SECTION 20

HEALTHCARE RISK WASTE MANAGEMENT

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Introduction
This guidance aims to ensure the safe and efficient handling, segregation, packaging, storage, collection and disposal of healthcare risk waste generated in the provision of patient care in community healthcare settings (Department of Health and Children, 2010).

All healthcare waste management must conform to national waste regulations as appropriate, please refer to Collection Permit, Consignment Notes/Waste Transfer Form and Healthcare Risk Waste Packaging below. All those working in areas where clinical and general waste arise must adopt safe working practices, since failure to do so may result in the service being in breach of its statutory obligations.

Waste Collection Permit
It is the responsibility of the Waste Holder* to ensure that the Waste carrier possesses a valid Waste Collection Permit. The Waste Collection Permit is issued by the nominated authority authorising that Permit Holder to collect waste subject to the conditions attached to the Permit.
From the 1st February 2012, all new Waste Collection Permits shall be processed by the National Waste Collection Permit Office (NWCPPO), Offaly County Council, Aras an Chontae, Charleville Road, Tullamore, Co. Offaly. Tel: 057 93 46800.
*The Waste Holder can be defined as the owner, person in charge or any other person having possession or control of the waste. For example, a hospital, nursing home or a GPs surgery are all holders of waste.

Waste Transfer Form (WTF)
A WTF is an identification document for tracking and controlling the movement of hazardous (including healthcare risk) waste within Ireland and is used to ensure that a consignment is delivered to an authorised facility. The WTF is an online/ web based electronic system which is managed exclusively by Dublin City Council (DCC). Since 1st July 2011 DCC is the national authority responsible for supervising and controlling internal movements of hazardous waste within Ireland. There are two options for the administration of the WTF
Option 1-The WTF will be an online electronic system involving users to
• Register on line to create an account (no charge to register)
• Purchase a WTF at a charge of €6 per form
• Complete the WTF online
• Download the WTF
• Sign the WTF which will accompany the waste in transit
• The receiving facility will log in to the online system to validate acceptance of the load on the WTF.

Option 2- A carrier (person who undertakes the movement of waste) or Consignee (the authorised facility to where the waste is transported for recovery or disposal) may download a WTF on behalf of a producer and present for the producer to sign on collection of the waste.

To comply with ADR Regulations, documentation is also required for each consignment of waste collected detailing the number and description of packages (as this is not on the WTF) and a copy left on site to be kept for a minimum of 5 years.
Transfrontier Shipment (TFS) Form
Pharmaceutical or cytotoxic waste (purple or black lidded rigid bins or purple lidded sharp bins) is shipped abroad for incineration. The waste contractor requires separate documentation (available from the National TFS Office, Dublin City Council) prior to transportation of this waste abroad called the Transfrontier Shipment (TFS) form. Therefore all purple and black lidded rigid bins and all purple lidded sharps bins must always be stored and presented to the carrier separate to general healthcare risk waste i.e. do not put in to the yellow wheelie bin.

Traceability
All healthcare risk waste packages must be labelled (location, signature and date) or tagged with a unique reference number, which is traceable to the point of production (“Closure and Labelling” Appendix 20.1 and 20.2).

Records of tags issued must be retained for a period of no less than three years and be available for inspection. Records should include details of date and the ward/department where the container was used. In case of incidence, this will allow each package to be traced to the actual producer.

Once issued, tags must not be shared between wards/areas.

Responsibilities

All personnel who handle waste are responsible to:

♦ Ensure the safe disposal of waste they have generated according to “Segregation and Packaging of Healthcare Risk and Non-Risk Waste” (October 2007, Appendix 20.3)
♦ Undertake training which should be provided for all those who generate, segregate, package, collect, transport and store waste.
♦ Ensure that waste is correctly and safely segregated and prepared for collection.

Hospital/Ward/Clinic/Centre/Department Manager is responsible for ensuring that:
♦ Structures are in place so that waste is segregated into the appropriate containers at the point of generation.
♦ Adequate supplies of approved bags/containers and individually tagged ties are available.
♦ Training is available for staff and staff is facilitated to attend such training sessions.
♦ Measures are taken to correct any hazards identified or breech from guidelines.
♦ Any incidents that occur in relation to waste are reviewed and appropriate action taken to prevent a recurrence in the future.

Staff Training
Sufficient and appropriate training should be given to personnel involved in the generation and handling of healthcare risk waste to include:
1 An understanding of the nature of the waste generated.
2 Identification and segregation of the categories of waste.
3 Use of appropriate packaging for different categories to be segregated according to the appropriate disposal method - “Segregation and Packaging of Healthcare Risk and Non-Risk Waste” (Appendix 20.3).
4 Potential risks to health
5 Precautions to be taken including hand hygiene and personal protective equipment.
6 Steps to be taken in the case of incidents and to prevent incidents.

- The need for training should be identified by the Matron/Department Manager who has the responsibility for ensuring that all staff is trained.
- Training should be part of an induction programme and should be repeated to take account of new or changed legislation, procedures or circumstances.
- Training records will be kept by the department manager.

**Segregation of Healthcare Waste**

"Healthcare waste is the solid or liquid waste arising from healthcare." (Pg. 9 DoHC, 2010)

A risk assessment of the waste should be carried out at the point of generation where the nature of the waste is likely to be best understood. This risk assessment will determine whether the waste is **healthcare non-risk waste** or **healthcare risk waste**.
Healthcare Non-Risk Waste (HCNRW)

"This is categorised as non-risk waste, which is not hazardous to those who come in contact with it. Its contents are non-infectious, non-radioactive or non-chemical" (Pg.42, DoHC, 2010)

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Domestic waste</td>
<td>This includes normal household and catering waste, all non-infectious waste, non-toxic, non-radioactive, and non-chemical waste. Examples include flowers, office waste, paper hand towels, wrapping paper, cardboard, newspaper and cans.</td>
</tr>
<tr>
<td>2. Confidential material</td>
<td>This includes shredded waste documents of a confidential nature e.g. patient notes and laboratory results.</td>
</tr>
<tr>
<td>3. Client care items</td>
<td>Items not contaminated with blood or body fluids and items contaminated with faeces, urine or breast milk that has been assessed as non-infectious. Examples include plastic items, plastic bottles, plastic packaging, empty IV solutions fluid bags, oxygen tubing and face masks, nebuliser sets, enteral feeding bags and administration sets, gloves and aprons.</td>
</tr>
<tr>
<td>4. Potentially offensive material</td>
<td>Items contaminated with faeces, urine or breast milk that has been assessed as non-infectious and not contaminated with blood or other body fluids. Examples include nappies/incontinence wear, stomas bags, urinary drainage bags, tubing and urinary catheters.</td>
</tr>
<tr>
<td>5. Kitchen Waste</td>
<td>Containers should be provided at appropriate locations within the kitchen/catering area, for collection of waste. Waste material shall be stored for collection and/or disposal in a designated area, physically separated from the food storage or food preparation areas.</td>
</tr>
</tbody>
</table>

Healthcare Non Risk Waste Packaging

<table>
<thead>
<tr>
<th>Container Type</th>
<th>Contents</th>
</tr>
</thead>
</table>
| Clear Bags in labelled “Healthcare Non-Risk Waste” white, foot operated pedal bins | • Incontinence wear (from non-infectious patients)  
• Nappies (non-infectious patients)  
• Oxygen face masks  
• Empty urinary and empty stoma drainage bags  
• Clear tubing (e.g. oxygen, urinary catheters, Ventilator tubing, naso-gastric tubes)  
• Enteric feeding bags / Empty CAPD bags  
• Non-contaminated gloves, aprons and masks  
• All other household non-recyclable waste  |
Healthcare Risk Waste (HCRW)

“This is categorised, as risk waste, which is potentially hazardous to those who come in contact with it, by nature of its infectious, biological, chemical or radioactive content, or by being categorised as a sharp” (Pg. 41 DoHC, 2010).

For the purpose of waste segregation faeces, urine and breast milk can be assessed as infectious or non-infectious and disposed of accordingly (DoHC, 2010).

Please refer to the Department of Health and Children Guidelines 4th Edition (2010) for dealing with biological, chemical, microbiological and radioactive waste. General healthcare risk waste will be addressed with relevance to the residential healthcare setting and includes:

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infectious waste</td>
<td>1. Blood, and any items visibly soiled with blood, e.g. blood giving sets and bags, wound dressings, wound drains, swabs, disposable aprons and gowns that are blood stained.</td>
</tr>
<tr>
<td></td>
<td>2. Items contaminated with faeces, urine or breast milk with known or suspected transmissible micro-organisms.</td>
</tr>
<tr>
<td></td>
<td>3. Items contaminated with body fluids other than faeces, urine or breast milk, i.e. pus, sputum, or peritoneal fluid. Examples include suction containers and tubing and VAC wound canisters.</td>
</tr>
<tr>
<td></td>
<td>4. Incontinence wear/nappies with known or suspected enteric pathogens e.g. Clostridium difficile or salmonella.</td>
</tr>
<tr>
<td></td>
<td>5. Other healthcare infectious waste from treatment areas as covered by definition of Infectious Waste</td>
</tr>
<tr>
<td>Sharps</td>
<td>“Categorised as any object that has been used in the diagnosis, treatment or prevention of disease and that is likely to cause a puncture wound or cut to the skin. Examples include used needles, scalpels, razors, lancets, contaminated broken glass, stitch cutters or any other contaminated disposable sharp instrument or item” (pg.42 DoHC, 2010).</td>
</tr>
<tr>
<td>Pharmaceutical</td>
<td>Unused drugs and other pharmaceutical products should be returned to the pharmacist. This is the preferred method of disposal of pharmaceutical products. If the above method is not feasible, out-of-date drugs must be disposed of in a 30 litre yellow rigid bin with a purple lid.</td>
</tr>
</tbody>
</table>
**Healthcare Risk Waste Packaging**

The following colour coding is used in respect of all containers/bags used to hold Healthcare Waste prior to final disposal.

- **Yellow**  **All healthcare risk waste**

- **Black or clear**  **All healthcare non-risk waste**

Apart from containment of the waste, the principal functions of the packaging used for healthcare risk waste is to:
- provide protection to personnel from the risk of exposure or contact with potentially infectious or otherwise hazardous material.
- identify the type of waste generated and the disposal stream employed

Primary packaging is the responsibility of the generator of the waste. All packaging for healthcare risk waste must be marked with:
- UN number as appropriate (e.g. UN3291 or UN2814)
- A diamond shaped risk label with class number "6" and a biohazard symbol. The diamond hazard label is required to have side dimensions of 100mm. A smaller label is permissible only where the containers are not large enough to accommodate the 100mm label provided it remains clearly visible.

- Additional labelling should read "HEALTHCARE RISK WASTE - FOR CONTROLLED DISPOSAL"
## General Healthcare Risk Waste for Steam Sterilisation

<table>
<thead>
<tr>
<th>Container Type</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>UN approved, yellow bag in labelled</strong></td>
<td>Soft risk waste contaminated with blood, body fluids or materials from patients assessed as being infectious e.g.</td>
</tr>
<tr>
<td>“Healthcare risk waste” in yellow, foot-operated pedal bin</td>
<td></td>
</tr>
<tr>
<td><img src="image" alt="Yellow bag" /></td>
<td></td>
</tr>
<tr>
<td>• dressings, swabs, bandages, personal protective equipment (gowns, aprons, gloves)</td>
<td></td>
</tr>
<tr>
<td>• Suction catheters and tubing</td>
<td></td>
</tr>
<tr>
<td>• Incontinence waste from known or suspected enteric infections</td>
<td></td>
</tr>
<tr>
<td>• <strong>No sharps, fluids or hard objects</strong></td>
<td></td>
</tr>
</tbody>
</table>

