



Royal College  
of Nursing

# The management of waste from health, social and personal care

*RCN guidance*



This publication is supported by the health care industry



## Acknowledgements

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# Contents

<b>Executive summary</b>	4	<b>5. Community health care</b>	24
Recommendations	4	5.1 Nursing in the community	24
<b>Introduction</b>	5	5.2 More typical examples	24
<b>1. Waste terminology</b>	6	5.3 Transport of waste in the community	25
1.1 What is waste classification?	6	<b>Glossary</b>	26
1.2 Health care waste	8	<b>References and further reading</b>	27
1.3 Hazardous waste	8	<b>FAQs</b>	27
1.4 Clinical waste	9	<b>Appendix A – Berkshire Healthcare Foundation Trust sample training materials (decision diagram)</b>	30
1.5 Offensive waste	9	<b>Appendix B – NHS Fife staff questionnaire Let's talk rubbish!</b>	31
<b>2. Waste assessment and classification</b>	10	<b>Appendix C – How and why to do a waste audit in a renal unit</b>	32
2.1 Assessing waste for segregation	10		
<b>3. Segregation and storage</b>	15		
3.1 Introduction to waste segregation	15		
3.2 Colour coded segregation	17		
3.3 Sharps	19		
3.4 Segregation for recycling	19		
3.5 Transport overview	20		
<b>4. Waste policy</b>	21		
4.1 What is a waste policy?	21		
4.2 Audits	21		
4.3 Training	23		
4.4 Accidents and incidents	23		
4.5 Consultation	23		

## Executive summary

This guidance has been written to support RCN members (health care assistants, nurses and midwives) with the management of waste generated as part of their role, regardless of the practice setting where they provide care. It represents a revision of previous RCN guidance (RCN, 2007) and has been developed with support from RCN members, the UK Environment Agencies, Vehicle Certification Agency and the Department of Health (England). Although written to support all RCN members, as well as RCN learning representatives, the term health care worker has been used throughout to indicate that waste management is the responsibility of all staff regardless of their role or practice setting.

A primary aim of the guidance is to support members in the risk assessment of all waste produced to ensure it is classified appropriately. It challenges the historical practice of classifying waste as infectious simply on a 'just in case' basis, based on the findings of the RCN *Freedom of information report on waste management* (RCN, 2011) and the revised national guidance *The safe management of health care waste* (DH, 2011) (referred to as the waste manual) which replaces *HTM 07-01* (DH, 2006)

Key issues addressed in this guidance include:

- the need for a greater focus on the waste hierarchy and environmental impact of waste generation and management within health, social and home care
- use of the terms clinical waste, offensive waste and health care waste
- support for health care staff to strengthen their confidence in assessing waste properties
- increased use of the offensive waste stream based on robust risk assessment by health care staff at the time waste is generated; specifically this includes waste generated from screened populations (such as maternity and blood transfusion wastes) previously classified as infectious due to the presence of blood or body fluids
- information for staff and managers in community settings where waste is produced in the patient's home
- waste audits, including pre-acceptance audits (England and Wales) required for waste contractors.

This guidance recognises the different requirements that arise as a result of the devolved UK health care systems.

### Recommendations

- Organisations should consider the value of appointing or sharing dedicated waste managers to work within and across organisations to address waste management issues, and improve waste outcomes to deliver financial, environmental and health benefits.
- The established guidance on the compaction of offensive waste has been reviewed. *The safe management of health care waste manual* acknowledges that new technology can make compaction of offensive waste possible under the right conditions. This new guidance, reflects the changes to legislation enabling the compaction of non-hazardous waste without the need for a permit or exemption from permitting. If a protocol can be established with support from the Environment Agencies and HSE/Northern Ireland Health and Safety Executive (NIHSE) this processing enhancement may support and increase the use of the offensive waste stream.
- Training for staff on waste management should be strengthened with clear expectations made during induction and support for staff to implement use of the offensive waste stream.
- All health care organisations should provide regular board reports on waste issues, including the amounts, types and costs of waste generated, so that improvements can be identified over time.
- Health care organisations should consider identifying and supporting local waste leads within their structures at divisional, directorate or unit levels, to act as local resources and champions for improving waste classification and environmental issues.

# Introduction

The safe management of health care waste is the responsibility of every health care professional. All staff must understand how waste should be classified, segregated and stored prior to collection and treatment or disposal. This is driven by the need to reduce environmental impact, comply with waste regulations and other regulatory standards such as the *The Health and Social Care Act 2008: Code of practice on the prevention and control of infections and related guidance*, known as the *Code of practice* (DH, 2010), and reduce costs associated with waste management.

This guidance builds on the previous RCN publication *The safe management of health care waste* (RCN, 2007) and uses practical examples to support health care workers to properly manage the waste produced as part of their everyday activities in a safe and efficient manner. Throughout this publication you, the reader, will be referred to as the 'waste producer'.

This guidance replaces the previous RCN waste guidance and is applicable to all nursing and midwifery staff across the UK in relation to their role as producers of health care waste.

A number of case studies are included in this guidance to illustrate examples of issues in practice that need to be considered, and how changes to practice have been implemented to improve efficiency and compliance with regulatory requirements.

## Update to Health Technical Memorandum 07-01 (2006) and previous RCN guidance

*The safe management of health care waste manual* (DH) was published in April 2011 to replace HTM 07 01. The key areas of focus include:

- legislation updates
- the importance of the waste hierarchy and the elimination, minimisation, recycling and recovery of waste
- the carbon impact of waste management associated with transport and treatment/disposal arrangements
- practical advice and examples for classifying waste, in particular the infectious and offensive waste streams, including case studies to highlight best practice.

## Note on the *The safe management of health care waste 2011* and devolved countries

Although *The safe management of health care waste 2011* is relevant to all four UK countries; some countries have adapted the guidance to suit their devolved health systems and therefore differences do exist with respect to some practices and the colour coding of waste containers. This RCN document adheres to the principles of waste segregation and management that are applicable to all UK countries. Readers should familiarise themselves with their national guidance documents, and where differences may occur.

Note: This guidance acknowledges that *The safe management of health care waste* Version 2 (DH, 2012) was published in May 2012. The RCN is satisfied that this updated RCN guidance does not change the emphasis or focus of waste management but expands, updates and clarifies, without changing the issues covered in the Department of Health document.

## Background

Health care organisations and facilities produce many different types of waste, some of which may be classified as hazardous. The management of waste presents health care organisations with numerous challenges, including complying with the law, but also offers opportunities for controlling the quantity and cost of waste and ensuring the most appropriate treatment methods are used to recover resources (eg, recycling) whilst ensuring infectious waste is made safe.

The most common type of waste produced in a health care facility is 'mixed municipal waste'; in other words, items similar to that produced in the home (like food, packaging and newspapers) and not specifically related to health care. The hazardous waste produced during the provision of health care will usually be classified as such based on any risk of infection, hazardous properties in certain medicines, or if the waste contains or is contaminated with hazardous chemicals. This is explained in more detail later in this guide.

Some health care waste is classed as hazardous because it is considered to have, or may have, infectious properties. For the safety of all health care and waste management personnel, it is essential to classify these wastes correctly and segregate them from other types of wastes. This

## 1

document provides advice on how this can be achieved. Infectious wastes must be packaged and transported safely to either incineration or alternative non-burning treatment plants.

There is evidence to suggest a large quantity of health care waste is classified as infectious and therefore hazardous, when it actually does not present a risk of infection and could be classed as offensive waste – in other words, non-hazardous health care waste. If managed carefully, the offensive waste stream can introduce significant cost savings, reduce carbon use from waste transport, and ensure compliance with waste regulations.

#### RCN Health care waste survey (RCN, 2011)

In 2011, the RCN published the findings of its health care waste survey. The *Freedom of information report on waste management* (RCN, 2011) presented findings relating to the waste management of three categories of bagged waste in health care settings; municipal waste (non-hazardous), offensive waste (non-hazardous) and infectious waste (hazardous). The report revealed it cost over £65 million to manage these wastes, of which 60 per cent was classified as municipal, 39 per cent was classified as infectious and just one per cent was classified as offensive waste. Key findings of the report included a potential year-on-year saving of approximately £5.5 million per annum for the NHS if the reclassification of 20 per cent of infectious waste as offensive were to be realised.

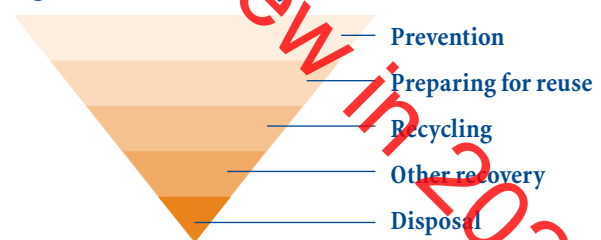
## Waste terminology

### 1.1 What is waste classification?

The principles of waste classification are set out in the European Waste Framework Directive. It sets the basic concepts and definitions related to waste management, eg, for hazardous waste, and lays down important waste management principles including the waste hierarchy. In simple terms the waste hierarchy ranks the various waste management options in order of environmental impact. These principles are now enshrined in UK regulation and policy, for example the Waste (England and Wales) Regulations and Waste (Scotland) Regulations. It seeks to avoid waste generation in the first instance, followed by a reduction of the quantity that requires disposal (eg, landfill) after it has been generated. It also provides an order of preference for waste management options in order to minimise the quantity for disposal (see Figure 1.1).

Ideally, these principles should be applied wherever waste is produced – in our own homes as well as to waste produced in health care settings.

Figure 1.1 Waste hierarchy



The main principles of waste hierarchy are:

- waste should be prevented or reduced at source as far as possible; for example, ensure your equipment suppliers use as little packaging as possible to prevent waste
- where waste cannot be prevented, waste materials or products should be reused directly or refurbished and then reused; a good example of this is redundant equipment or furniture
- waste materials should be recycled or reprocessed into a form that allows them to be reclaimed as a secondary raw material; for example, segregate glass and cardboard for collection

- where useful secondary materials cannot be reclaimed, the energy content of the waste should ideally be recovered and used as a substitute for non-renewable energy resources; for example, offensive waste can be sent to an energy-from-waste facility
- only if waste cannot be prevented, reused, recycled or recovered, should it be sent for disposal and this must be undertaken in a controlled manner. Following treatment or incineration to remove infection risk, some waste is still sent for landfill, although this is changing and more alternative options are becoming available.

For nurses and other health care workers involved in purchasing or ordering supplies, this means becoming aware of the implications of a reduction in packaging of items (where appropriate) to support recycling or production of waste in the first place. Health care staff should also consider a holistic assessment of decisions to purchase single use items such as curtains, bedpans, and other medical equipment, to ensure that cost analyses take into account not just ease of decontamination but the cost (financial and environmental) of waste disposal over time.

### Case study 1

#### Back to basics – intravenous antibiotic administration by bolus rather than infusion offers both cost and carbon savings across the NHS

The following case study has been provided by Mary Thomson, Renal Nurse, Queen Margaret Hospital, NHS Fife, Scotland.

As part of NHS Fife's strategy to improve the carbon footprint of renal services and compliance with legislative requirements, a study was undertaken to determine if it was possible to reduce financial costs in the renal unit by substituting IV infusion for bolus administration in all suitable antibiotics and to change practice to bolus administration where possible.

The renal unit at QMH comprises of 20 dialysis stations and 24 inpatient beds and serves a population of 350,000. Prior to the study all antibiotics were administered by infusion, some pre-prepared in mini bags for administration. A retrospective analysis of antibiotic use was undertaken between October 2009 and September 2010 (antibiotics that require infusion were excluded). Savings were calculated per pound and in kgCO<sub>2</sub>e\* and outcomes of the study measured. The cost of consumables per dose for antibiotics safe to administer for bolus was estimated as below.

\*CO<sub>2</sub>e is a measure used to compare the emissions from various greenhouse gases based upon their global warming potential.

Consumables/ Cost (£)	Infusion	Infusion (mini bag)	Bolus
Administration set	1.38	1.38	
100mls Sodium Chloride/Dextrose	0.35		
10ml L/L Syringe	0.12		0.12
21g Needle x 2	0.04		0.04
10mls NaCl/Water	0.05		0.05
Alcohol wipe x 2	0.01		0.01
Total (£)	1.95	1.38	0.22

Consumable costs for the study period were estimated as below:

Oct 2009 – Sept 2010	Renal unit (£)	Mini bags (£)
Ward 20	1,003	1,172
Ward 21	115	457
Total doses	4,546	1,629
Cost/year	8,864.70	2,248.02
Total cost (£)	11,112.72	

A comparison of costs for bolus and IV infusion identified potential savings of approximately £10,000:

IV Infusion (£)	IV Bolus (£)	Saving (£)	Disposal (£400/tonne)	Total predicted saving (£)
11,112.72	1,358.50	9,754.22	165	9,919.22

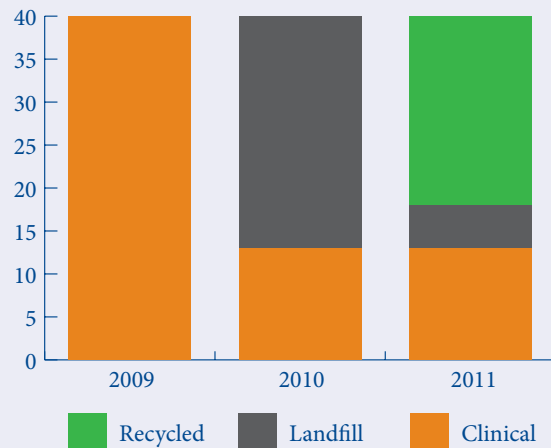
A further saving of £7,065.33 was identified by not purchasing mini bags. This resulted in an estimated saving of £17,060.89 annually based on current figures.

From a UK perspective, the potential cost savings (financial and carbon) estimated on activity represented in the UK Renal Registry 13th Annual were identified as £2 million and 1.3million kgCO<sub>2</sub>e.

This small study has highlighted financial, carbon, staff and patient benefits of changing to bolus antibiotics and the potential for further savings if adopted across other disciplines. However, successful changes in practice require investment in education and training of staff, the provision of a suitable drug preparation area, clear policies and procedures, and measurable outcomes.

As a result of this work staff in the unit have adopted the change in practice and expressed a preference for this way of working. It has resulted in savings to staff time which means more contact time with patients. The IV access site observation has improved as practice has adopted bolus administration and a reduction in volume of drugs and waste has resulted.

#### Improved waste segregation



## 1.2 Health care waste

Health care waste is produced by organisations providing health and social care, or in a person's own home where health and social care is provided. It can include bandages, swabs, sharps, blood, medicines and incontinence pads.

## 1.3 Hazardous waste

Hazardous waste is defined in the revised waste framework directive, and the various sets of regulations current in the UK incorporate that definition into law for the relevant country. In Scotland these are referred to as special rather than hazardous wastes. Put simply, waste items, or components of that waste, that can cause harm to the environment or human health may cause the waste to be classified as hazardous.

This guide aims to provide you with support when making an assessment, considers only health care wastes, and gives you examples which you will be familiar with.

Common types of hazardous waste found in everyday health care activities are detailed in Section 2 (Table 2.1), but here

are some typical examples:

- soft waste, such as dressings from an infected wound, are considered hazardous because there is a risk of infection to people coming into contact with it
- residues of hazardous medicines – such as cytotoxic or cytostatic medicines – are always hazardous because they present a risk due to the presence of one or more specific hazardous properties (see cytotoxic/cytostatic medicines below)
- a used hypodermic needle or suture needle (potentially infectious properties and in the case of the former, hazardous medicines may also be present)
- incontinence pads used by a patient with a gastrointestinal or urinary tract infection.

Because these waste items and other similar wastes are considered to be hazardous, it is essential we classify and treat them as such to ensure the safety of health care workers, waste management contractors, and the general public. We also have a legal duty of care to treat these items as hazardous wastes and must comply with the regulations specifying how this is achieved.



### Cytotoxic and cytostatic medicines

A cytotoxic or cytostatic medicine is defined as any medicinal product that possesses any one, or more, of the following hazardous properties. These may be:

- toxic (Hazard Code H6)
- carcinogenic (Hazard Code H7)
- toxic for reproduction (Hazard Code H10)
- mutagenic (Hazard Code H11).

The above definition is wide, capturing many hormone-based preparations, and microbial substances such as chloramphenicol eye drops, as well as cancer-treating agents. The pharmacy supplying your medicines will usually hold a list of those classified as cytotoxic and cytostatic; if you are unsure please ask them for further advice. If this is not possible or the hazardous properties cannot be determined, the product should be assumed to be cytotoxic or cytostatic.

Note: hazardous properties are specified in the *EU Waste Framework Directive*.

Refer to *The safe management of health care waste* (DH) for examples of cytotoxic/cytostatic wastes.

## 1.4 Clinical waste

The term clinical waste is common place in the health care environment and is defined within the Controlled Waste Regulations as waste from a health care activity (including veterinary health care) that:

- contains viable micro-organisms or their toxins which are known or reliably believed to cause disease in humans or other living organisms
- contains or is contaminated with a medicine that contains a biologically active pharmaceutical agent
- is a sharp, or a body fluid or other biological material (including human and animal tissue) containing or contaminated with a dangerous substance (based on regulations for the classification, packaging and labelling of dangerous substances) [summarised].

It also includes waste of a similar nature from a non-health care activity.

Most clinical waste is classified as hazardous. The two key exceptions to this rule are:

- *segregated non-cytotoxic and non-cytostatic waste medicines, classified as non-hazardous*
- *clinical waste from municipal sources that are not in anyway directly or indirectly associated with health care (for example, needles and swabs from cosmetic body art or piercing and drug litter) and that are similar to household waste. In short, these are classified as non-hazardous due to the coding system used to classify wastes.*

## 1.5 Offensive waste

Offensive waste (sometimes referred to as hygiene waste) is waste that is non-infectious but may cause offence due to the presence of recognisable health care waste items, body fluids, or odour.

The term offensive waste is defined within the Controlled Waste Regulations as waste that:

- is not clinical waste
- contains body fluids, secretions or excretions
- is classified under specific codes in the List of Wastes Regulations as follows [summarised]:
  - waste whose collection and disposal is not subject to special requirements in order to prevent infection (18 01 04 or 18 02 03)
  - other municipal (household or similar) separately collected fractions not otherwise specified (in this case used for offensive waste) (20 01 99).

## 2

## Waste assessment and classification

### 2.1 Assessing waste for segregation

The *safe management of health care waste manual* (DH) provides a framework to guide health care workers through the process of making a waste classification assessment. By adopting a unified approach for classification of health care waste, waste producers can be confident they are complying with all legal requirements whilst promoting good health and safety practices.

Where health care waste is assessed and found not to have medicinal, chemical or infectious properties it may be classified as offensive waste. However, all health care waste items must be assessed by the waste producer (you) at the time of production for these properties. This can be done quickly and simply as you go about your daily role.

The assessment for infectious properties should include your clinical judgement and available documentary evidence, such as patient records, to ensure the correct waste classification is used.

#### Offensive waste

Much health care waste can be classed as non-hazardous offensive waste by using the assessment process outlined in this section. If, after completing this, the health care waste item is found not to have medicinal, chemical or infectious properties it may be classified as non-hazardous offensive waste. The term offensive is used because some items of non-hazardous health care waste may cause offence to those coming into contact with it – for example, incontinence or sanitary pads (previously assessed to be non-hazardous).

Historically, many health care staff have segregated waste as infectious in an attempt to either be extra cautious ‘just in case scenario’, limited provision of segregation options (containers) or because there is a lack of confidence in making decisions on waste classification for the same reason. Nursing and midwifery staff should be reassured

that using the assessment framework outlined in [Table 2.1](#) will support decision making on the segregation of waste and reduce any need for a default infectious waste position to be in place.

One of the main reasons for separating out the offensive waste stream is to reduce environmental impact, partly by introducing carbon savings from reduced transport requirements (this waste can be compacted under certain strict conditions). You will also ensure you are classifying your wastes correctly, which is a legal requirement.

