



## Updated versions of the following documents are available in January 2019:

- Recommendations for the collection of forensic specimens from complainants and suspects
- Recommendations for the collection of forensic specimens from complainants and suspects – the evidence
- Forensic medical examination form
- Labelling forensic samples
- Recommended equipment for obtaining forensic samples from complainants and suspects

## Significant changes to the 'Recommendations for the collection of forensic specimens'

The FSSC meets every six months to review and revise the recommendations as appropriate.

This time there are a couple of significant changes to the recommendations. The number of penile swabs has been reduced to two. Swabbing the glans has been combined with swabbing the coronal sulcus and internal foreskin. This should be more time efficient and cost effective. Please take moist and dry swabs from:

1. Shaft and external foreskin (if present)
2. Coronal sulcus, internal foreskin (if present) and glans.

There is also a new section: Urine sample for DNA. This is only recommended in exceptional circumstances when the complainant refuses a forensic medical examination.

## Labelling Forensic Samples

It is essential that forensic specimens are appropriately labelled. The name of the person (examinee) from whom the specimen has been taken MUST be on the tube/bottle/container. In a sexual offence examination of a non-police referral, use the unique reference number in place of examinee's name. The tamper evident bag MUST also be clearly labelled as per the Labelling forensic samples document.

## Forensic Medical Examination Form

There have been a number of queries with regard to the Forensic Medical Examination Form. This is a four page form that was updated a couple of years ago and has been revised this

month (January 2019). It is essential that this form is completed by the examining HCP, exhibited, and given to the police officer with the samples. Many organisations have an in-house version of the form and the same applies. The form is essential for the forensic scientists to be able to interpret the results.

## Questions to the FSSC

The FSSC considers questions sent in by members of the FFLM and other interested parties. Here are the questions with answers from the last six months.

### 1. Is it necessary for a blood sample for toxicology to be taken from a patient prior to a blood transfusion?

Ideally it is best for a blood sample for toxicology to be taken prior to a blood transfusion as there is a dilution effect for drugs. However this is not always possible and even if a blood transfusion/other fluids have been given a blood sample could still be useful and so should be taken. As with all cases where drug facilitated crime is suspected a urine sample should be taken by police as soon as there is the suspicion of involvement of drug and/or alcohol in the incident. HCPs should advise the police when requested to take blood that the police should take urine immediately.

### 2. Is there a problem with HCPs carrying a spare RTA kit in the boot of their cars?

Changes in temperature would affect the glue line on the tamper-evident bags, however the temperature changes would need to be extreme in order to shorten the lifespan of the bag.

### 3. What is the best practice for skin control swabs in complainants of sexual assault if no skin swabs are required i.e. if only vaginal swabs are required, is a background skin control still required?

The committee advised that if no skin swabs were required, a background skin swab would not be needed.

### 4. Is there guidance around the length of time that forensic samples taken from complainants or suspects should be kept prior to testing?

Samples for toxicology can be kept refrigerated if submitting to the forensic laboratory within three months of collection (freezing is recommended if storing for more than three months), however it is better to submit samples for testing as soon as possible.

Body fluid samples could be kept indefinitely if appropriately stored. Guidance is available from the relevant forensic science provider.



**5. How may exhibits be affected if the storage freezer breaks down or is accidentally switched off for a period of time? How may exhibits be affected if they are defrosted and refrozen once, or more than once, over the period that the exhibits are stored? How should any interruption in the freezing process be recorded? Are there any implications for the legal process if the storage of exhibits is interrupted?**

**Any interruption to the correct/normal storage of frozen exhibits needs to be recorded in as much detail as possible (see below).** The items would still be assessed by the forensic scientist, almost regardless of the interruption. A decision would then be made about testing. In most cases the testing would go ahead, but the information about the interruption, and the visible state of the items/swabs would inform the evaluation of the findings.

**Toxicology samples**

In relation to toxicology samples. Some drugs are still stable at room temperature but alcohol and some drugs do degrade over time and this degradation will be quicker at room temperature. Alcohol can also be produced in samples – if certain micro-organisms are present.

There are many variables such as whether the degradation is from microbial action or simply heat, how warm the samples get, the length of time that the samples are above recommended freezer (or refrigerated) temperature, the concentration of alcohol and drugs in the sample and whether or not the degradation products would also be detected by the analysis. For most drugs, it is unlikely that a high concentration would decrease to undetectable levels but, in a case with long time intervals where there may be drugs around the detection limit, some drugs could degrade to undetectable levels.

The toxicologist would generally continue with the analysis but add caveats to the results depending on the drug suspected and the circumstances of the case. Ideally, information regarding how warm the freezer (or fridge) got and for how long would be required. Fridge/freezer monitoring should be in place and regularly checked.

Samples that are to be submitted for toxicology analysis within a few weeks can generally be stored refrigerated or frozen so, if a freezer breaks down and the temperature does not exceed refrigerated temperatures before it is noticed, then this should not be an issue.

**Biological samples for DNA**

The time taken from ambient storage to freezing of swabs is possibly less critical than the amount of time a sample is frozen or thawed but either way minimising extremes of temperature change is good practice.

**Guidance on fridge/freezer monitoring**

Monitoring the temperature of the fridge and/or freezer with a daily check recorded is essential for a complete record of temperature at which the sample has been stored including any temperature deviations. The actual acceptable temperature range appears to be governed by what is specified by the equipment manufacturer e.g. fridges operate at 2° to 8° C and freezers operate at approximately -20 °C (must be below -10 °C to maintain freezing).

Best practice is to check the freezer temperatures daily and record the reading. Action is required if the temperature deviates up or down by 5 °C. Freezers should be alarmed and there should be a backup generator. It is good practice for the equipment used for the temperature monitoring to be calibrated and its accuracy known.

It is possible where freezers have broken down or have been accidentally switched off for up to 48 hours that there may still be positive body fluid findings and DNA results.

The storage of toxicology samples is non critical i.e. it just needs to be at 'refrigerated' or 'frozen' temperatures but does not need to be at a specific temperature (as it may need to be for certain diagnostic reagents, some medications, certain foods etc).

**Other documents of interest**

- The Royal Society has published *A primer for the courts on Forensic DNA Analysis*. HCPs may find this very useful.
- The Forensic Science Regulator's latest newsletter was published in November 2018. *FSR Newsletter, November 2018*