| **UN approved Sharps Container with blue or red lid** | Categorised as                                                                 |
|                                                      |     |
| ![Sharps Container](image)                          | **Needles / Syringes**                                                      |
|                                                      | **IV sets**                                                                 |
|                                                      | **Contaminated slides**                                                     |
|                                                      | **Blood stained or contaminated glass**                                     |
|                                                      | **Stitch cutters / Razors**                                                 |
|                                                      | **No free fluids allowed**                                                  |

<table>
<thead>
<tr>
<th><strong>Yellow 30 / 60 litre Rigid Container with Yellow Lid</strong></th>
<th>Categorised as</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Container" /></td>
<td><strong>Bagged processed blood packs with giving sets attached, contained blood, plasma and body fluids</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Disposable suction liners / Redivac drains and VAC wound canisters.</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Sputum containers</strong></td>
</tr>
<tr>
<td></td>
<td><strong>No Sharps / No Free Fluids</strong></td>
</tr>
</tbody>
</table>
## Healthcare Risk Waste for Incineration

<table>
<thead>
<tr>
<th>Container Type</th>
<th>Contents</th>
</tr>
</thead>
</table>
| **UN approved Yellow 30 / 60 litre rigid container with black lid** | • Placenta are placed in yellow plastic bag, sealed and placed in the bin with absorbent mat  
• Non autoclaved microbiological cultures  
• Large anatomical body parts  
• Waste from known or suspected CJD cases  
• Large metal surgical objects e.g. metal instruments, hips joints  
Must contain absorbent material when free fluid is present*  
• No Sharps/No free fluids |
| **Yellow 30/60 litre rigid container with purple lid** | • Cytotoxic contaminated Healthcare Waste including left over cytotoxic drug preparations.  
• Pharmaceutical waste and discarded chemicals & Medicines from pharmacy  
• No Sharps. |
| **Yellow Sharps bin with purple lid** | • Contaminated cytotoxic sharps, needles, syringes, sharp instruments and broken glass  
• No free fluids |

Please refer to Appendix 20.3- “Segregation & Packaging of Healthcare Risk & Non-Risk Waste” Poster and Appendix 20.1 and 20.2 –“Closure and Labelling”
Sharps Waste Generated in the Home

Infrequent administration of injections

In some circumstances, where patients require infrequent injections administered by the healthcare worker, he/she may carry a UN approved sharps bin and return for disposal to the Health Centre. Staff must always transport the sharps bin with the lid in the temporary closed position in the boot of their car to the health centre.

Patients Own Sharps Waste

Patients using sharps (self injected prescription only medicines either administered by the patient or by the healthcare worker frequently) should:

• Be provided with a sharps bin
• Be advised of local disposal options when the sharps bin is 2/3 full. (closed properly and labeled) which are to either return to:
  o The health centre
  o The Clinic at the hospital where they attend e.g. Hepatitis C Clinic
  o The General Practitioner may accept sharps bins but is not obliged to.

Under no circumstances, should householders place sharps or sharps bins into the general household waste.

Good Practice Points for Issuing Sharps Bins

If a client needs a sharps bin for the first time, the correct uses of a sharps bin should be outlined by the clinician prescribing the need for the bin to include:

• Receiving both verbal and written instruction on the safe storage and disposal of sharps i.e. review the “Sharps Disposal: Patient Information Leaflet” appendix 20.4) with the client.
• Either providing a preassembled sharps bin or if it needs to be assembled, this should be assembled for the client.
• Tagging the sharps bin with an individual tagged tie and/or completing the label with the client name, location of issuing centre and date of assembly.
• Filling the sharps bins to the dotted line on the front of the bin.
• When full, demonstrating to the client how to securely close the sharps bin according to the manufacturer’s instructions.
• Sharps bins must be closed by the client prior to transporting to the centre. Failure to close the bin properly could result in those accepting or disposing of the bin to risk of a needlestick injury.
• Advising the client of the days and times that sharps bins will be accepted for disposal and new ones issued.

