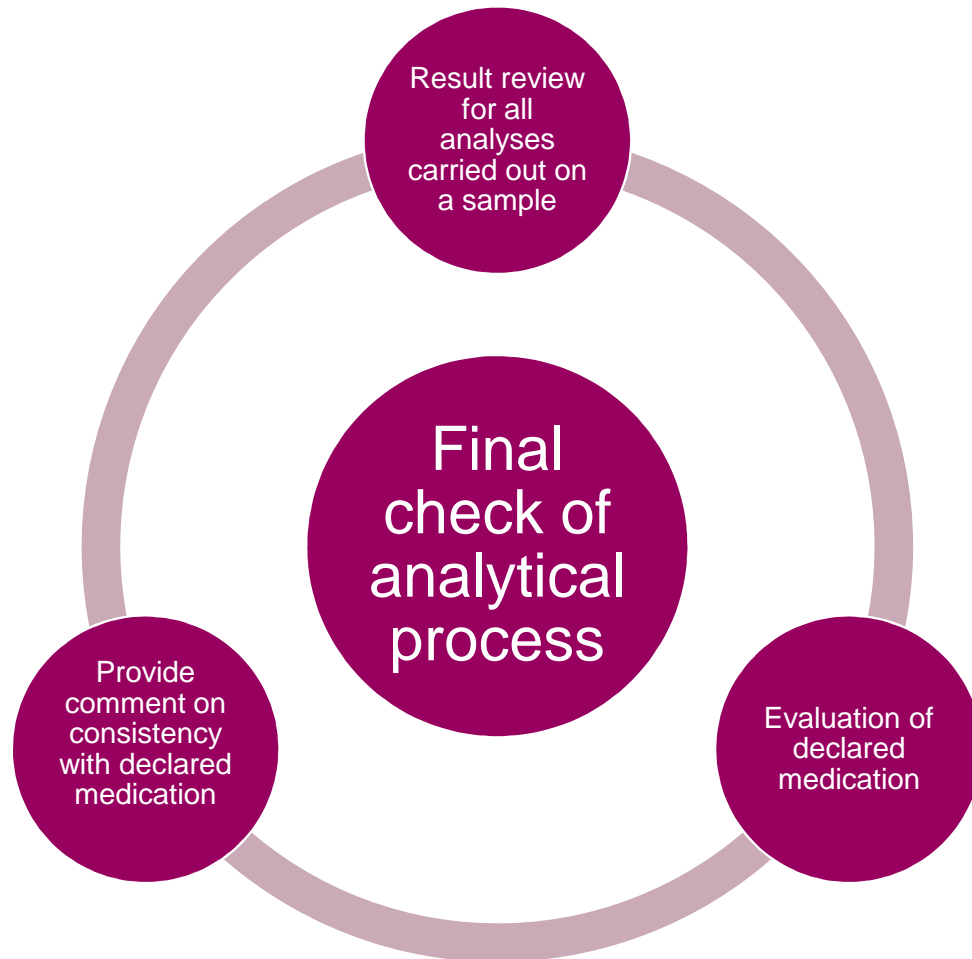
Senior Analyst conducts 2<sup>nd</sup>  
review

Toxicologists reviews all results  
and declared medication

MRO carries out Medical  
Review



## Toxicologists Role





## Medical Review

Receive result from laboratory

Consult with Toxicologist if  
required

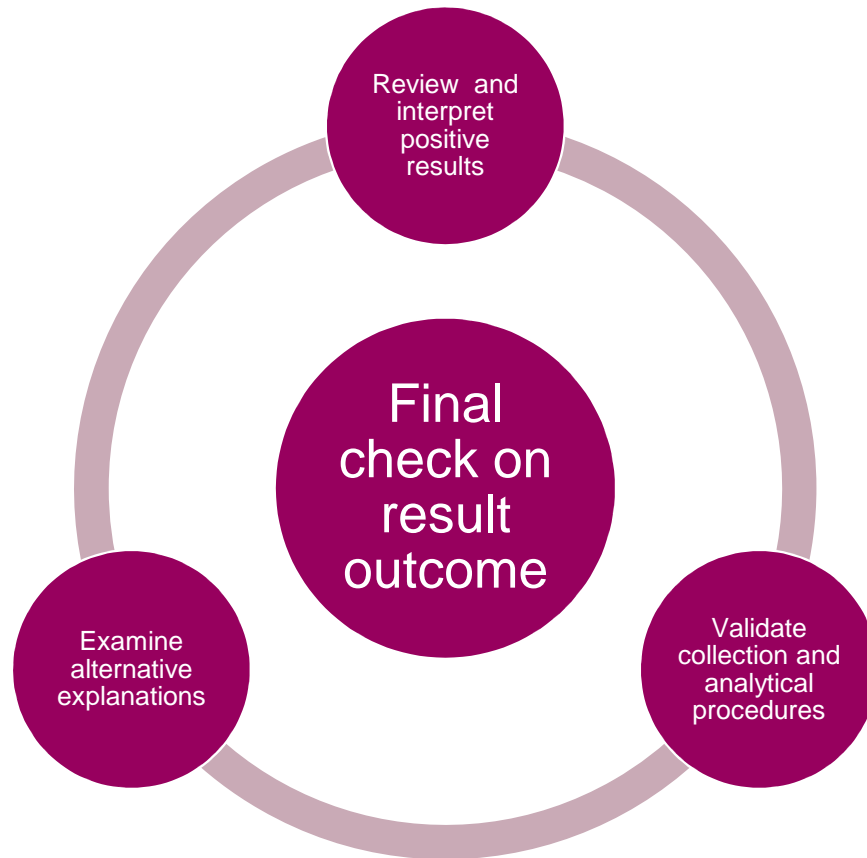
Contact donor to discuss result

Explore legitimate reasons for  
result

Complete Medical Review Report



# Medical Review Officer Role





## Toxicologist *and* MRO – why?

### Toxicologist

Expertise in  
interpreting  
results

Expertise in  
metabolism of  
illicit drugs and  
medication

### MRO

Contact with  
donor as  
medical-in-  
confidence

Experience as  
Occupational  
Physician





## Working in Partnership

Toxicologist provides  
initial interpretation

MRO and Toxicologist  
discuss any  
uncertainties

MRO contacts donor

MRO and Toxicologist  
discuss any further  
explanations





## Working in Partnership – Case Studies

- Donor 37year-old male
- POCT oral fluid screen cocaine non-negative
- Laboratory confirmation positive consistent with cocaine use
  - Detected cocaine, benzoylecgonine, anhydroecgonine methyl ester (AEME)
- MRO contacted donor
- Donor suggested contact with bank notes caused positive
- MRO discussed with Toxicologist
  - Toxicologists confirmed that suggested scenario is highly unlikely
  - Presence of AEME indicative of crack cocaine use
- MRO completed report



## Difficult decision?– Case Studies

- Certificate of Analysis - positive for Opiates
- Aspirin is declared medication
- The toxicologist confirms that result is not consistent with the aspirin declared, but is consistent with codeine based medication: Morphine 410 ng/mL, Codeine 2,400 ng/mL
- The donor says that he said had taken Solpadeine, not aspirin. He says he made the declaration in front of two people
- The Consent Statement on the Chain of Custody form is signed by the donor. The medication declared states “Aspirin this morning”
- The Collecting Officer report states that the collection was standard, and no-one else was present

## Case Studies – What not to do

**Analytical Result** – Morphine detected at 4,000 ng/mL  
papaverine and noscapine metabolites detected

**Declared Medication** - None

I hit my foot with a hammer a week ago and took 2 cocodamol every 4 hours for 1 day

Toxicologist confirms that the result is not consistent with the explanation

I was given medication in hospital after a previous car accident. My GP confirms that this was a 2mg daily dose of buprenorphine. This is what I took after the foot injury

Toxicologist confirms that the result is not consistent with the explanation

My uncle is an AIDS patient who provided me with some painkillers for my foot – 2 x morphine sulphate tablets

Toxicologist confirms that the result is not consistent with the explanation



## MRO Training

- No regulations governing Medical Review in the UK
- Some guidance from the Faculty of Occupational Medicine

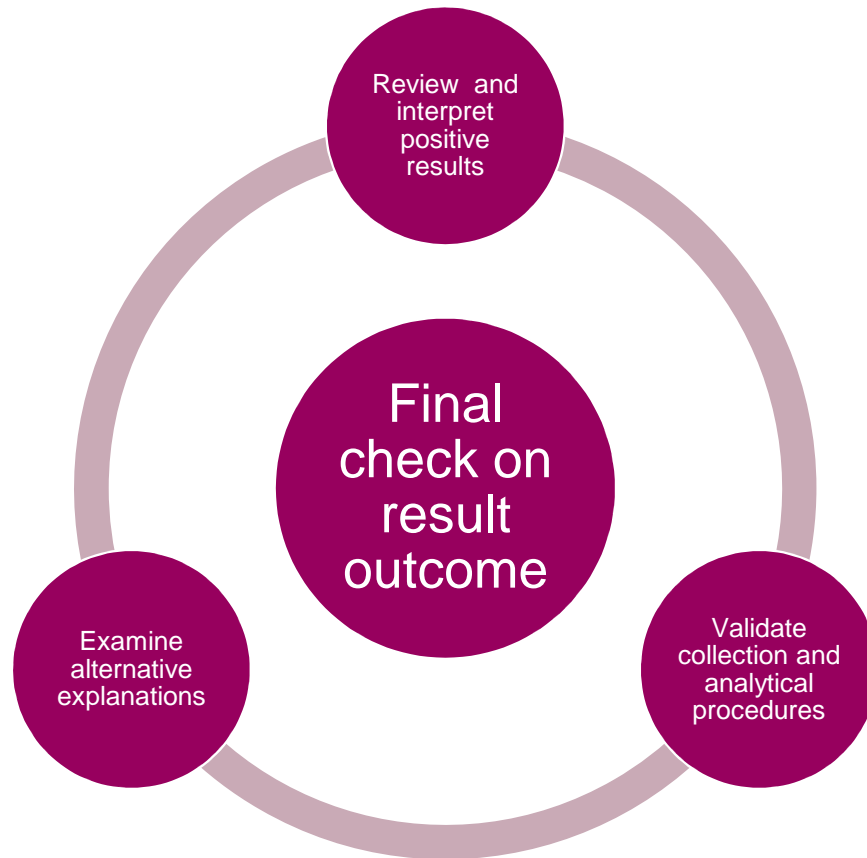
*No drug testing programme is complete without a medical review of employees who are found to have a positive result.*

Guidelines for Testing for Drugs of Abuse in the Workplace FOM 1996

- Good practice to undergo initial training and refresher training
- Training lead by a Toxicologist



# Medical Review Officer Role





# MRO Training

- The role of the MRO
  - Including balance between policing the policy and OH role
- Chain of custody and specimen collection
  - Understanding of C-o-C to whole process
  - Awareness of the sample collection procedures
  - Awareness of adulteration and substitution issues
  - MRO may need to conduct own familiarisation
- Analytical procedures and techniques
  - Basic understanding of analytical techniques
  - Differences between screening and confirmation
- Interpretation of Results
  - Particularly in relation to more unusual analytes
  - If in doubt.....Ask the Toxicologist



## Conclusion

- Medical Review works best as a partnership
- Dialogue between MRO and Toxicologist is key
- Provides protection to donor
  - Legitimate use of medication can be verified
- Ensures risk to employer and co-workers due to drug use is minimised
  - False claims by donor can quickly be discounted
- Toxicologist plays a key role in training the MRO





Any Questions