Segregating waste into the offensive waste stream does not place the public or other health care workers at increased risk, even if the waste contains non-infectious faeces, urine or blood and body fluids from a screened population – see [Table 2.1](#). There is also considerable potential for cost savings, which can be made through diverting this waste from disinfection or incineration, which is required for infectious waste.

As outlined in the introduction, the RCN published its *Freedom of information report on waste management* in 2011 which identified the potential cost savings which could be made through improved classification of health care waste. Key findings of the report included a potential year-on-year saving of approximately £5.5 million per annum for the NHS if the reclassification of 20 per cent of infectious waste as offensive were to be realised.

This clearly demonstrates the value of correct classification of health care waste and it is hoped that this guidance will enable nursing staff to feel confident that they can achieve this through following the assessment process provided in this guidance.

#### Medicinal

Medicinal waste can be defined as either medicines no longer required – for example, unused or out-of-date stock – or items contaminated with medicines. You will find waste medicines in a number of forms; for example, solid (pills, powders or capsules), creams, liquids (bottled formulations or ampoule contents) or aerosols. Waste contaminated with medicines will include empty containers with drugs remaining, used syringe bodies, wipes used to absorb medicines, or used infusion bags.

To assess for **medicinal** properties, you must consider whether the waste is a medicine or is contaminated with medicines. Whenever there is medicine present, even small quantities such as a few drops remaining in a container, the waste item must be classified and treated as medicinal waste.

When we classify waste as a medicine or contaminated with medicine, there are three main types to consider, as follows:

- **Hazardous medicines (cytotoxic or cytostatic)** – these are medicines that have one or more of hazardous properties (toxic, carcinogenic, toxic for reproduction or mutagenic) and are classified as hazardous waste. These include most hormonal preparations, some anti-viral drugs and some antibiotics. Because they are classified as hazardous waste, the regulations state they must be segregated from other medicines. If you are unclear whether a medicine is cytotoxic or cytostatic, check with the pharmacy.
- **Non-hazardous pharmaceutically active medicines** – these are pharmaceutically active (for example, most antibiotics) but do not have any of the hazardous properties associated with cytotoxic or cytostatic medicines. Most of these will be non-hazardous, but it is worth checking they contain no other hazardous properties (for example, some are flammable, some may have irritant properties). Once again, if unsure you can check with the pharmacy.
- **Non-hazardous, non-pharmaceutically active medicines** – some medicines are not pharmaceutically active *and* have no hazardous properties (for example, infusion bags containing saline or sugar solutions). These will be classed as non-hazardous waste.

If you have decided your waste has medicine present you must choose the correct waste container for disposal. Advice on segregation and colour coding is provided in [section 3](#). If your waste is not a medicine or contaminated with medicine, you need to consider whether there any chemicals present.

## Assessment for chemical properties

Waste chemicals include laboratory reagents, auto-analyser cartridges from laboratories and wards, photochemicals, hand gels, disinfectants, cleaning chemicals, and therapeutic chemicals and their contaminated packaging. These wastes should never be placed in any clinical, offensive or mixed municipal waste stream. Your waste manager or person responsible for waste should advise on any segregation necessary prior to collection.

For empty alcohol hand gel containers, these can be rinsed, the washings flushed to foul sewer and the clean container segregated for recycling. You or the person responsible for waste must check the alcohol gel safety data sheet to ensure the gel does not contain any chemicals called Siloxanes, these can cause damage to the sewerage system and should be segregated and collected separately for specialist disposal. For further information refer to UK Water's *National guidance for healthcare waste water discharges* (version 1, 2011)

In some instances, clinical waste items may be produced that contain or are contaminated with chemicals used in the delivery of health care. Laboratories and other areas of medical practices may produce samples or diagnostic wastes that are infectious and also contaminated with chemicals. Examples might include:

- anatomical or pathology specimens or samples preserved in chemicals (for example formaldehyde or alcohol)
- sample vials or diagnostic kits containing chemicals
- sharps or other clinical waste items contaminated with therapeutic or laboratory chemicals
- materials used to clean up biological spills that are contaminated with chemical disinfectants.

The yellow infectious waste stream is used for these wastes, ie, infectious but which has an additional characteristic that means that it must be incinerated in a suitably licensed or permitted facility. Yellow bags are used for waste items that are infectious that are also medicinally/chemically contaminated.

The use of yellow bags is normally limited to a few specific departments that produce these items, eg, laboratories. Most wards in hospitals for example will normally only require an orange infectious bag waste stream to accompany the offensive and municipal waste streams. The difference

between yellow and orange waste bags is discussed on page 17, colour coded segregation of waste.

If you have decided your waste is contaminated with chemicals you must choose the correct container for disposal. Advice on segregation and colour coding is provided in [chapter 3](#). If your waste is not contaminated with chemicals, you need to consider does the waste present a risk of infection.

### Infectious waste

Health care staff must make the assessment for infectious properties of waste at the time the waste is generated only and not assume a just in case approach. Only the waste producer (that is you, generating the waste as a result of your activities) decides what type of waste it is in line with the risk assessment. The following assessment will help support your decision making.

One example may be when a patient develops diarrhoea, however the cause is not thought to be infectious or a sample does not identify an infectious cause. Any waste would therefore be classified as offensive. Any subsequent change to the patient's condition – for example, a subsequent positive sample for *C. difficile* toxin and the presence of diarrhoea, would require reclassification of waste as infectious from that point until the infection resolves.

The opportunity to classify maternity waste as offensive (providing no other suspicion of infection is present) for women who have been screened for blood-borne viruses antenatally and where there is no known indication of change to their status represents potentially significant financial and environmental savings as a result of reclassification to offensive waste.

**Table 2.1 Assessment for infectious properties**

Waste contains	Proposed general classification	Examples of waste	Exception to this rule
Urine, faeces, vomit and sputum.	<b>Offensive</b> (where risk assessment had indicated that no infection is present, and no other risk of infection exist).	Urine bags, incontinence pads, single-use bowls, nappies, PPE (gloves, aprons and so forth).	Gastrointestinal and other infections that are readily transmissible in the community setting (for example, verocytotoxin-producing <i>Escherichia coli</i> (VTEC), campylobacter, Norovirus, salmonella, chicken pox/shingles) <sup>1</sup> . Hepatitis B and C, HIV positive patients – only if blood is present <sup>1</sup> .
Blood, pus and wound exudates.	<b>Infectious</b> unless assessment indicates no infection present. If no infection, and no other risk of infection, then offensive.	Dressings from wounds, wound drains, delivery packs.	Blood transfusion items. Dressings contaminated with blood/wound exudate assessed not to be infectious. Maternity sanitary waste where screening or knowledge has confirmed that no infection is present and no other risk of infection exists.

<sup>1</sup> Potential hazards from the use of cytotoxic and cytostatic medicines may also be relevant in some instances and with some drugs. This would also prevent the waste being considered offensive.

Health care staff must make the assessment for infectious properties of waste at the time the waste is generated only and not assume a just in case approach.

Once you have decided if the waste should be classed as infectious waste or not, advice on segregation and colour coding is provided in [section 3](#). If your waste is not classified as infectious waste and does not contain chemicals, medicines or items contaminated items with either, you can consider classifying it as offensive waste.

### Case study 2

The following case study is not provided to demonstrate best practice, but to present a real scenario for how these wastes are managed in the community and the issues that need to be considered.

In Berkshire Healthcare Foundation Trust (East Community Health Services), the community health care staff have a flow chart to follow that supports their decision making when classifying waste (see Appendix A). This was developed in 2009 to comply with *The safe management of health care waste* (HTM 07 01) using the orange infectious waste stream and the yellow tiger striped offensive waste stream.

A solution was required to manage vacuum assisted wound drainage waste. This equipment is commonly used in the community and canisters containing the exudate are fully enclosed, sealed and contain absorbent powder so the exudate turns into a gel enabling it to be disposed of through the orange bag waste stream.

In the east of the county, the area is served by three different local authorities (LAs), each of which has a system for the collection of health care waste from residents in their area. There is also a small overlap area served by a fourth LA. It was agreed that following treatment, and with patient consent, community nurses would request a waste collection from the patient's home by fax and provide the first bag of the appropriate colour. On collection of the waste, the bag would be replaced like for like until no longer required.

Templates for requests were devised for the commencement of clinical waste collections, change of waste stream, and discontinuation of collection.

While this process has been successful in terms of supporting correct segregation of waste, collection from homes remains challenging. Waste has to be left where it can be seen by the LA waste collector; if the bags are placed inside a bin they are not identified by the collector and missed, resulting in a delay to collection. Where the waste is kept between collections is up to the patient – a popular choice (often as a result of smelly dressings) is a garage or shed. Patients without such storage places (including those living in flats) may face a dilemma due to the need to remove access to waste by vermin or children. As the waste bags are often left visible outside of the property, this raises issues of safety, privacy and dignity, and even confidentiality, by those requiring collections.

This scenario highlights some of the complexities surrounding waste management in the community sector and how some issues can be resolved through joint working between health care organisations, patients, LAs and waste collection companies. It does however demonstrate there is no one size fits all solution due to individual patient circumstances and the decision to make choices available to patients. The importance of working in partnership with others, especially LAs for community health care waste management is crucial at a time when more and more patients are being cared for in their own homes.

### Case study 3

#### Appointment of first 'Green nurse' in Scotland highlights improvements in waste management with financial and environmental benefits

NHS Fife implemented a unique project to lead on improving waste engagement in renal services in response to concern and awareness of the impact of health care on pollution, waste and harmful chemicals. One single dialysis session (patient) is estimated to generate 2.9kg of waste, and with 13,884 treatments per year at Queen Margaret's Hospital in Dunfermline, Fife, this equates to 40.3 tonnes per year. Waste includes large volumes of plastic, retention fluid (0.9 per cent sodium chloride), paper and packaging (Thomson and Chigaru, 2010).

The project had a number of elements:

- staff questionnaire (see [appendix B](#)) – this identified staff practices on waste management, both at home and at work
- waste watching weeks – these weeks allowed the evaluation of different aspects of waste management within the dialysis setting
- implementation of change – this involved educational workshops to motivate and educate staff, and was considered an essential part of the project.

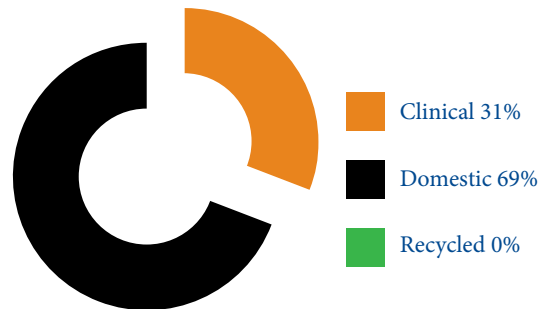
Improved procedures were devised and implemented including the introduction of online priming and reinfusion procedures, reducing the size of infusion bags, placement of all paper and plastic into the municipal waste stream, and disposal of the six litre dialysate canisters into the domestic waste stream. Additional changes included disposing of the extracorporeal circuits into the infectious waste stream, and drained bicarbonate infusion bags into the municipal waste stream.

Diverting non-infectious waste into the municipal waste stream allowed for new and greater recycling to take place, further reducing the amount of waste disposed of via landfill. Comparisons of the destination of waste generated within the dialysis unit in January and April 2010 are illustrated opposite.

Destination of waste per HD session – January 2010



Destination of waste per HD session – April 2010



Domestic waste now recycled



Mary Thomson, Scotland's first 'Green nurse'

## 3

## Segregation and storage

### 3.1 Introduction to waste segregation

Once you have classified waste, the next step is to choose the correct waste container. This may be a bag for soft wastes or more rigid container for sharps or medicinal wastes. Segregation is essential for compliance with waste regulations, promoting good health and safety practice at work, and to help control management costs.

To ensure effective segregation, colour coding of waste containers (for example, waste sack holder/containers, sharps receptacles) should be used. *The safe management of health care waste manual* provides suggested colours for waste containers which can be used to quickly identify the types of waste which should be disposed of within them.

**Colour coding for waste containers is important as it makes clear the end disposal/treatment route of the waste.**

Whichever colour is used, the waste producer is subject to their duty of care (a legal requirement), and should ensure any container is clearly labelled in a manner that makes the subsequent holder (for example, a porter or waste handler/collector) aware of its contents. Why? There have been instances where pharmaceuticals and anatomical waste were packaged in rigid yellow bins without clear identification of contents, increasing the risk of the waste going to the wrong disposal route.

Once waste has been segregated into the appropriate containers, these containers should be kept separate and stored together by type at the local ward/department level. For staff working in a hospital or health care facility, waste is usually collected from the ward or treatment area and placed in a local secure waste storage area prior to being moved to a larger central waste collection point (usually a secure fenced yard area in the hospital) by porters. Here, waste awaiting collection in the large wheeled rigid carts or wheelie bins must not be mixed for transporting as there is a risk the waste may go to the wrong disposal route (for example, infectious waste requiring incineration being sent for disinfection treatment).

If waste is mixed, you or the person in charge must ensure that the waste documentation (the waste transfer note or hazardous waste consignment note) records the number and type of containers present in each rigid cart, and not just the number of carts for collection. For example, indicating there are three yellow-lidded sharps receptacles present in one specified cart enables the waste contractor to find and remove them. Knowing that there are an unknown number of sharps receptacles hidden somewhere in 50 carts does not help the waste contractor. This requirement to document waste for collection may apply to other community settings, such as GP premises, clinics, or walk-in centres.

Section 3.2 of this guidance outlines the colour codes recommended in *The safe management of health care waste manual*, and provides some information on the type of container which should be used for the safe and practical containment of various types of health care waste.

Note: For members working in Scotland they should also refer to Scottish Health Technical Note 3, *NHS Scotland Waste management guidance*.

## Case study 4

### Removing bins from patient rooms (Norfolk and Suffolk NHS Foundation Trust)

The following case study explores the pros and cons of implementing a policy for the removal of waste bins from patient rooms.

When planning for the opening of a newly-built unit with 36 single en-suite rooms, specially designed for the care of people with dementia, the decision was made to plan care processes to support a low carbon and environmentally-friendly building. This included the removal of waste bins from patient rooms and adjoining wet rooms. To aid this alternative system, a process of placing all waste generated within the rooms into pulp products and carrying them to the sluice room for segregation was implemented. Once in the sluice, waste is separated into the correct waste bags or systems utilising incontinence pad macerators and pulp products macerators supported by rain water collected via the building's water re-generation system.

#### The advantages of this decision are:

##### CO<sub>2</sub> emission reduction

This is a modern building that has a number of sustainable, environmentally friendly features to reduce the building's carbon footprint. By removing bins from patient rooms, CO<sub>2</sub> emission and the demand on natural resources is reduced by not purchasing bins and bin liners. There is also a reduction in waste generation.

##### Odour reduction

When incontinence products are placed, even for a short time, in a bin, the room can smell. By removing bins, there is no build up of used incontinence products therefore reducing the potential for the room to be malodorous. There is also a risk that the service user may inappropriately remove or spread the contents of the bin through the environment, posing an infection and aesthetic risk to other service users and visitors.

##### Cost reduction

The obvious cost reductions are the purchase of fewer bins and bin liners with the knock-on effect of a reduction in waste generated and the ensuing costs of removing and treating waste. Some of the less obvious cost reductions include the reduction in health care worker time to empty and clean bins.

##### Damage to the building reduction

Metal bins have been known to damage the fabric of buildings. Incidents have identified that they have been used for propping open doors which damages the surface of the doors, being placed too close to walls and damaging the plaster and can rust leaving stains on the floor, especially in wet rooms. The absence of bins in patient rooms reduces the need for continuous repairs to walls, doors and floors.

#### The disadvantages of this decision have been described as:

##### Increased cost of consumables

The ongoing cost of using pulp products has yet to be balanced against the one-off cost of bins and the ongoing costs of the bin liners.

##### Increasing sewage

Without the innovative rain water collection system installed in this unit, there would be an increased use of water and there is an increase in the amount of sewage generated by this system.

##### Increase in time for disposal of waste

This process means that instead of staff putting waste directly into a bin at the bedside, they must carry the pulp product to the sluice room for segregation and disposal. This can take several minutes.

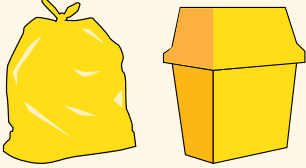


##### Overcoming staff reluctance to change

Following a small amount of reluctance to change at the beginning, most staff now see the overall benefits of not having bins in the bedrooms and wet rooms.



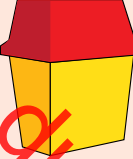
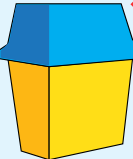



## 3.2 Colour coded segregation

**Table 3.1 Colour coded segregation proposed in the *The safe management of health care waste manual for the health care sector in the UK***

Colour coding	Waste description and disposal/treatment type	Container type	Examples
<b>Yellow</b>	Infectious waste which must be sent for incineration at a suitably authorised facility. It must not be sent for alternative treatment.	Yellow bag or rigid yellow-lidded container or sharps receptacles. 	Waste which is classified as infectious (contaminated with bodily fluids where the assessment process leads you to believe the waste poses a potential infection risk, and there are also medicines or chemicals present). Examples are: <ul style="list-style-type: none"> <li>• infectious waste contaminated with chemicals</li> <li>• chemically contaminated samples and diagnostic kits</li> <li>• infectious waste contaminated with medicines</li> <li>• laboratory specimens.</li> </ul>
<b>Orange</b>	Infectious waste which can be sent for alternative treatment to render it safe prior to disposal.	Orange bag or orange-lidded, rigid yellow sharps receptacles. 	Waste which is classified as infectious (contaminated with bodily fluids where the assessment process leads you to believe the waste poses a potential infection risk), such as: <ul style="list-style-type: none"> <li>• dressings</li> <li>• bed pads</li> <li>• bandages</li> <li>• protective clothing (for example, gloves or aprons).</li> </ul> <p>Note: If you do not believe the waste presents an infection risk and there are no medicines or chemicals present, use the offensive waste stream.</p>
<b>Purple</b>	Cytotoxic or cytostatic medicine waste or any items contaminated with these must be sent for incineration at a suitably authorised facility.  For unused/redundant medicines, refer to <i>The safe management of health care waste manual</i> .	Yellow/purple bag, purple bag or rigid yellow purple-lidded medicine container or rigid yellow purple-lidded sharps receptacles. 	Waste consisting of, or contaminated with, cytotoxic and/or cytostatic medicines, such as: <ul style="list-style-type: none"> <li>• medicine containers with residue of cytotoxic or cytostatic medicines (bottles, infusion bags or syringe barrels)</li> <li>• items contaminated with cytotoxic or cytostatic medicines (swabs)</li> <li>• used sharps from treatment using cytotoxic or cytostatic medicines.</li> </ul>

The biobin may also be used in accordance with this colour coding system, where provided.

Colour coding	Waste description and disposal/treatment type	Container type	Examples
<b>Tiger</b> 	Offensive/hygiene waste which may be sent for energy recovery at energy from waste facilities. These wastes can also be sent to landfill if no other recovery or recycling option is available.	Yellow and black striped bag. 	Health care waste classified as non-hazardous, ie where the assessment process leads you to believe the waste does not pose an infection risk. These can be items contaminated with bodily fluids such as: <ul style="list-style-type: none"> <li>• stoma or catheter bags</li> <li>• incontinence pads</li> <li>• hygiene waste</li> <li>• gloves, aprons, maternity waste where no infection risk exists</li> <li>• blood contaminated items from screened community.</li> </ul>
<b>Red</b>	Anatomical waste sent for incineration at a suitably authorised facility.	Red-lidded, rigid yellow receptacles. 	Anatomical waste, which includes: <ul style="list-style-type: none"> <li>• recognisable body parts</li> <li>• placenta.</li> </ul>
<b>Blue</b>	Non-hazardous medicinal waste for incineration at a suitably authorised facility.  Refer to <i>The safe management of health care waste manual</i> .	Blue-lidded, rigid yellow receptacles. 	Waste medicines such as: <ul style="list-style-type: none"> <li>• unused non-cytotoxic/cytostatic medicines in original packaging</li> <li>• part empty containers containing residues of non-cytotoxic/cytostatic medicines</li> <li>• empty medicine bottles.</li> </ul>
<b>Black</b>	Domestic/municipal waste to be sent to energy from waste facilities or landfill.	Usually a black bag. 	Items which you would find in the normal household waste stream, such as: <ul style="list-style-type: none"> <li>• food waste</li> <li>• tissues.</li> </ul>

### 3.3 Sharps

Sharps found in the health care setting include hypodermic syringe needles, suture needles and scalpels. All sharps must be disposed of in suitable sharps receptacles and require assessment for the presence of medicines, such as cytotoxic or non-cytotoxic medicines.

