



Prevention & Procurement

Ask the right questions before a device enters your facility



The Waste Hierarchy – Start Here

PREVENT

- Reduce waste at source
- Buy durable, repairable, reusable devices
- Prevention = TOP of the hierarchy

REUSE

- Re-deploy within the facility
- Transfer to another institution
- ALWAYS reuse before recycling

REPAIR / REFURBISH

- Repair before replacing
- Refurbishment extends device life
- Recycling and disposal are the LAST resort

What to Ask Suppliers at the Procurement Stage

REUSABILITY & DURABILITY

- Expected service life?
- Multi-patient use with cleaning/disinfection?
- Which components fail first?

SOFTWARE & OBSOLESCENCE

- Security updates for how long?
- Does the device work offline?
- Do updates avoid forced obsolescence?

REPAIRABILITY

- Non-destructive disassembly (standard screws, not glued)?
- Spare parts available for how many years?
- Repair manuals accessible?

DATA SECURITY BY DESIGN

- Secure reset/wipe accessible to staff?
- Where is data stored: device, server, cloud?
- How easy is data deletion?

BATTERY SAFETY

- EU Battery Regulation 2023/1542 compliance?
- User- or technician-replaceable battery?
- Safe removal procedure at the end of life?

CIRCULAR TAKE-BACK

- Suppliers take-back or trade-in scheme available?
- Established reuse/refurbishment partner routes?
- Scoring: 15–30% of total tender score (EU Green Public Procurement Framework)

Daily Prevention – What Every Waste Operator Must Do

- 1 Use as intended.** Follow manufacturer instructions. Report defects early; a minor fault caught early can save a device from the waste stream.
- 2 Protect reuse candidates.** Keep a dedicated, clearly labelled container for 'potentially reusable' devices. Never mix with other items or waste streams.
- 3 Handle with care.** Do not stack, crush, or drop devices. Keep digital health devices separately from other items.
- 4 Route quickly.** Move devices to the assessment point promptly; this delays risk battery leakage, corrosion, or the spread of contamination.
- 5 Inspect at the point of removal.** Visual check the moment a device is taken out of service: contamination? Damage? Battery condition? This determines the stream destination.

Key principle: Early and correct segregation is the single most important action for keeping devices in the circular economy. A device placed in the wrong bin at the moment of removal is almost impossible to recover afterwards.



Reuse & Refurbishment

Always assess reuse before considering waste treatment



Three Life-Extension Pathways

REUSE / RE-DEPLOYMENT

- Functionally intact and safe
- Not contaminated (or properly decontaminated)
- Data securely removed
- Complies with EU MDR

Annex 2 Instruction Manual for Operational Workers Handling Digital Health Devices

REPAIR / REFURBISHMENT

- Not reusable but repairable
- Spare parts & expertise available
- Can return to safe, compliant condition
- Data can be securely removed

Annex 3 of the Instruction Manual for Operational Workers Handling Digital Health Devices

WASTE TREATMENT (LAST RESORT)

- Contaminated, cannot be decontaminated → medical waste route, not WEEE
- Physically beyond repair, not contaminated (or decontaminated) → WEEE recycling
- Data cannot be securely erased
Reprocessing not legally permitted

Annexes 4 & 23 of the Instruction Manual for Operational Workers Handling Digital Health Devices

Reuse Procedure – Step by Step (Chapter 7.1)

- 1 Identify at the point of removal.** Visual check: no contamination, intact battery, no visible damage. If all conditions are met, reuse the candidate.
- 2 Place in a dedicated container immediately.** Use a separate, clearly labelled 'REUSE CANDIDATE' container. Never mix with WEEE or medical waste. Do not stack.
- 3 Apply the 'REUSE CANDIDATE' label visibly on the device.** This signals to everyone downstream that the device must not be routed to recycling or waste without assessment.
- 4 Route to the assessment point within 24 hours.** Send to the designated service or reuse coordinator. This avoids risks of loss into a waste stream.
- 5 Safety checks first – then data wipe.** Visual inspection → product → basic operation → THEN certified data erasure (generates audit trail). Do not data-wipe a damaged device.
- 6 Decide the reuse pathway.** Internal re-deployment / transfer to another institution/training use. Validated by the ward or department manager.
- 7 Record the decision.** Log the unique device identifier (UDI), the decision, and the receiving department or institution. This is your traceability record.