Good practice Points for Accepting Sharps Bins

Advise the client that the minimum criteria for accepting sharps bins for disposal include:

• Sharps bin correctly assembled.
• Sharps bin correctly closed.
• Sharps bin filled to manufacturer’s dotted line on front of bin and not overfull.
• Label completed identifying date assembled, location and date closed and/or tagged.
• Sharps bin is clean with no splashes of blood on the outside.

Sharps bins not meeting the above criteria will need to be further packaged into a larger sharps bin for disposal.

**General Good Practice**

**Disposal of Healthcare Risk Waste**

• Yellow bags must be of 400 gauge high density and UN approved as above. If small yellow bags are used e.g. from dressing packs, these bags must be placed into the large approved yellow bags for disposal.
• All bags must be contained in an enclosed, lidded, pedal operated yellow refuse sack holder. Refuse sack holders must be in good working order and labelled “Healthcare Risk Waste”.
• Never dispose of waste into an already full bag/bin.
  • Bags should be tied when 2/3 full using individually tagged ties identifying ward/department/hospital. No other method is approved for sealing bags.
  • Sharps bins should be closed securely when 2/3 full or at manufacturers fill line.
  • Sharps bins must be assembled correctly and signed for by the person doing so. On closure the person must sign that the container is sealed correctly. Date, location, department/ward and hospital also to be identified.
• Never remove items from bags/bins. Sealed bags/bin should never be reopened.
• Healthcare risk waste must not be placed in a domestic waste bag. If this occurs, the entire bag must be repackaged as healthcare risk waste and disposed of as such.
• The disposal of healthcare risk waste is generally four times the cost of landfill of non-risk waste.
• Do not put any sharps or sharp edged items into yellow bags, which may tear the bag. Do not place any free fluids into bags as these may spill.

**Perform hand hygiene following any waste handling/disposal.**

**Ward /Clinic/Department Storage**

• Securely sealed and tagged bags and labelled containers should be stored in a designated safe area in the ward/dept i.e. waste holding area, awaiting collection.
• Ensure storage area is secure and clearly labelled identifying as “Staff Only” i.e. inaccessible to the public.
• Maintain segregation of healthcare risk waste from non-risk waste during ward/departmental storage.

**Transport from Ward/Clinic/Department**

• Frequency of removal of Healthcare waste should be dictated by clinical activity.
• Wear gloves and, where necessary, an apron before handling waste for transport.
  • Heavy duty gloves may be necessary for those handling large volumes of waste/waste bags/bins.
• Handle waste bags and bins with care and carry them away from the body. Only handle bags by the neck.
• Waste bags should never be dragged, thrown or dropped nor should bags be decanted from one bag into another.
• Bags and bins which have splashes of blood/body fluids on the outside should be either cleaned or further packaged as appropriate.
• Healthcare risk waste must be kept separate from non-risk waste during transport, to minimise the risk of accidental cross contamination.
• Sharps or rigid bins should not be removed from area of generation unless correctly assembled, closed and labelled with location, signature and dated.
• Sharps bins, rigid bins or bags which are overfilled, unlabelled or not securely tied, will not be removed for disposal and must be reported to clinic/ward/department manager, for remedial action to be taken.
• Report any accidents, spillages and untoward incidents to your supervisor and complete appropriate incident/accident form e.g. an unacceptable build-up of waste has occurred, sharps or other inappropriate items have been found protruding from waste containers, inappropriate container used leading to spillage.