Section 3.2 specifies the colour coding for sharps receptacles. It is common to see the lid of a sharps receptacles coloured to display the type of waste the container should be used for.

**Purple lidded** sharps receptacles should be used for sharps contaminated with cytotoxic and cytostatic medicines. The purple colouring indicates that the waste is hazardous and should be sent for incineration at a suitably authorised facility for these types of medicines.

**Yellow lidded** sharps receptacles should be used for sharps that are contaminated with non-cytotoxic and non-cytostatic medicines. The yellow colouring indicates that the waste should be sent for incineration at a suitably authorised facility.

**Orange lidded** sharps receptacles should be used for sharps that are not contaminated with medicines (such as phlebotomy sharps or shaving razors). The orange colouring indicates that the waste may be sent for alternative treatment, for example to be disinfected or autoclaved at a suitably authorised facility.

In practice, many health care organisations use a purple lidded sharps receptacles for cytotoxic/cytostatic sharps and yellow lidded sharps receptacles for all other sharps.



*A selection of typical sharps receptacles*

### 3.4 Segregation for recycling

Increasingly health care organisations are obliged to reduce the amount of waste sent for disposal, especially the types of waste that can be recycled if separately collected. This is because we need to make best use of our resources, reduce the environmental impact of waste, and landfill space is running out (refer to the waste classification on [page 6](#)). Many items of municipal type waste that have traditionally been placed in a black bag for disposal can now be collected and processed by waste contractors for reuse or recycling. This does require some effort in establishing separate collection systems and training staff in how to make best use of these. The case study that follows is an example of how the end result can make the effort worthwhile.

#### Case study 5

##### **Basildon and Thurrock University Hospital appoint a full time dedicated waste manager**

Since employing a full time dedicated waste manager, Basildon and Thurrock University Hospital has increased its recycling rate from one per cent to 60 per cent in just two years. The hospital began with the segregation and baling of cardboard for sale, followed by the capture of all scrap metals which are graded onsite to maximise value.

Having achieved this impressive level of recycling, the trust is now investigating further initiatives, including installing a small-scale materials' recovery facility (MRF) to capture an even greater quantity of established **recyclate** streams and introduce other streams for sale.

The number of waste streams used within the trust has increased from two (general and clinical) to over 20! Some staff members initially perceived the increase in segregated waste streams as an unnecessary burden, but when the financial and environmental advantages were communicated the logic of establishing the system was well received.

Waste management forms an integral part of the trust's induction programme. New staff learn the basic knowledge they'll need on a day-to-day basis, and know where to go to embellish this knowledge if required.

Employing a dedicated waste manager has allowed managers to concentrate on their responsibilities and expertise; for example, the portering department alone

saved over £110,000 in 2010-2011. Freed of some of his waste related responsibilities, the portering manager was able to redo his rosters and introduce an in-house labour system to assist department moves instead of hiring external moving companies.



Waste manager discussing waste issues with a member of staff

### Case study 6

#### Renal waste recycling – NHS Fife

A project to raise awareness and educate renal professionals on the 3Rs (reducing, reusing and recycling) within the work environment included the use of a staff questionnaire for completion by staff in NHS Fife. The questionnaire was developed to evaluate staff attitude towards effective waste management and practice, and to help identify aspects of minimising waste from dialysis treatment. A 96 per cent return rate was achieved and staff identified resources they felt would support their ability to recycle. This included more recycling points, more information, and having accessible colour coded waste bins. See [appendix B](#) for the staff questionnaire.

## 3.5 Transport overview

Health care organisations such as hospitals, clinics, and surgeries, are responsible for arranging the transport of health care waste off-site for treatment or disposal. Some of these health care wastes will be classified as dangerous goods because of the hazardous properties which they present (such as infectious waste or cytotoxic medicinal wastes).

Within your organisation there will be a person responsible for ensuring compliance with the transport and dangerous goods regulations, and they should ensure the correct containers with appropriate markings and labels are provided for you. If you are unsure whether the waste containers or labels you are using are the correct ones, especially for hazardous waste, contact this person for advice or ask your line manager.

The safe management of health care waste guidance provides detailed advice on the transportation of waste and the compliance requirements, and will be of help to nurses and other colleagues who need to understand the requirements for the safe and compliant transport of health care waste.

Further information on the transport of dangerous goods can be found at the following web sites:

- the Health and Safety Executive's *Carriage of dangerous goods manual* addresses enforcement policy for the regulators on some aspects of road transport affecting nursing staff ([www.hse.gov.uk](http://www.hse.gov.uk))
- the Vehicle Certification Agency's website provides guidance on a range of packaging issues ([www.dft.gov.uk/vca](http://www.dft.gov.uk/vca))
- the Department for Transport's website provides guidance and copies of authorisations ([www.gov.uk/government/policies/providing-effective-regulation-of-freight-transport](http://www.gov.uk/government/policies/providing-effective-regulation-of-freight-transport)).

Guidance for community nurses on the transport of health care waste can be found at [section 5.3](#) in this guidance.

## 4

## Waste policy

### 4.1 What is a waste policy?

All health and social care organisations should have a waste policy. The waste policy specifies how an organisation manages its waste and identifies who is responsible for this within the organisation.

Each policy document will vary in content and size, but common themes include a focus on environmental impact – for example, reducing the dependence upon landfill disposal, waste prevention or minimisation, specified targets for recycling rates, the safety of personnel producing or handling waste, and the potential for cost savings.

The organisation owns and produces the policy, so that each member of staff who deals with waste understands that the correct procedures must be followed to ensure waste is managed safely and in compliance with all relevant legislation. Each member of staff should be aware of the policy and understand how it impacts on their everyday activities. If you are not aware of the waste policy, or do not understand how it affects you, ask your line manager.

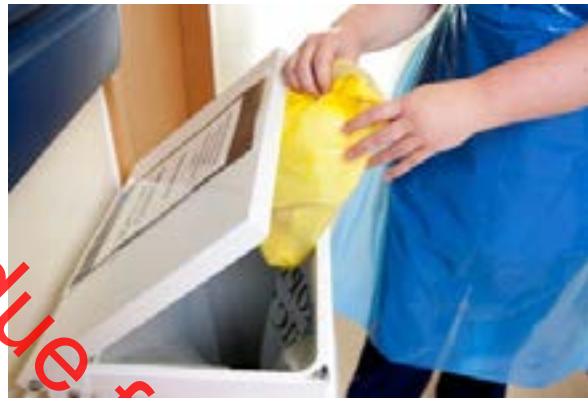
#### Case Study 7

##### Her Majesty's Inspectorate of Prisons

Within non-traditional secure health settings such as prisons or police custody suites it is equally important to ensure that good practice exists. Her Majesty's Inspectorate of Prisons uses expectations to measure the standards of quality and care in prisons relating to health care and nursing practice. There is specific reference to cleanliness of establishments that promote the health and wellbeing of people in custody. There is an expectation that these service settings also have the appropriate infection control policy and procedures in place. The National Aids Trust (NAT) recently refreshed and updated its guidance relating to blood-borne viruses in prisons (DH, 2011) and particularly refers to the prevention of the spread of infection and how to deal with exposure incidents.

### 4.2 Audits

Your local waste policy will specify how the organisation monitors its performance in managing its waste, and this can include audits. A waste audit is a system for checking waste is classified, segregated and stored correctly, as well as being prepared appropriately for transport before being treated or destroyed. This will usually include a check on the paperwork needed for waste management which is a requirement for all health care practices and a legal obligation.



*Audits will quite often highlight problems such as this – yellow bags of infectious waste from dressings appearing in municipal (black) waste bags*

This guide considers the common types of audit applied to health care practices – internal policy compliance, waste producer, and pre-acceptance audits.

#### Internal policy compliance audit

An internal policy compliance audit is usually undertaken by the person responsible for waste in the organisation, or by an independent company on behalf of that person. It involves the person carrying out the audit asking health care staff questions about how they manage waste, including classification, segregation and storage. They may also observe you and other staff during normal activities to see how you manage waste. The auditor will be looking to see if you make the correct classification for waste, place it in the correct container, and sign and date labels (if appropriate). This should not be seen as snooping, nor is the auditor trying to catch you or your organisation out. It is simply a means of checking things are done properly and if not, identifying how this can be changed to ensure it is improved in the future.

It is unlikely you will be questioned about other aspects of managing waste unless you have been identified as having additional responsibility for waste. For example, you may be involved in a waste administration activity such as completing the legal documentation accompanying the waste.

### Waste contractor audit

It is unlikely nursing staff will be involved in a waste contractor audit because this is more about how your waste is managed once it has been taken away from your work premises. This type of audit involves someone checking waste documentation and whether the contractor has the correct qualifications and authorisations to manage your waste legally. On some occasions you may be asked questions about your waste contractor and how they provide you with containers, or collect your waste. Once again this should not be considered as snooping, but merely a check to ensure all waste management activity is legal and is designed to safeguard human health and the environment.

### Pre-acceptance audit

In England and Wales, the Environment Agency provides guidance for holders of clinical waste environmental permits, *How to comply with your environmental permit: additional guidance for clinical waste, EPR 5.07*, available for download at: <http://publications.environment-agency.gov.uk>

This guidance provides your waste contractor with advice on how to ensure health care organisations are audited prior to delivery of the waste. It is the waste contractors legal responsibility to obtain something called a pre-acceptance audit report from all waste producers sending specified wastes to them for processing – in other words, your health care organisation for your waste. As you (the producer) know your waste better than anyone, your input and knowledge into this process is invaluable. This does not include waste arising at domestic premises or care homes that do not provide nursing care (or clinical or offensive wastes from non-health care facilities). It does however include the following:

- hospitals
- veterinary practices
- dental practices
- general practices and health centres
- community pharmacies
- ambulance trusts

- care homes that provide medical or nursing care
- any other medical practice.

The pre-acceptance audit focuses on local practice, procedures and documentation which enable the organisation to identify, segregate, package and label health care wastes, as specified in *The safe management of health care waste manual*, including as a minimum:

- a list or diagram of the different wards, departments, or functional areas that exist within the premises, identifying those that were included in the audit
- the date of commencement and completion of the audit, and description of the audit, the procedures employed, the auditors and their affiliation
- for each unit or area audited, identification of the waste items produced, the type (including colour coding), size and labelling of containers in use, the segregation practices, contents of a representative number of each type of container, and therefore waste composition
- the hazardous properties of wastes and its components (medicines, chemicals)
- where relevant, the audit must include examination of the segregation of waste containers placed in departmental and main storage areas, and bulk containers (for example 770 litre carts); this would normally be undertaken through the visual observation of contents and questioning of staff to establish practice
- a summary report indicating the findings for each area in the producer premises, each waste stream produced there, and highlighting any issues identified.

The frequency for pre-acceptance audits has been specified by the Environment Agency and is an annual requirement for large volume waste producers (greater than five tonnes per annum) such as acute or specialist trusts, every two years for medium volume waste producers (less than five tonnes per annum) such as vets, dentists, research laboratories, and every five years for other health care organisations such as GP surgeries.

### Pre-acceptance audits and you

As this is now a legal obligation in England and Wales, it is important that nursing staff follow the instructions on the correct classification and segregation of waste as part of their own legal duty of care. The discovery of incorrectly segregated waste at the treatment or disposal facility could result in a prosecution for non-compliance with waste and related regulations. If a detailed pre-acceptance audit is not

provided within the required timeframe, your waste contractor may refuse to collect the waste from your workplace. Please refer to CIWM (2014) for more information. See [references](#).

### 4.3 Training

The waste policy should specify the main waste management objectives and how the organisation's staff can be helped to achieve these. It is therefore important that all staff members' responsible for managing waste are fully trained and that training is tailored to the appropriate level of responsibility. Personnel delivering training should have experience in teaching and training, and be familiar with the risks and practices of health care waste management. This is particularly relevant in relation to the safe processing of infectious and other hazardous wastes.

Staff training tends to be in the form of a waste-related session within the induction process which provides an overview of the policy and procedures. This may be followed by a more detailed training module that is job-specific. This more detailed training should focus on the level of knowledge you need to comply with the requirements within the policy for each job function. For example, clinical staff will be asked to focus on the classification process to ensure waste is segregated, stored and processed in relation to the degree of risk associated with different waste categories.

Training can be delivered in a variety of ways depending on the audience. This may include workshops and formal seminars or alternatively, hands-on training in the workplace may be suitable for smaller groups. Local organisations will need to come up with plans as to how to train all the different staff groups.

The policy should establish the frequency of refresher training required for each job function and how training records should be maintained. It should also refer to a review of the findings and actions arising from audits, and how these can be incorporated in to future training modules.

### 4.4 Accidents and incidents

All incidents involving spillages, damaged packaging, inappropriate segregation or any incident involving sharps need to be reported to your line manager or other

responsible person for investigation using local reporting mechanisms. The investigation will establish the cause of the incident and the action which needs to be taken to prevent a recurrence. A brief summary of these incidents can be used as precautionary tales in future training modules, aiming to inform staff on how such incidents can be avoided in the future. The policy should specify clear written procedures for dealing with spillages.

### 4.5 Consultation

Health care organisations regularly update or revise policies and procedures. Draft policies are sent out for consultation to relevant people in the organisation. The *Safety Representative and Safety Committee (SRSC) Regulations* were introduced under the Health and Safety at Work Act, and are designed to provide formal recognition of trade union appointed safety representatives and committees. The *Health and Safety (Consultation with Employees) Regulations* set out the legal framework which will apply if employers have employees who are not covered by representatives appointed by recognised trades unions.

The consultation process supports you in ensuring there are policies and procedures, training programmes, safe systems of work, and risk assessments, developed in partnership with staff and their representatives.

#### Case study 8

##### NHS Fife guidance on how to undertake a waste audit in renal units

**Mary Thomson, Renal Nurse, NHS Fife**

NHS Fife has developed guidance for staff to use to support waste audits in local renal units. The resource explains the purpose of the waste audit and why knowledge of the composition of the waste stream is important to influence waste management policies and procedures, and to identify compliance with these. Different methodologies used to undertake waste audits are explained, including observation of practice, questionnaires, and 'spot checks' of waste receptacles. Waste audits should always be undertaken in liaison with local waste managers/leads and comply with relevant health and safety requirements.

Please see [appendix C](#) for more information.

## 5

## Community health care

### 5.1 Nursing in the community

Waste and other laws apply when people are at work. Where a nurse is providing health care in a patient's home they are at work and the home is a workplace. The nurse and their employer are therefore obliged to follow laws that the resident would not be required to.

Health care staff working in the community are responsible for waste produced as a result of their activities. This means everyone who manages waste or has responsibility for waste (including the health care organisation) is required to fully comply with their duty of care. In summary, the community health care worker must first assess and classify the waste correctly - whether a used wound dressing is infectious or offensive waste, for example - and then ensure it is placed in the correct colour coded container, which is closed and labelled appropriately ready for removal or collection.

Waste classification is needed to determine the appropriate containment and treatment/disposal option for managing wastes and this is covered in detail in [Table 3.2](#) of this guide. *The safe management of health care waste manual* emphasises the need for this classification stage, and introduces the option of using professional assessment and clinical judgement as part of this process (see [Table 2.1](#)).

In short, when assessing whether a waste should be classed as infectious, the health care worker is expected to consider the medical history of their patient (where available), any clinical signs and symptoms indicating a potential infectious risk and finally, to use their clinical judgement in support of the overall assessment procedure. The historical use of treat as infectious 'just in case' scenario and/or classification of all waste as infectious is not acceptable. This should aid the community staff to determine whether waste produced as part of the treatment should be classed as infectious hazardous waste or if it could be classified, for example as offensive non-hazardous waste.

### 5.2 More typical examples

Community staff will produce a variety of different wastes on a daily basis, including infectious soft waste (for example, swabs, paper towels, small dressings and cotton wool contaminated with body fluids), sharps, medicinal or medicinally contaminated wastes, non-infectious (offensive) soft wastes, anatomical items (for example, placentas) and municipal wastes.

**Soft non-infectious wastes:** examples of these types of waste include stoma or catheter bags and incontinence pads contaminated with bodily fluids, where the assessment process leads you to believe the waste does not pose an infection risk. These wastes can either be placed in a **tiger striped offensive waste bag** or, where the type and quantity of offensive waste is similar to that found in typical domestic waste (plasters, small dressings or incontinence products) can be placed in the householder's **domestic waste bag**.

**Note:** the domestic waste option can only be used with the householders permission and offensive waste items should be double-bagged (using a sandwich type bag or bin liner) before placing in the householder's domestic waste bag.

**Soft infectious wastes:** examples of these types of waste include dressings, bed pads, bandages or protective clothing (gloves or aprons, single use items) contaminated with bodily fluids, where the assessment process leads you to believe the waste poses a potential infection risk. These wastes should be placed in an **orange clinical waste bag**.

**Note:** large metal items should not be placed in the orange bag as these may damage the equipment at the waste treatment plant. If infectious, these should be placed in rigid yellow-lidded containers and marked for decontamination or incineration only.

**Sharps:** these include hypodermic syringe needles and may be contaminated with either cytotoxic or cytostatic medicines - use a **purple lidded yellow sharps receptacle**, or non-cytotoxic or non-cytostatic medicines - use a **yellow lidded yellow sharps receptacle**. If the needle has been used to obtain a blood sample and therefore is not contaminated with medicines, an **orange lidded yellow sharps receptacle** may be used.



**Anatomical waste:** this category includes placentas, which should be placed in a **red lidded yellow container** specifically for such wastes.

**Maggot (larval therapy):** these are used in the community for the treatment of suppurating wounds and are not always considered to pose an infection risk when disposed of. However it is recommended they are either contained in a rigid sealable yellow container or double bagged in yellow bags and treated as infectious waste.

**Note:** yellow bags are advised and not orange (infectious) as maggots are disposed of in a similar way to anatomical waste which results in incineration.

### 5.3 Transport of waste in the community

The *safe management of health care waste manual* suggests there are two main options for removing health care waste from a patient's home. It can be stored safe and secure at the home owner's premises in a place not accessible by children or animals (the householder must consent to the storage of the waste) until collected by a pre-arranged designated authority such as a waste management contractor. Alternatively, the health care worker can remove the items and transport back to their work base where there are consolidation facilities for collection and treatment/disposal.

When transporting waste in their own vehicles, health care workers should ensure that they are transporting the waste in suitable United Nations (UN) approved rigid packaging that is fit for purpose and capable of safely and securely containing the goods (in other words, is leak proof). It is the responsibility of the health care organisation to provide:

- a rigid leak proof container (UN packaging instructions P621)
- spillage kits (refer to waste policy spillage and decontamination procedures)
- instructions on periodic cleaning requirements for containers which are re-used
- a dedicated waste training package for staff working in the community based on the requirements set out clearly in the waste policy, to include as a minimum support in carrying out waste assessment and classification, use of appropriate containers, safe storage options, transport

requirements and spillage and decontamination procedures

- systems to ensure safe working for lone workers returning to waste disposal areas out of hours.

Note: it is no longer necessary for community staff carrying small loads of clinical waste in their own vehicles to carry a fire extinguisher specifically for waste transport purposes, display orange plates or waste transfer documentation.