STOP if: Visual inspection or any check reveals a safety risk (swollen battery, cracked housing, exposed components, confirmed contamination). Do NOT attempt data wiping on a damaged device. Route per Annex 2 of the Instruction Manual for Operational Workers Handling Digital Health Devices.

Responsible & Timing

WHO

- Operators (clinical staff, biomedical technicians, cleaning staff) identify and label. They provide service, perform safety checks and data wipe.
- Ward/department manager validates reuse decision.

WHEN

- Every time a reusable digital health device is taken out of service or moved between locations. Assessment must be completed within 24 hours of removal.



Collection & Sorting

The right stream, from the first moment



The 5 Sorting Streams — Which Bin Does It Go in?



REUSE / RE-DEPLOYMENT = GREEN bin

Functionally intact, clean, data removable.
Label: REUSE. Protect from damage.
Route to assessment within 24h.



REPAIR / REFURBISHMENT = LIGHT GREEN bin

Faulty but potentially repairable, no contamination.
Label: REPAIR. Avoid destructive handling.
Route to authorised repair partner.



WEEE RECYCLING = BLUE bin

End-of-life, non-contaminated, not reusable or repairable.
Label: WEEE. Hand to authorised PRO, logistics provider or supplier.



MEDICAL WASTE = RED bin

Infective or expected to be infective (WEEE Art. 2 exemption), contaminated (chemical or radioactive) or uncertain status.
Label: MEDICAL/HAZARDOUS. Full PPE.
Leak-proof packaging. Medical waste route > NOT WEEE.



DAMAGED BATTERY / HIGH-RISK = BLACK bin

Swollen, leaking, or overheating battery; fire risk.
Label: BATTERY. DO NOT handle further.
Place the entire device in a non-combustible container. Class-D extinguisher nearby.
Call the waste management lead.

Sorting Step by Step & Collection Point Setup

Every device - step by step

- 1 Apply the Annex 4 decision tree of the Instruction Manual for Operational Workers Handling Digital Health Devices to the device .
- 2 Place in the correct labelled stream (1–5).
- 3 Apply tag: REUSE / REPAIR / WEEE / MEDICAL / BATTERY.
- 4 Batteries: if intact and removable → dedicated battery container.
- 5 Swollen/leaking battery → Stream 5 entire device. NO further handling.
- 6 Record device in collection log (Section 8.5 Instruction Manual For Operational Workers Handling Digital Health Devices).

Collection point requirements

- Colour-coded bins per Annex 7 of the Instruction Manual For Operational Workers Handling Digital Health Devices with hazard icons
- Room-level signage: stream ID, hazards, restricted access, contact person
- Separate lockable container for data-bearing devices
- Stream 4 & 5 procedures displayed and staff trained
- Empty on agreed schedule. Replace faded labels within 7 days
- Weekly inspection, record outcomes

Minimum collection log fields

- Device identifier (UDI or serial number)
- Date and location of collection
- Stream assigned (1–5) and reason
- Name of operator who handled the device
- Destination and date of handover
- Data destruction certificate reference (where applicable)

Precautionary principle: If you are uncertain whether a device is contaminated, treat it as Stream 4 (medical waste). It is always safer to over-classify than to under-classify. | Sorting decision tree: Annex 4 · Bin labels: Annex 7 | A device that is successfully decontaminated may re-enter Streams 1–3: decontamination pathway, Annex 23 of the Instruction Manual for Operational Workers Handling Digital Health Devices



Safe Handling

PPE · Damaged devices · Contamination · Emergencies



PPE — Personal Protective Equipment

GLOVES

Nitrile gloves
ALL handling — always

GOGGLES

Safety goggles
Broken devices, leaks, splatter

APRON

Apron/gown
Suspected contamination or infected devices

FFP2/3

FFP2/FFP3 mask
Damaged batteries, dusty components

BOOTS

Protective footwear
Heavy devices, drops, unstable loads

STOP

NO PPE = NO HANDLING
Stop work and request equipment

Damaged & Contaminated Devices

DAMAGED DEVICES

- Do NOT open, break, or dismantle yourself.
- Includes cracked housing, broken screens, exposed wiring, or swollen batteries; handle only with PPE.
- