**QUEEN’S UNIVERSITY BELFAST**

Safety Service

February 2018

**Biological/Clinical Waste Disposal Policy**

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1. **Introduction**

This policy document explains the procedure which must be followed for the safe disposal of microbiological and tissue cultures, cultures containing genetically modified organisms (GMO’s), clinical waste and clinical sharps.

A central service for the disposal of clinical waste is provided through the clinical waste stores at the Medical Biology Centre (MBC), Centre for Cancer Research and Cell Biology (CCRCB), Centre for Experimental Medicine (WWIEM) and the Health Sciences Building (HSB).

Separate arrangements are in place for units based at the Royal Victoria Hospital site (RVH).

This policy should be incorporated into local standard operating procedures (SOPs) and followed in conjunction with other regulatory procedures such as the Human Tissue Act (HTA) Guidelines.

1. **Legislation**

Health and Safety legislation requires that employers who generate clinical waste must ensure that the risks associated with the generated waste are properly controlled. This means:

* Assessing the risks under both the COSHH Regulations and the Management of Health and Safety at Work Regulations
* Developing policies
* Ensuring adequate arrangements are in place to manage the risk
* Monitoring the arrangements in place

1. **Definitions**

**3.1 Clinical Waste**

The Controlled Waste Regulations and the Waste and Contaminated Land (Northern Ireland) Order define clinical waste as:

* Any waste which consists wholly or partly of human or animal tissue, blood or other bodily fluids, excretions, drugs or other pharmaceutical products, swabs or dressings or syringes, needles or other sharp instruments, being waste which unless rendered safe may prove hazardous to persons coming into contact with it; and
* Any other waste arising from medical, nursing, dental, veterinary, pharmaceutical or similar practice, investigation, treatment, care, teaching or research, or the collection of bloods from transfusion, being waste which may cause infection to any person coming into contact with it.

However, clinical waste may additionally be regarded as ‘hazardous waste’ if it is also ‘infectious’.

This is defined as:

* Substances containing viable micro-organisms or their toxins which are known or reliably believed to cause disease in man or other living organisms
* Cytotoxic or cytostatic medicine

**3.2 Clinical Sharps**

Any item having corners, edges or projection capable of cutting or piercing the skin. The following items whether contaminated with biohazardous waste or not are considered sharps and must be disposed of in sharps containers:

* Needles
* Needles with syringes
* Blades (razor, scalpel etc.)

Broken glassware contaminated with biohazardous waste must also be disposed of in a sharps container.

1. **Responsibilities**
   1. The **Biological Safety Officer** is responsible for:

* Collection of clinical waste from Clinical waste stores
* Selection and approval of specialist contractors for the disposal of clinical waste
* Provision of advice to Schools and Departments regarding classification of waste
* Monitoring that staff, students and contractors are following the necessary systems and procedures.
  1. The **Heads of Schools and Centres** are responsible for**:**
* Ensuring that they have suitable systems in place for:
  + the assessment of risk,
  + identification and suitable packaging available for the management of clinical waste
* Notification and registration to relevant authorities
  1. All **Staff, Students and Contractors** are responsible for**:**
* Ensuring that clinical waste is segregated and packaged properly
* Transportation of clinical waste from individual laboratories to the Clinical waste stores
* Ensuring that this policy is strictly adhered to.

1. **Sterilisation of Microbiological and Tissue Cultures**

Microbiological and tissue cultures can be sterilised by either chemical disinfection or autoclaving. Both processes are described below:

* 1. **Chemical Disinfection**
* Appropriate chemical sterilisation may be used for Biohazard Group 1material. If an autoclave facility is available then this should be used. For biohazard Group 2 and above, the procedures determined to be appropriate for the organism concerned as part of the risk assessment should be used.
* Materials to be sterilised should be immersed in a sterilisation solution such

as 2% Virkon® for 10-12 hours. Sterilisation products from different manufacturers will vary. Always follow the manufacturers’ instructions.

* Once the sterilisation process has been completed, the waste material should

be bagged and sealed. The sterilised liquid solutions may be disposed of to drain providing they do not contain any substances which are dangerous for the environment.

* Wrap the ‘STERILE’ laboratory tape around the bag at least twice.
* Fill in the ‘MADE SAFE FOR DISPOSAL’ label (template attached as

Appendix 1) and apply to the bag.

* Take the bag to the designated disposal officer who must check the container prior to disposal.
* Once checked, the bag can be taken to the designated disposal area.
  1. **Autoclaving**
* The process of autoclaving allows materials containing microbiological cultures to be effectively sterilised to render them harmless and therefore safe for disposal through the University’s non-hazardous waste stream. The solutions sterilised by autoclaving may be disposed of to drain providing they do not contain substances which are dangerous for the environment.
* Once the materials have been autoclaved, wrap the ‘STERILE’ laboratory tape around the bag at least twice making sure that it covers the biohazard signage on both sides of the bag.
* Place the bag into a black bag and seal.
* Fill in the ‘MADE SAFE FOR DISPOSAL’ label (template attached as

Appendix 1) and apply to the bag.

* Take the bag to the designated disposal officer who **must** check the container prior to disposal.
* Once checked, the bag can be taken to the designated disposal area.

1. **Genetically Modified Organisms (GMO’s)**

Cultures containing genetically modified organisms **must** be sterilised before disposal by autoclaving.

Following sterilisation they must be disposed of as detailed in 5.1 and 5.2.

1. **Identification of Clinical Waste**

Responsibility for identifying clinical waste lies strictly with the producer. It is important to remember, for identification purposes, that all wastes contaminated with clinical wastes become clinical waste themselves.

1. **Clinical Waste Segregation**

Environmental Legislation demands that waste is segregated. Segregation at the point of origin, aided by suitable and consistent packaging, is vital in enabling different forms of waste to be handled, transported and disposed of in a manner which is safe and in keeping with the nature of the waste.

Clinical waste must be carefully segregated from other wastes whilst in production and storage. Under no circumstances must clinical waste be allowed to enter the University general waste stream.

Any clinical waste which is infectious **must** be sterilised before disposal to render it non-infectious.

Note. A separate waste disposal stream exists for non-hazardous clinical waste generated from teaching and clinical skills activities which is placed in yellow clinical waste bags and blue lidded sharps containers and accumulated in clinical waste bins at the designated compound at the MBC.

1. **Primary Containment**

All clinical waste containers should be capable of containing the waste without spillage or puncture especially during transport and handling. Most clinical waste can be considered as solid waste. Where there are quantities of liquid present, an inner liner or absorbent material must be present to soak up the liquid. The containers should be filled to the marked fill line and never overfilled. The lid must be properly closed making the container spill-proof. The container must always be labelled to ensure that the source and contents can be easily identified.

The following details must be recorded on the clinical waste containers:

* Laboratory number
* Building name
* Name of person responsible for sealing clinical waste
* Type of waste contained (HT, HA, HI, HY, VA)

All clinical waste must be identifiable from the point of generation and provide information which will permit traceability of each package back to its producer’s location. This will also benefit internal auditing of clinical waste generation.

The Biological Safety Officer should be contacted for advice as to obtaining these containers and clinical waste matters in general before commencing a project that will generate clinical waste.

1. **Best Practice Colour Coding**

The Department of Health and Environment Agency published guidance in 2006 – HTM 07 01 which introduced colour coding and correct segregation, this was replaced in March 2011 with the publication of The Manual – Safe Management of Healthcare Waste, which can be found at: <http://www.srcl.com/about/downloads/type/guidance-regulation/>

The containers are yellow with different coloured lids as below:

**Infectious waste (HT)**

Waste suitable for alternative treatment

**Infectious waste (HI)**

Incineration only

**Anatomical waste (HA, VA & HTA relevant material)**

Incineration only

**Cytotoxic/Cytostatic waste (HY)**

High temperature incineration (above 1200oC) in a suitably permitted facility

1. **Sharps Disposal**

Routine clinical sharps e.g. Needles, butterflies etc. should be places in a suitable clinical sharps container prior to disposal.

Sharps which are contaminated with infectious material **must** be sterilised by chemical disinfection before being packaged in the relevant sharps containers. These containers must then be taken to the MBC, CCRCB or HSB Clinical waste store.