Health care workers who carry small loads of clinical waste on ferries – for example, when travelling between the Scottish Islands – do not benefit from the derogation and need to carry transfer documentation.

Some areas of concern raised by community staff include the following:

- potential for waste receptacles to contaminate clean equipment and dressings when both are stored in a vehicle's boot storage area
- risk associated with community staff returning waste to isolated health care centres during out of hours services
- risk to family members of staff associated with potential cross-contamination and leaks from infectious wastes
- offensive smells permeating the vehicle.

Due to these concerns expressed by community staff, which the RCN believes employers should acknowledge, we recommend that where the householder consents for waste to be stored in the premises, the employer should arrange for collection of the waste by a third party such as the local authority, waste contractor or a person employed by the health care organisation to collect waste. Effective arrangements and communication must be in place to arrange collection by a third party. Note: The RCN understands that third party collections of waste will incur costs however these should be included along with other assessment of benefits and risks in any decision regarding health care waste management in the community.

If the householder does not consent to waste storage on their premises, or waste cannot be stored at the premises safely or securely, then the employer must put systems in place to allow the nurse to transport the waste back to a base safely and without risk to him/her or family members using the car (waste should not be stored in vehicles overnight).

Continued...

...continued

If you travel to your patients' premises on public transport you need to seek advice from your employer regarding removal of health care waste. Policies and procedures, training programmes, safe systems of work and risk assessments should be developed in partnership with staff and their representatives.

## Glossary

**Clinical waste** – waste that is clinical waste as defined by the *Controlled Waste Regulations*.

**Cytotoxic and cytostatic** – classification of medicinal waste used in the *List of wastes regulations* for medicinal products with one or more of the hazardous properties; toxic, carcinogenic, toxic for reproduction or mutagenic.

**Hazardous waste** – Hazardous waste is defined in the revised waste framework directive and the various sets of regulations current in the UK incorporate that definition into law for the relevant country. In Scotland these are referred to as special rather than hazardous wastes.

**Health care waste** – waste that is produced through health care activities and of a type specifically associated with such activities.

**Infectious waste** – waste that possesses the hazardous property 'H9: Infectious', in other words substances containing viable microorganisms or their toxins, which are known, or reliably believed, to cause disease in man or living organisms.

**Medicinal waste** – medicinal waste includes expired, unused, spilt, and contaminated pharmaceutical products, drugs, vaccines, and sera that are no longer required and need to be disposed of appropriately.

**Offensive/hygiene waste** – offensive/hygiene waste is waste that may cause offence due to the presence of recognisable health care waste items, body fluids or odour.

**PPE** – personal protective equipment.

**Sharps** – sharps are items that could cause cuts or puncture wounds. These include needles, hypodermic needles, scalpels and other blades, knives, infusion sets, saws, broken glass, and nails.

**Soft waste** – a term commonly used to describe waste suitable for disposal in bags, including swabs, small dressings, cotton wool and PPE items.

# References and further reading

## References

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Thomson M and Chigaru T (2010) Financial savings through environmental changes. *Journal of Renal nursing* 2 (6) 285-288.

## Further resources

**Waste Watch** The Waste Watch organisation promotes action on waste reduction, reuse and recycling throughout the UK. Visit [www.wastewatch.org.uk](http://www.wastewatch.org.uk)

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## FAQs

**Q1. I work for a charity and have found it difficult to find out where to place tablets and liquids not in their original packaging, generally prescription only medicines for example; after crushing a tablet and adding water to it, the dose that the patient needs is only half of what has been made up, where does the remainder of that liquid go? Also, if the patient dose is only half a tablet, where does the remainder of that tablet go? I asked a waste care company and they recommended a 'doom' pot (GD destruction kit), but as a charity this is not financially an option for us.**

In its guidance, Water UK prohibits the discharge of medicines down the toilet to foul sewer (except for non-pharmaceutically active medicines such as saline or glucose solutions in small quantities). See [www.water.org.uk](http://www.water.org.uk)

The controlled drug destruction kit is an acceptable option; alternatively the advice provided in *The safe management of health care waste manual* specifies options for the storage and segregation of such medicines. The management of very small amounts is a very common problem to which there are a number of complex issues to be worked through, including types and quantities of each type of waste medicines arising. We would suggest discussing further with your local waste adviser with reference to these guides.

**Q2. In the community setting – such as the patient’s own home – can waste generated from a spillage of blood and or body fluids, where there is no known infection risk, be disposed of as household waste when it is managed by a health care worker? When is it not categorised as health care waste?**

Small quantities absorbed on tissues or wipes, only if deemed not to be infectious waste by the health care worker, can be placed into small bags (not yellow or orange), sealed and double bagged and placed in the patient’s domestic waste bag with their permission. If it is similar in type and quantity to a typical household arising event – for example, clean up from a cut finger – it is reasonable to treat this as household waste and not health care waste.

**Q3. How do you dispose of alcohol hand gel that is out of date when there is still a large amount left in the bottle?**

If there is a large amount it should be treated as though it were full and prepared for collection and disposal; alcohol hand gels are flammable, refer to your waste policy. If bottles are essentially empty (containing dregs) you may be able to wash them and discharge the rinse water down the sink (foul sewer). However, you must check the alcohol gel safety data sheet to ensure the gel does not contain siloxanes, a chemical which can cause damage to the sewerage system. If the gel does contain siloxanes, you need to talk to your waste manager (see [section 2.1](#)).

**Q4. Is there a difference in disposal routes for sanitary waste generated by patients and that generated by staff/visitors?**

If a patient is known to have an infection and the waste arising from the patient presents an infection risk – for example, from blood-borne viruses or urinary tract infection – this waste should be segregated and treated as infectious waste, usually in orange bags. General (assumed non-infectious) sanitary waste produced by staff or the general public in public places can be treated as non-hazardous offensive waste, and tiger striped receptacles are usually used for this purpose.

**Q5. We find the new guidance particularly difficult because it seems to go against our teaching on standard precautions. We would always advise that items contaminated with body fluids should be dealt with as potentially infectious (since the patient may have Hep B for example).**

The RCN supports the approach taken in *The safe management of health care waste manual* in undertaking an assessment based on professional assessment, clinical signs and symptoms, and any prior knowledge of the patient to decide whether a waste should be classed as infectious or not.

**Q6. What is the difference between anatomical waste and tissue fluid? Because if they are the same they should both go into the orange stream.**

Anatomical waste is defined in *The safe management of health care waste manual* as body parts or other recognisable anatomical items that may be offensive to those who come into contact with such items. Tissue fluids are by definition, not solid, and may be associated with anatomical waste; therefore the manual specifies that containers for anatomical waste should be capable of containing blood and other tissue fluids. It also recommends the use of a red-lidded yellow rigid container. If the waste is assessed to be infectious waste, then the container label and the waste consignment note must clearly state this is infectious anatomical waste.

**Q7. It seems strange the waste from a patient who is colonised with a resistant organism, say MRSA, is treated differently to that of a patient infected with the same one.**

The devil here is in the detail. We know that bacteria are all around us and that there is no justification for classifying all waste based on the presence of bacteria. If the patient has an infection then this represents a different situation, and waste associated with that infection should be segregated as infectious waste.

**Q8. For the disposal of urinary catheters in early years or school settings, should they be treated as hazardous clinical waste?**

*The safe management of health care waste manual* considers urine bags to be offensive waste where the risk assessment indicates that no infection is present, and no other risk of infection exists. The same principle could therefore be applied to urinary catheters.

**Q9. When I am looking after a patient with a wound infection, does all the waste generated by me (including incontinence pads, wound dressing waste and hand towels) have to go as infectious waste?**

No, only the waste directly involved with the wound infection needs to be disposed of as infectious. Everything else can go as offensive waste or via the municipal waste stream, see [section 5.2](#) on soft non-infectious waste for clarification.

**Q10. I'm worried that if I segregate waste as offensive that some infection may be present that I don't know about – will I get into trouble?**

No you will not get into trouble. If you believe there is no indication that an infection is present or suspected at the time you assess the waste then your assessment at that time is correct. It is unsustainable to segregate all waste as infectious just in case as this is too costly, not justified on a risk basis, and is not fully compliant with the regulations governing waste.

