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Laboratory Rules for the Safe Handling of Blood, Body Fluids and other Human Tissues: Containment Level 2.

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1 Introduction

OCDEM Laboratories work to Containment Level 2 for safe handling of human samples donated by subjects from a normal healthy population, where there is a relatively low probability that pathogens of hazard group 2, 3 or 4 are present. However, since blood (including animal specimens) is a particularly good medium for supporting the growth of a wide range of pathogens, all blood samples should be regarded as potentially infectious. Contamination with blood due to poor working practices may therefore lead to the spread of potentially infective material. Stringent precautions should always be adopted when blood and tissue is being handled.

In the event that the presence of a hazard group 3 pathogen is suspected in any sample upon receipt, then this sample must be regarded as 'high risk' and the safety officer notified immediately. The sample must be placed in a class II microbiological safety cabinet until the Departmental Safety Officer (DSO) has obtained advice from the University Biological Safety Officer or Deputy. High risk samples may only be handled at containment level 3 and there are no such facilities in OCDEM.

Appendix 1 lists a definition for each hazard group.

2 Authorisation and access to the laboratory

2.1 Only authorised persons may enter and/or work in the laboratories.

3 Young persons in the laboratory

3.1 If persons under 18 years of age propose to visit or work in the laboratories, refer to University Policy Statement [S1/13 'The health and safety of young people and children'](#).

3.2 The supervisor or DSO must ensure that all relevant risk assessments are in place before allowing young persons to visit or work in the laboratories; risk assessments must take into account the young person's lack of knowledge and experience.

3.3 The highest level of supervision should be undertaken for young persons – see Appendix 1 of S0: Local Safety Rules: Clinical and Laboratory work.

3.4 Final, formal approval should be sought from the Executive Responsible for Safety.

4 Visiting engineers and contractors

4.1 Visiting engineers and contractors must report to either a lab manager or a responsible person nominated by the lab manager. All new engineers and contractors must be given a brief induction to the potential hazards within containment level 2 laboratories and be given a copy of OCDEM SOP I1: Information for engineers and contractors working in containment laboratories and supervised radiation areas; if the engineer/contractor will not be supervised during their visit, he/she must be given a permit to work.

5 Training

- 5.1 Staff, students or visitors can only handle samples after they have been assessed by their supervisor. The supervisor will decide upon the level of safety training and supervision required within the laboratory. When the appropriate level of competency has been attained the trainee's records will be signed off by the supervisor. All workers in the laboratory must attend one of the Biological Safety Training lectures run by the University Safety Office. These are held every term. These safety training lectures are an essential part of safety induction training and are mandatory for all new workers. Attendance is recorded and the details of non attendees returned to OCDEM administrator. The DSO will inform supervisors of any forthcoming lectures, and it is the responsibility of the supervisor to ensure attendance.
- 5.2 Staff who have not previously attended or those who require a refresher course must also attend.
- 5.3 Details on training lectures are listed on the University of Oxford Safety Office website, www.admin.ox.ac.uk/safety.

6 Laboratory rules

(see also OCDEM SOP S0: Local Safety Rules: Clinical and Laboratory work Containment level 2)

- 6.1 All work must be carried out in accordance with risk assessments.
- 6.2 Do not eat, chew, drink, smoke, apply cosmetics, store food or outdoor clothing in any of the laboratories.
- 6.3 Do not mouth pipette under any circumstances.
- 6.4 Do cover cuts and abrasions with waterproof dressings.
- 6.5 The use of sharps is banned unless there is no alternative. If sharps are used they must be placed directly in a sharps bin for disposal. Sharps must not be re-sheathed.
- 6.6 Laboratory coats, gloves and safety spectacles must be worn at all times when handling samples and removed before leaving the laboratory.
- 6.7 Single use (disposable) gloves must not be reused.
- 6.8 In the event of gloves becoming damaged and/or contaminated the gloves must be discarded, hands washed and new gloves put on.
- 6.9 On completion of work the work station and all equipment must be disinfected.
- 6.10 Wash hands regularly and always before leaving the laboratory.

7 Laboratory coats

- 7.1 Wear laboratory coats fully fastened in the laboratory at all times when working at benches and remove coats before leaving the laboratory. Supervisors should ensure that the requirement for wearing personal protective equipment is being met.
- 7.2 Visitors, both external and internal, must wear laboratory coats for entry to laboratory work areas.
- 7.3 Laboratory coats must be changed regularly and 'dirty' coats laundered by the appropriate route; dirty coats are placed in a skip inside the lobby to the laboratory:
 - Using the NHS laundry
Laundry is placed in a blue bag skip. Count the lab coats and list the contents on

a laundry label, add the department (OCDEM Labs) and the phone extension; remove the bottom copy for reference and place the label inside the blue bag. Tie the blue bag and write the department on the outside of the bag in permanent marker pen and take down to the CRU to be collected by laundry staff.