1. **Disposal of material covered by the Human Tissue Act**

The Human Tissue Act regulates the removal, use, storage and disposal of human tissue and makes significant distinction between tissue removed from the living and the deceased.

Human material (cells, solid tissue, blood, bodily fluids) may be removed from living individuals in the following circumstances:

* As part of a diagnostic process when material is required for laboratory testing
* As part of a therapeutic procedure, usually involving the removal of solid tissue or
* As part of a research project involving normal volunteers; and

Tissue removed from the deceased is usually material removed in the mortuary at post mortem examinations, but organs or tissues from the deceased maybe used for transplantation and/or research and may be removed in an operating theatre.

Material removed from living patients must be disposed of separately from other clinical waste by incineration. For material removed from the deceased, the normal minimum requirement for respectful disposal is for separate incineration. However the wishes of the deceased or their relatives must be complied with as long as they are legal and safe.

For further information please refer to the Standard Operating Procedures available on the Research Governance and Ethics website:

http://www.qub.ac.uk/Research/Governance-ethics-and-integrity/Human-tissue/

1. **Animal Anatomical Waste**

Freezers are available in the MBC store for animal anatomical waste which is likely to undergo putrefaction. This material should be placed in green bags and labelled before freezing. Paper tissues contaminated with animal tissue/fluids may also be placed in the bag. No other materials are permitted to be placed in the bag.

The bags should be placed in the bins in the freezers to give the waste shape when frozen. Under no circumstances should lids be placed on these bins. Closed bins are not permitted to be left in the freezer.

1. **Storage**

Clinical waste should be removed from its place of origin for storage prior to collection. The waste should not be allowed to accumulate in unsuitable places such as corridors. All containers should be removed when the fill level has been reached. However, if waste is likely to present a risk due to its infectious or hazardous nature or become offensive then it should be removed to storage as soon as possible. Departments should nominate a responsible person(s) from each laboratory to carry out this task.

Storage areas for clinical waste have been designated in each School / Centre and can be found in the MBC, CCRCB, CEM and HSB.

1. **Stores Procedure**

The following details of all clinical waste deposited in the MBC, CCRCB, CEM or HSB clinical waste store **must** be recorded in the log book provided:

* Quantity
* Nature
* Originating School (MBC only)
* Lab Number
* Building (MBC only)

Clinical waste **must** be packaged in the correct containers.

The Biological Safety Officer will arrange for the uplift of clinical waste from the stores. The Biological Safety Officer should be contacted immediately should the facilities be nearing full or there is any other problem with the procedure.

1. **Collection**

Clinical waste will be collected on a routine basis by a Licensed Waste Carrier. Additional collections can be arranged through the Biological Safety Officer.

1. **Procedure for accidents / incidents and spillages**

Employers at all points of the waste chain require written procedures for dealing with accidents or incidents, which address:

* Immediate first aid measures
* Reporting of the accident / incident to a responsible designated person
* Recording of the accident / incident
* Investigating the incident and implementing remedial action. Initial investigation should preferably take place before any damaged container is removed
* Retaining, if possible, the item and information about its source to help identify possible infection risks
* Attendance by any injured person at an A&E department with subsequent referral to Occupational Health if required as soon as possible

In the case of sharps injuries, procedures also need to cover arrangements for suitable medical advice and counselling. Reference should be made to the University’s guidance on Needle stick injuries. Accidental wounds caused by contaminated sharps must be dealt with immediately by encouraging bleeding and liberally washing the wound with soap and water but without scrubbing. The wound should then be covered with a waterproof dressing.

1. **Spillage Kits**

The requirement for spillage kits is dependent on the outcome of the risk assessment with the contents varying depending on the type of waste being generated.