**Q11. My local waste policy does not include the use of the offensive waste stream. What should I do?**

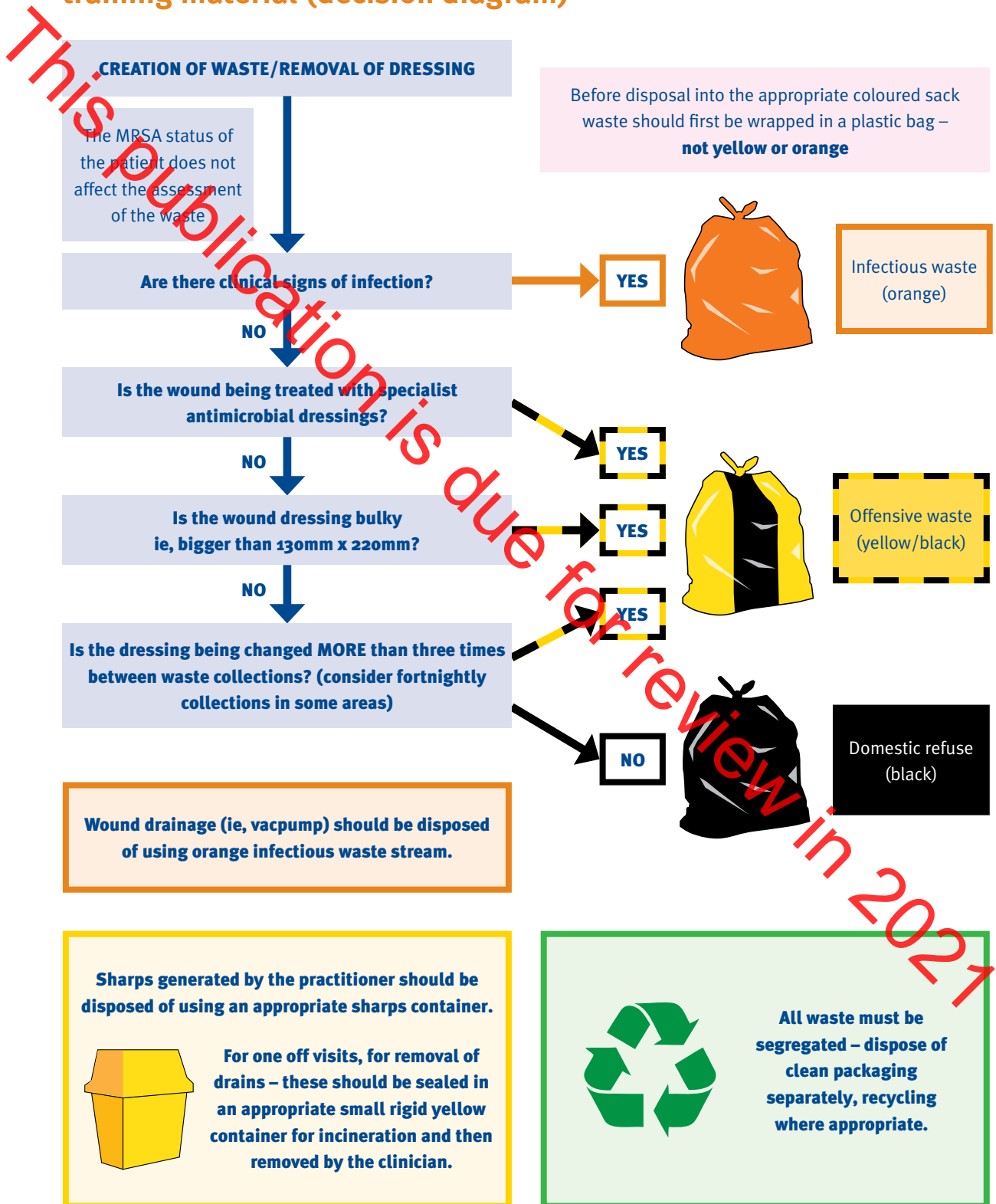
Talk to your manager in the first instance and see how you can raise this issue. It may be that you and your manager could talk to your local waste manager or seek advice from a local RCN safety rep or infection control advisor.

**Q12. What is the difference between the terms 'dangerous' and 'hazardous' when used in describing waste?**

The revised *Waste Framework Directive* (rWFD) indicates that the classification of waste as hazardous waste should be based on the European legislation on chemicals. The rWFD attributes the 15 hazardous properties by reference to the EU Dangerous Substances and Preparations Directives.

The European Waste Catalogue links the classification of certain hazardous wastes to the concentrations of dangerous substances within the waste and threshold concentrations derived from these directives.

## Appendix A – Berkshire Healthcare Foundation Trust sample training material (decision diagram)\*



\* Decision making about disposal of medicated dressings must be made at a local level. The need to use the infected waste stream if signs and symptoms of infection are present remains as per [table 2.1](#)

## Appendix B – NHS Fife staff questionnaire ‘Let’s talk rubbish!’

### Home life

- Do you recycle at home?  
 Yes     No
- What materials do you recycle?  
 Glass     Plastic     Cans  
 Clothes     Paper     Garden  
 All
- Why do you recycle?  
 less frequent bin collection - have to!  
 advertising / public information  
 pressure from family/children  
 I am environmentally aware  
 Other
- Do you have a system for recycling at home?  
 Yes     No
- Do you find it time consuming?  
 Yes     No
- Do you encourage others to recycle?  
 (eg, friends and family)  
 Yes     No
- Are you participating in the “No-bag” policy at supermarkets?  
 Yes  
 Why? \_\_\_\_\_  
 No  
 Why? \_\_\_\_\_

### Hospital working life

Questions related to what we place in the black bins, domestic waste not clinical waste.

- Do you recycle at work?  
 Yes     No
- If yes – what do you recycle?  
 \_\_\_\_\_
- If no – why not?  
 \_\_\_\_\_
- Is it easy to recycle at work?  
 Yes     No  
 If no – why not?  
 \_\_\_\_\_
- Do you think about recycling at work but can’t?  
 Yes     No  
 If yes – why not?  
 \_\_\_\_\_
- What do you need at work to recycle more effectively?  
 More recycling points  
 All colour coded bins accessible  
 More information  
 N/A – don’t recycle
- Do you think about how we could minimise the amount of rubbish we generate at work?  
 Yes     No
- Do you think we’ve more important things to deal with than the amount of rubbish we send to landfill via our black bag domestic waste?  
 Yes  
 Why? \_\_\_\_\_  
 No  
 Why? \_\_\_\_\_

Your help in completing this questionnaire is very much appreciated. Thank you.

Please return completed questionnaires to

\_\_\_\_\_

*Acknowledgement: Mary Thomson, Renal Nurse,  
Queen Margaret Hospital, NHS Fife*

## Appendix C – how and why to do a waste audit in a renal unit

Waste audits are used to assess the composition of a waste stream. This information is important in order to develop and influence waste management policies and procedures, to assess the extent to which waste is segregated appropriately (identifying opportunities to increase reuse or recycling as forms of disposal) and to monitor the impact of waste minimisation schemes.

Waste audits should be undertaken prior to developing or updating waste management procedures. We also encourage renal units to undertake waste audits at routine intervals to monitor waste segregation and as a tool to raise awareness. Whilst more detailed guidance is available, the process of undertaking a waste audit can be a relatively simple one.

Firstly, consider the intended scope of the audit. Defining the physical space being audited, for example the procedure room or the dialysis unit, will also help to determine what time period is representative and what waste streams should be considered. Within a renal unit, a waste audit might typically include clinical waste (including sharps) and domestic waste (including kitchen waste, and any separately collected recyclable waste).

Having considered the scope, any specific risks that the audit procedure may entail must be identified, and strategies to mitigate these risks as far as possible should be developed. This is particularly important if manual sorting techniques are to be employed and local advice should be sought regarding health and safety considerations (eg, waste manager). For example, whilst the gold standard for the analysis of the nature and weight of the contents of sharps containers would be to empty, sort, weigh and subsequently dispose of these contents, the significant risk involved means that this approach is not advisable.

Waste streams can be audited using a variety of different methodologies. It may be necessary to use a combination of these to obtain an accurate understanding of the waste stream and where changes might be best made.

- The simplest method is to **observe and record practice**. This technique, in which items of waste are noted as they are entered into a receptacle, is broadly applicable across most waste streams and is particularly useful in

developing an understanding of the effectiveness of waste segregation and any barriers to this. However, the process can be time consuming and care must also be taken to minimise observer bias.

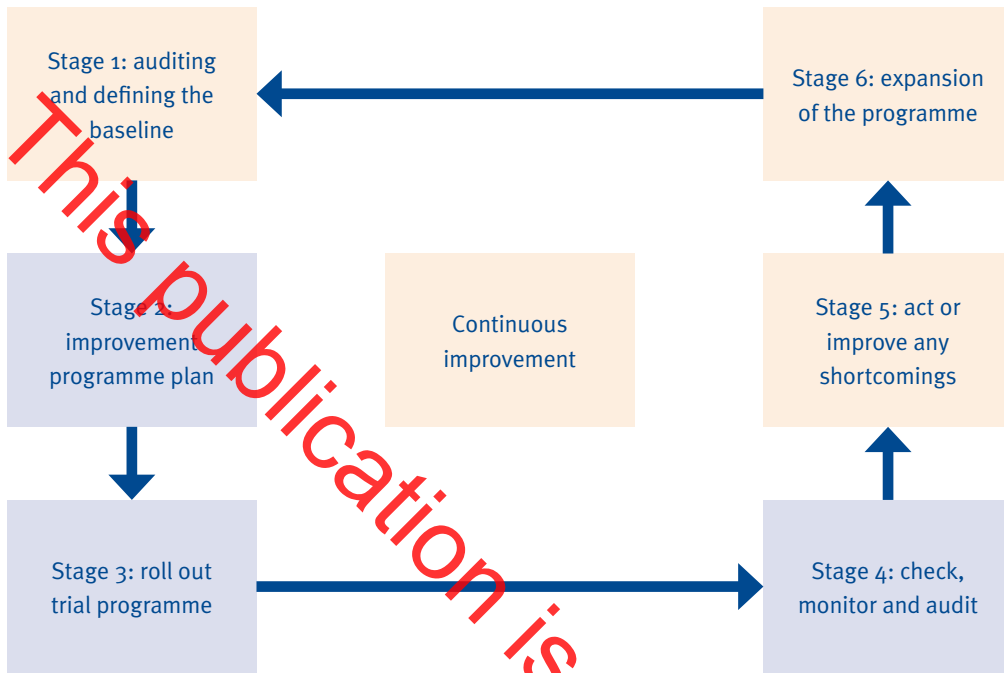
- A second simple method is to undertake **spot-check observations of waste receptacles**. The visual inspection is undertaken without removing the contents (for example, through the aperture of a sharps container) and allows identification of rogue waste items; however, quantification of the contents is not possible. Photographs can be taken to highlight good and bad practice.
- **Questionnaires** can be used to assess the understanding, attitudes and, to a lesser degree, the practice of staff with regard to waste management. Written carefully, they can also be useful to raise awareness.
- The gold standard audit tool is the detailed analysis of waste through **manual sorting**. This is used to determine the nature and composition of the waste items. The items should be sorted and recorded, using a table. This table illustrates a method of itemising the contents of a clinical waste stream, and was developed by the Waste Watch team:

Waste type	No of items	Weight (g)
Paper (white)		
Paper (mixed)		
Cardboard		
Plastic bottles		
Mixed plastic		
Tins, cans and foil		
Organic (food)		
Organic (other)		
<b>Total</b>		
<b>Total measured weight of bag</b>		

The weight or volume of the items should then be quantified. A thorough risk assessment prior to undertaking the audit is crucial.

Having completed the analysis, a report should be produced and recommendations made. Communication of this report improves staff awareness and encourages future involvement. It should be remembered that waste auditing forms a component of a cycle of continuous improvement.





Acknowledgement: Mary Thomson, Renal Nurse, NHS Fife

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