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**SOP number: OCDEM RA 14**

Effective date: 1<sup>st</sup> Feb 2016  
Updated: 1<sup>st</sup> Feb 2016  
Version: 2.0  
Supersedes: 1.1

## **Risks associated with the Storage and Use of Human Blood, Body Fluids and Tissue**

### **Introduction**

All Groups within OCDEM are using or storing human blood, body fluid or tissue samples. Many of these samples are classified as 'Relevant Material' as defined by the Human Tissue Authority.

### **Persons at Risk**

- Laboratory Staff, nursing and medical staff, students and visitors
- Domestic staff
- Maintenance engineers

### **Potential Hazards**

- Health hazards
- Temperature ( when using freezers)
- Chemical hazards when processing samples

### **Risks to Samples**

- Freezer failure
- Temperature logging
- Traceability
- Consent

### **Health Hazards**

All samples within OCDEM are from a healthy population with no known infectious diseases, therefore the risk of samples containing a pathogen is very low; all samples should still be treated as if they contain infectious agents.

In the event of a sample spillage [OCDEM SOP S4: Disinfection in Containment Level 2 Areas](#) must be followed.

If an aerosol is likely to be generated during use, a microbiological safety cabinet (MSC) must be used for handling the sample.

## Temperature

There is a risk of cold burns, especially when samples are stored in a -80°C freezer or in liquid nitrogen. Appropriate gloves for the temperature must be made available and be worn.

## Chemical Hazards

Each procedure used in the laboratory must have a risk assessment that takes into consideration the sample, any chemicals being used, equipment and the environment.

## Control Measures

- [OCDEM SOP S1: Laboratory Rules for the safe handling of Blood, Body Fluids and other Human Tissues: Containment Level 2](#) must be adhered to at all times.
- Cryo-gloves must be available for use when storing samples in the freezers; in addition cryo aprons and face visors must be available for sample storage into, or retrieval from, liquid nitrogen.
- Domestic staff and maintenance engineers must attend an induction to the hazards associated with working in a Containment Level 2 laboratory.
- A MSC must be available for use.
- Aerosol lids must be used with the rotor buckets when centrifuging samples, and the aerosols allowed to settle before opening the centrifuge or any tubes.
- RISK assessments and Standard Operating Procedures are required for every procedure.

## Freezer failure

In the event of a freezer failure [OCDEM SOP I 4: Power failure and freezers within OCDEM](#) gives details of the steps to take to maintain the condition of samples.

## Temperature logging

To reduce to risk of loss of sample viability all freezers containing relevant material must be alarmed with a system that rings out to several contacts, preferably with a system that provides information on the problem, for example: power failure, temperature reading. Where possible a temperature logging system should be introduced; if this is not possible the temperature of the freezers must be logged daily on a manual basis and the records retained for a minimum of two years.

## Traceability

There is a low risk that samples may be removed from a storage location without a record being kept of its withdrawal, usage, disposal or replacement. It is essential that an audit record must be kept in a secure location of all relevant material, [see OCDEM SOP I 9: Sample logging, storage and tracking for the purposes of research](#) for more information. All users of relevant material must be trained to use audit software and the importance of keeping the audit trail up to date must be stressed.

## Consent

Consent must be in place for the use of any sample that has been collected since 1<sup>st</sup> October 2006, samples collected previous to this date are classed as 'Existing Holdings'. See [HTA Code of Practice 1: Consent](#) for further information.

If consent has expired the participant must be contacted to renew the consent before the sample can be used..

**Update history**

<b>Version</b>	<b>Date</b>	<b>Reason for update</b>	<b>Updated/reviewed by :</b>	<b>Date next review due</b>
1	Jan 2012	New Risk assessment	SMH	Jan 2014
1.1	12/01/2014	New department header added.	SMH	Jan 2016
2.0	01/02/2016	New HoD updated, changes to layout and text of RA14. New section on 'risk to samples' added..	SMH	Feb 2018