As a minimum spillage kits should contain the following:

* Disposable gloves
* Disposable apron
* Clinical waste sack
* Paper towels
* Disposable cloths
* Recommended disinfectant
* Means of collecting sharp

**Queen’s University Belfast**

Laboratory waste –

**MADE SAFE FOR DISPOSAL**

Dept / Lab: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date: \_\_\_\_\_\_\_ / \_\_\_\_\_\_\_\_ / \_\_\_\_\_\_

Supervisor’s Initials: \_\_\_\_\_\_\_\_\_\_ Extension no. \_\_\_\_\_\_\_

**Appendix 1 – Made Safe for Disposal Template**

**Appendix 2 – Best Practice Colour Coding**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Container Type** | **EWC** | **Type of Waste** | **Suitable for** | **Treatment** | **Code** |
| th?id=H | 18 01 03 | Infectious Clinical Waste | Infectious or potentially infectious hard clinical waste contaminated with blood / bodily fluids. **NO** free liquids. Free liquids should be sealed in a screw cap container and then placed in burn bin.  Laboratory and histology waste | Steam Sterilisation Process (alternative treatment) | **HT** |
| orangelid2 | 18 01 03 | Infectious Clinical Waste | Sharps (hypodermic needles, attached syringe bodies, etc.) which may be contaminated with potentially infectious body fluids and discharges medicinal syringes  Contaminated slides, stitch cutters, guide wires, trocars and razors  Blood stained or contaminated glass or any other contaminated item likely to puncture a bag | Steam Sterilisation Process (alternative treatment) | **HT** |
| 05480wiva | 18 01 03 | Infectious Clinical Waste | Laboratory waste or anything else not suitable for heat treatment  Waste containing Hazard group 4 pathogens or CJD  Non-autoclaved Risk group 2 and 3 laboratory cultures  Large or bulk metallic objects | Incineration Only | **HI** |
| 18808_FSL004 | 18 01 08 | Cytotoxic / Cytostatic Waste | Needles, syringes, sharp instruments, cartridges and broken glass used in the administration of cytotoxic/cytostatic and vaccine drugs | High Temperature Incineration | **HY** |
| **Container Type** | **EWC** | **Type of Waste** | **Suitable for** | **Treatment** | **Code** |
| 20788_FSL392 | 18 01 08 | Cytotoxic / Cytostatic Waste | Containment of non-sharps cytotoxic/cytostatic and vaccine waste, including cover-protected sharps or sharps tips. **NO** free liquids. Free liquids should be sealed in a screw cap container and then placed in burn bin.  Left-over cytotoxic drug preparations | High Temperature Incineration | **HY** |
| 69395528_red-lid-60-low-res | 18 01 03 | Anatomical Waste | Infectious healthcare anatomical waste  Containment of recognisable anatomical waste or body parts | Incineration Only | **HA** |
| 69395528_red-lid-60-low-res | 18 01 03 | Anatomical Waste | Human Tissue Act (HTA) related human tissue  Human Tissue Act (HTA) related blood  Human Tissue Act (HTA) contaminated sharps (must be in a sealed orange lidded sharps bin and then placed inside red lidded burn bin and sealed) | Incineration Only | **HTA relevant material** |
|  | 18 01 03 | Animal  Anatomical Waste | Infectious veterinary anatomical waste – non recognisable animal waste or body parts | Incineration Only | **VA** |
| EPI731 | 18 01 03 | Animal Anatomical Waste | Animal anatomical waste which is likely to undergo putrefaction  Recognisable animal body parts | Incineration only | **VA** |

**Appendix 3 – European Waste Catalogue Codes**

The List of Wastes Regulations (Northern Ireland) 2005

**18 Wastes from Human or Animal health care and/or related research (except kitchen and restaurant wastes not arising from immediate health care)**

**18 01** Wastes from natal care, diagnosis, treatment or prevention of disease in humans

18 01 01 Sharps (except 18 01 03)

18 01 02 Body parts and organs including blood bags and blood preserves (except 18 01 03)

**18 01 03** Wastes whose collection and disposal is subject to special requirements in order to prevent infection

18 01 04 Wastes whose collection and disposal is not subject to special requirements in order to prevent infection (for example dressings, plaster casts, linen, disposable clothing, diapers)

18 01 06 Chemicals consisting of or containing dangerous substances

18 01 07 Chemicals other than those mentioned in 18 01 06

**18 01 08** Cytotoxic and Cytostatic medicines

18 01 09 Medicines other than those mentioned in 18 01 08

18 01 10 Amalgam waste from dental care