Central Waste Storage/Waste Marshalling Area
Central Waste Storage area should be provided for waste awaiting collection by contractor for final removal and disposal. Appropriate to the volume of waste generated, facilities should include the following:-
1. Well ventilated, well drained, impervious hard standing.
2. Enclosed compound with lockable gates.
3. Secure from interference by unauthorised persons, children or scavenging animal.
4. Appropriate signage indicating presence of healthcare risk waste and restricted access to the public should be prominently displayed at all entrances to the storage area.
5. Storage areas should be easily accessible to collection vehicles.
6. Healthcare risk waste must be kept separate from non-risk waste, to minimise the risk of accidental cross contamination.
7. Equipped with spillage kits and washing/cleaning facilities for dealing with spillages as well as necessary services including lighting.
8. The storage area should have sufficient capacity for the proposed frequency of collection including a margin for an interruption in the collection/disposal system.
9. Check the locking mechanism on wheelie bins from the contractor on delivery and only accept bins that are lockable.
10. The storage of healthcare waste should be for as short a time as possible.
Storage of Waste Prior to Collection

<table>
<thead>
<tr>
<th>Primary Packaging</th>
<th>Secondary packaging in central waste storage area awaiting collection</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Yellow bags" /></td>
<td><img src="image2" alt="Yellow bags in central waste storage" /></td>
</tr>
<tr>
<td>Yellow bags, Sharps bins and rigid bins with yellow lid</td>
<td></td>
</tr>
<tr>
<td><img src="image3" alt="Black bags" /></td>
<td><img src="image4" alt="Black bags in central waste storage" /></td>
</tr>
<tr>
<td>Black, clear or white bags</td>
<td></td>
</tr>
</tbody>
</table>

**NEVER PLACE PURPLE or BLACK LIDDED BINS IN YELLOW WHEELIE BINS NOR MIX WITH ANY OTHER WASTE.**
Note: Segregation of healthcare risk waste from healthcare non-risk needs to be maintained during transport and storage.

Procedure in case of spillage of healthcare risk waste during transport or in storage

Managers are responsible for ensuring that there is an effective written procedure for dealing with an accidental spillage.

- All relevant staff should receive training in this procedure.
- Equipment such as protective clothing and cleaning agents should be properly stored in a designated area and readily available.
- Spillages of blood/body fluids should be managed following the “Management of Blood and body fluids spills” as in Standard Precautions (Section 3).
- Manage any needlestick injury or other occupational exposure by following and using “Action following a Blood and Body Fluid Exposure” Poster (Section 3; Appendix 3.8)
- There must be proper cleaning of the affected area and any equipment used should be either replaced or correctly disposed once the spillage has been cleaned.

(Please refer to “Prevention and Protection Protocols for Blood and Body Fluid exposures”, HSE South Cork and Kerry (2010)).
Bibliography

Irish Acts
Waste Management Act 1996 (S.I. No. 10)
Waste Management (Amendment) Act 2001 (S.I. No. 36)

Legislation
• S.I. No. 147 of 1998 – Waste Management (Movement) Regulations 1998
• S.I. No. 6 of 2001 - The European Communities (Safety Advisers for the Transport of Dangerous Goods by Road and Rail) Regulations 2001
• S.I. No. 402 of 2005 – Waste Management (Electrical and Electronic Equipment) Regulations 2005
• S.I. No. 405 of 2006 - The Carriage of Dangerous Goods by Road Regulations 2006
• S.I. No. 419 of 2007 – Waste Management (Shipment of Wastes) Regulations 2007
• S.I. No. 798 of 2007 – Waste Management (Packaging) Regulations 2007
• S.I. No. 820 of 2007 - Waste Management (Collection Permit) Regulations 2007
• S.I. no. 87 of 2008 – Waste Management (Collection Permit) (Amendment) Regulations 2008
• S.I. no. 324 of 2011 – The European Communities (Shipments of Hazardous Waste Exclusively Within Ireland) Regulations 2011
• European Communities (Carriage of Dangerous Goods by Road and Use of Transportable Pressure Equipment) Regulations 2011.


Centre for Disease Control & Prevention (2000) Infectious Waste
www.cdc.gov/ncidod/hp/BLOOD/Waste.htm