- Using an external laundry
Some Groups outsource their laundry to Hall Laundry Services Ltd T/A The Burford Laundry. The laundry supplies cloth or clear laundry bags for the dirty coats; a ticket containing the details of the items and the account number must be included with the bags. Contact the Oxlip laboratory manager for further information.

- 7.4 If contaminated with blood, or other biological material, coats should be placed in a pink/red laundry bag with water soluble (alginate) seams; these are available from NHS Supply Chain. These bags must then be placed inside a blue laundry bag. The number of lab coats included must be written on a label which is placed inside the blue bag; the bottom copy is kept for reference. A yellow label which is clearly marked with the type of soiling must be attached to the top of the sealed bag. Suggested wording for the labels is: 'contaminated with blood and/or tissue'. Add the department name to the blue bag with a permanent marker pen. Contaminated coats must only be sent to the NHS laundry; if using Hall Laundry Service the coats must be decontaminated with Virkon or autoclaved.
- 7.5 If contaminated with chemicals the coats must be thoroughly rinsed before being placed in the linen bags.
- 7.6 Both the blue bags, content labels and the yellow labels are available from the linen room in the Churchill Hospital.
- 7.7 Clean laboratory coats are occasionally returned to the CRU to be collected by laboratory staff; in most cases laboratory coats will need to be collected from the Churchill linen room. Hall Laundry services deliver clean coats to reception.

8 Footwear

- 8.1 Wear sensible footwear i.e. no open toed sandals or shoes.

9 Gloves

- 9.1 Wear appropriate gloves for handling samples; use nitrile or vinyl gloves where possible. There have been some instances of people having allergies to nitrile gloves; if problems are encountered with glove selection, please ask the DSO for advice.
Latex gloves should not be used when there are suitable non-latex alternatives. When latex gloves are used a CoSHH assessment must be undertaken for their use; see University Policy [OHS 2/06: Policy on Natural Rubber Latex Gloves](#) available from the [Occupational Health Service website](#).
- 9.2 Remove gloves for '*gloves off*' areas in the laboratory and *before* leaving the laboratory.
- 9.3 Refer to University Policy Statement [S3/02 Personal protective equipment at work regulations 1992](#), for selection of gloves.
- 9.4 Do not reuse single use disposable gloves and inspect integrity of multi-use gloves regularly.
- 9.5 If gloves become damaged or contaminated, discard, wash hands and put new gloves on.

- 9.6 Use double gloves when disinfecting with Virkon following spillages.
- 9.7 Computer terminals and telephones should be designated for use with '*gloves on*' or '*gloves off*' and labelled accordingly.

10 Eye protection

- 10.1 Eye protection is mandatory in OCDEM laboratories, but techniques should always be modified to avoid splashing as far as possible. Eye protection must be 'fit for the purpose for which it is intended'.
- 10.2 Refer to University Policy Statement [S8/10 Eye Protection](#) for more information and selection of eye protection equipment.
- 10.3 Safety goggles, glasses or masks must be checked regularly to ensure that they are clean and maintained in good condition. A record of the checks for shared items is kept in the area stated in the 'Record Keeping' section of the Local Safety Rules.

11 Working practices

- 11.1 Handle biological materials at a workbench and/or designated workstation. Samples must **not** be handled in a writing area.
- 11.2 Do not use sharps unless there is no alternative. If sharps are used they must be placed directly in a sharps bin for disposal. Needles must never be re-sheathed. Sharps bins must not be overfilled and when ready for disposal these should be sealed, dated and labelled with the lab of origin.
- 11.3 Storage of paperwork in the laboratory should be kept to a minimum and ensure as far as reasonably practical that there is no paperwork in sample handling areas.

12 Spillages

- 12.1 This is dealt with in SOP S4: Disinfection in Containment Level 2 areas.

13 Centrifuges

- 13.1 Samples must be centrifuged in sealed safety buckets or centrifuges with a cover over the rotor to avoid production of aerosols. All new centrifuge purchases or items bought as part of an equipment replacement programme should be specified to ensure fully sealable centrifuge buckets are provided.
- 13.2 At the end of a run and before opening the lids to centrifuge buckets, the tubes should be inspected for any signs of breakage. If you discover a breakage follow the instructions in SOP S4: Disinfection in Containment Level 2 areas.
- 13.3 At all times extreme care must be taken in handling the shards from broken tubes. These should be discarded as 'sharps'.

14 Waste disposal and disinfection policy

- 14.1 All contaminated waste must be disposed of via the clinical waste stream. Refer to SOP S3: Waste Disposal.
- 14.2 For disinfection refer to SOP S4: Disinfection in Containment Level 2 areas.
- 14.3 On completion of work, the bench and/or workstation and all equipment must be disinfected. Disinfect bench tops and external surfaces of equipment after use with 1% Virkon.

