



Which Human Waste Disposal Method Should You Prescribe For Your Medical Facility?



The safe management of medical waste is essential to preserve the health of patients, staff and the environment. Human waste in particular presents unique challenges – with a host of disposal options to match. With this in mind, how can you choose which solution will work best for you?

Medical waste is any kind of refuse that contains infectious material (or material that's potentially infectious). The term "medical waste" can cover a wide variety of different by-products of the healthcare industry, with the broadest definition including fairly benign materials; disposable gloves, tissues and hospital sweeping waste, for example.

A high priority for healthcare providers, however, is the disposal of hazardous waste. Of the total amount of waste generated by healthcare activities, about 85% is general and non-hazardous. The remaining 15% is considered hazardous material that may be infectious, toxic or radioactive¹.

Poor management of medical waste exposes clinicians, waste handlers, patients and the community to potential infection, toxic effects and injuries, as well as polluting the environment.

So, how would we classify human waste? Is it really as dangerous as other kinds of medical waste, given that we are all exposed to it – in one way or another – every day?



The production of human waste is a natural part of our lifecycle, after all; but that doesn't mean human waste exposure can be considered risk-neutral. As soon as it exits the body, the hazards are acute.

Human waste is recognised as high-risk for transmission of infections in healthcare environments.

Human waste is a vector for extremely dangerous pathogens, such as Clostridium difficile (C. diff), Multi Drug-resistant Gram-negatives (MDR Gram-negatives), Methicillin-resistant Staphylococcus Aureus (MRSA), Escherichia coli (E. coli) and Norovirus.

¹ <https://www.who.int/en/news-room/fact-sheets/detail/health-care-waste>

These pathogens are incredibly simple to spread. *C. difficile*, for example, is easily transferred via the hands of hospital and care home staff, as well as via visitors who come into contact with infected patients.

It's not just the waste itself which is a risk; floors, bedpans and toilets that have been contaminated with bacteria are also dangerous to touch – and often, most worryingly, there will be no visible sign that these bacteria are present.

C. difficile bacteria and spores are extremely enduring, with some pathogens surviving on dry surfaces, such as clothes and work surfaces, for months. As a result, repeated outbreaks of Healthcare Acquired Infections (HCAIs) can run rife.

Items which come into contact with human faeces and its associated bacteria, such as bedpans, are categorised as non-critical devices; but this isn't wholly representative of their vital contribution to waste management, and therefore infection control.

Non-critical devices have physical contact with intact skin, as opposed to critical items that enter sterile tissue or the vascular system; a urinary catheter, for example.

Nonetheless, both critical and non-critical devices have the potential to introduce bacteria to the body; a bedpan that isn't properly sanitised after use will pose a serious infection risk to anyone who comes into contact with it thereafter.

It's not just sanitisation of toileting aids that will bridge the gap between good and poor human waste management, of course; what was deposited inside the aid needs to be reliably removed from all possible contact with the general environment – anything it touches will become an immediate hazard.

Safe management of human waste has the potential to reduce HCAIs through the employment of better hygiene and infection prevention measures – and no healthcare facility can afford to cut corners. It only takes one outbreak to result in severe repercussions; infections such as *C. difficile* and MRSA can cause distress, immeasurable extra care costs, loss of reputation... even loss of life.



There are many options in regard to how to safely dispose of human waste, but choosing which one is best for you will depend on the nature of your hospital or care home operations. No matter which solution you opt for, you will need to be confident that all of your clinicians can exercise best practice, every time.

Deadly bacteria will never miss an opportunity.

Which options for human waste disposal are currently available?

Where your patients must use a toileting aid (such as a bedpan or commode) instead of regular bathroom facilities, you must carefully consider how this waste will leave the bedside, and everywhere it must travel in between.

Human waste management techniques can vary around the globe. There are four common methods – though their effectiveness in regard to infection control is extremely varied.

1. Bagging

The disposal of single-use products can be achieved using clinical waste bags, colour-coded to the correct purpose. The bags used for disposing of human waste will either be yellow, orange or 'tiger striped' (yellow and black stripes), to both warn of their contents, and ensure that they're safely dealt with by the disposal company.

Yellow bags are for infectious waste, which must be sent for incineration at a suitably authorised facility. Waste which is classified as infectious – for example, items that are contaminated with bodily fluids which an assessment process deems to be an infection risk – will belong in this bag.

Yellow bags with black stripes are for offensive waste. These may be sent for energy recovery at energy-from-waste facilities. These bags can also be sent to landfill if no other recovery or recycling option is available. If your assessment process leads you to believe that the waste is not infectious, it can be disposed of in this bag; incontinence pads and continence aids from healthy patients, for example.

If you're using bags to dispose of waste, you are most likely throwing away single-use items. Although single-use items are often a smart way to manage infection control (as they don't require sanitising in order to be used by someone else), bagging your waste is inherently unreliable.

A bag always has the potential to split, and therefore leak its contents into the environment that surrounds it. Even if the bag doesn't break, it can release pathogens into the air each time it's opened to place another item inside.

In addition, unpleasant smells can escape the bag quite easily, making them less favourable to patients and clinicians alike. Similarly, bags take time and effort to empty, which can take staff away from more urgent, bedside tasks; and where process efficiency isn't perfectly executed, filled bags around the premises can make the facility look unclean and – even worse – unhygienic and careless.

2. Emptying and cleaning reusable containers by hand.

Where single-use continence aids are not the product of choice, reusable items must be used, sanitised and returned to circulation quickly and efficiently.

Used bedpans, commode pots and urinals must be removed from the bedside, emptied into a slop hopper, then scrubbed clean and soaked in detergent; most commonly by the clinician themselves.



Not only is this extremely time-consuming, but it can be a woefully inefficient method of waste disposal. Even when the waste is safely flushed away, the bedpan itself requires a fair amount of elbow grease to remove the remnants – and when the bacteria that causes HCAs is invisible, how can you really be sure that it's fully removed? The whole process is dependent on the absence of human error, with few indicators to prove that sanitisation has been reliably achieved.

3. Reprocessing reusable bedpans with a washer disinfector.

If reusable bedpans are your continence aid of choice, a bedpan washer is an ideal way to dispose of waste, without the risks associated with a manual method.

Rather than tipping the waste into slop hopper before scrubbing and soaking, many models of washer disinfector – such as the Panamatic range by DDC Dolphin – will allow you to place the entire contents of the bedpan inside the machine, in one simple, dispose-and-sanitise solution.

Far quicker than cleaning a bedpan by hand, a washer disinfector can fully disinfect a bedpan in a matter of minutes; and with many machines capable of processing several bedpans in a single cycle, clinicians can save significant time. Just load up the machine, turn it on and return to the



patient's bedside – the bedpans will be clean and ready for reuse when you return.

Not only is waste disposed of quickly, but efficiently, too. Using thermal disinfection, a washer disinfector will ensure that the minimum temperature required to kill bacteria is always met – leaving no room for error.



4. Reprocessing single-use bedpans in a macerator.

What could be more ideal than disposing of every element of a waste product in one hit?

If your facility is using pulp bedpans and urinals, you needn't worry about sanitising these items for reuse; and if you choose to use a macerator for disposal, you don't need to worry about these items lingering in the care environment, either.

After the pulp containers are placed in the machine, they are pulverised by macerator blades, turning them into a fine, watery slurry. Once this process is complete, the remaining debris is flushed straight through the normal sewerage system, without any need for unnecessary exposure to waste.

In addition, Pulpmatic macerators from DDC Dolphin offer entirely hands-free operation, thanks to motion sensor technology. There's absolutely no touching required, preventing the spread of bacteria from dirty hands.

Better yet, automatic disinfection and deodorising dosing will clean the drum of the bedpan macerator after each cycle to eliminate 99.999% of spores associated with HCAs.



With all of these options in mind, which one should you prescribe for your hospital or care home?

Although four options are outlined, it's quite clear that only two are viable as far as infection prevention is concerned. Using a medical pulp macerator or washer disinfectant is the only way to be confident that waste has been safely disposed of; any other process is simply 'hoping for the best'.

Buying capital equipment, of course, has an element of monetary outlay – but the subtle costs in other areas can be far higher. Manual bedpan cleaning poses an exceptionally high risk of infection; spray wands, for example, can actively distribute bacteria into the air while bedpans are being cleaned; the same can be said for the steam generated from hot water. All the while, there's no guarantee that the water is actually hot enough to destroy all pathogens – and no visual check can ascertain this, either.

In regard to bagging and binning waste, there is ample opportunity for bacteria to pollute the atmosphere; a bag only needs to become overfilled or disturbed, never mind tears. With all of these elements considered, it's plain to see that using these methods will put your patients at a stark infection risk.



The use of automated bedpan washers or pulp macerators for processing bedpans is highly recommended, as they are the only methods to follow stringent infection prevention procedures which can be validated by either the internal temperature of the machine, or the complete removal of the item from the environment.

By choosing an inferior method, the risk of infection is simply being accepted.

Your choice of human waste disposal method should centre on removing the source of risk.

Reducing the handling, transport and processing delays related to human waste is key.

With washer disinfectors and macerators at the top of the chain for both speed and efficiency, the final question to ask yourself is 'which?'.

With a variety of macerators and washer disinfectors on the market, there's a suitable solution for every need. If you've already committed to either single-use pulp or reusable bedpans, the choice of machine may be obvious; but if you're still on the fence in regard to reusable versus disposable, there are more questions that you can ask yourself.

If traffic in your sluice room is very high, you may find that a washer disinfectant has the capacity you need on account of its larger load capacity – the DDC Dolphin Optima 3, for example, will process up to three bedpans and three urine bottles in just ten minutes.

The space you have available is also to be considered. Bedpan washers can be front-loading for under counters, whereas macerators tend to be freestanding; you may also want to consider if the machine will go into a private room or en suite, or whether it will be located in the sluice room.

Of course, cost is always a concern. Both macerators and washer disinfectors are economical in their use of electricity and water, but you may wish to weigh up to cost of buying single-use bedpans, versus the continuous replacement of pulp equivalents.

If the cost of capital equipment is a barrier to providing the most effective infection control, DDC Dolphin's 360° Care Cover can help. A simple, monthly payment will not only allow you to purchase the most suitable machine for your needs, but it will also protect you from extra costs; service and maintenance is included in the price, as well as parts and labour warranty. No hidden surprises – just an effective waste disposal solution, which helps to keep your patients safe.

Need a little more help deciding which waste disposal method is best for you?
Contact DDC Dolphin today!

For more information, please contact DDC Dolphin Marketing Director Zoe Holiday, 01202 731555, info@ddcdolphin.com, <https://ddcdolphin.co.uk>

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DDC Dolphin is a leading manufacturer of infection control equipment for the healthcare sector. The company was founded in 1991.

DDC Dolphin safeguards patients and clinicians from infection by providing a complete sluice/dirty utility room solution for hospitals and care facilities.

The company manufactures, installs, maintains and audits pulp macerators, bedpan washer disinfectors, sluice room stainless furniture and consumable products. It has invested in anti-microbial coatings and hands-free technology to drive innovation in the sector.