- 14.4 Before any routine maintenance or repair, equipment must be decontaminated and a decontamination certificate issued to the service engineer. Decontamination forms are kept and filed on the 'Safety Station' in room F40.
- 14.5 There may be specific arrangements for the decontamination of equipment for the purposes of servicing, repair or routine maintenance. Refer to manufacturer's instructions.

15 Accidents

- 15.1 In the event of an accident with potential risk of infection (including needlestick injuries), immediately telephone Occupational Health on Oxford 282676 if within working hours i.e. Mon-Fri 8.30am – 5pm. At other times, or if there is difficulty contacting the OHS, *immediately* telephone the on-call microbiologist via the John Radcliffe Hospital switchboard (01865 741166) or in the case of an injury such as an animal bite go to the Accident and Emergency Department at the John Radcliffe Hospital.
- 15.2 Follow instructions in [OHS 2/03 'Sharps, Splash, Bite and Needlestick Injuries'](#); a flow chart showing the steps to follow when such an injury occurs is posted in the laboratory.
- 15.3 In the event of an accident resulting in a wound:
 - immediately encourage the wound to bleed by irrigating it with cold running water and soap;
 - do not squeeze, suck or rub as this may cause tissue trauma and encourage the spread of infection;
 - cover with a dry waterproof dressing.
- 15.4 In the event of contamination of skin, or mucous membranes immediately wash thoroughly with water.
- 15.5 In the event of contamination of the eyes, wash with water using a dedicated eye wash.
- 15.6 Report all accidents/incidents to your line manager and to the DSO.
- 15.7 Record all accidents/incidents on a University of Oxford Safety Office accident report form. The top copy of accident report forms should be given to the DSO or the OCDEM Admin office who will send it to the Safety Office; the yellow copy is taken to the OCDEM Admin office for safekeeping.
- 15.8 The accident book for laboratories is found in room F40, on the 'Safety Station'.
- 15.9 There is a first aid box located either within each laboratory or the lobby to each laboratory. These are checked regularly and the records are kept as listed in 'Record keeping' in the Local Safety Rules.
- 15.10 There are emergency eye wash stations located in the laboratory lobbies.

16 Review

This document will be reviewed every two years.

17 Further safety information

University Policy Statement S5/09: Biorisk Management is available on the [Safety Office website](#). It can also be found on the 'Safety Station' in the laboratory.

Other sources of information include:

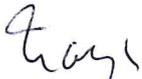
[S1/13 The health and safety of young people and children](#)

[S6/14 Control of Substances Hazardous to Health Regulations \(CoSHH\)](#)

[S5/08 Risk Assessment](#)

All University Policy Statements are available in a red folder on the 'Safety Station' or on the internet at URL: <http://www.admin.ox.ac.uk/safety/>

Document approved and accepted by OCDEM Safety Advisory Committee



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Prof Fredrik Karpe, OCDEM Head of Safety

Date: 30/6 2015

Appendix 1

Hazard Groups:

Hazard Group 1 - An organism that is most unlikely to cause human disease.

Hazard Group 2 - An organism that may cause human disease and which might be a hazard to laboratory workers but is unlikely to spread to the community. Laboratory exposure rarely produces infection and effective prophylaxis or effective treatment is usually available.

Hazard Group 3 - An organism that may cause severe human disease and present a serious hazard to laboratory workers. It may present a risk of spread to the community but there is usually effective prophylaxis or treatment available.

Hazard Group 4 - An organism that causes severe human disease and is a serious hazard to laboratory workers. It may present a high risk of spread to the community and there is usually no effective prophylaxis or treatment.

Training to be undertaken either by your supervisor or a safety officer.

Name of Supervisor/Safety Officer.....

Signature of Supervisor/Safety Officer.....

Date of training:.....

I have read and understood this SOP and agree to abide by the regulations therein.

Signed:.....(Staff Member)

Date:.....

Please copy the completed form and return to your supervisor or DSO who will ensure it is given to HR for filing in your training file.

Version	Date	Reason for update	Updated/reviewed by :	Date next review due
1	Oct 2003	New SOP	Author: SMH, accepted by OCDEM SAC	Oct 2004
1	Sept 2004	No changes required	Reviewed by SMH	Oct 2005
1	Oct 2005	No changes required	Reviewed by SMH	Oct 2006
2	Sept 2006	Changes to names and health surveillance registration	Updated by SMH Accepted by OCDEM SAC	Sept 2008
3	October 2011	Changes to names and text, inclusion of safety specs as mandatory requirement.	Updated by SMH Accepted by Chair of OCDEM SAC	October 2013
3	October 2013	No changes required	Reviewed by SMH	October 2015
3.1	30/06/2015	Additional information on laundry services added. Minor changes to other text, links updated..	Updated by SMH	June 2017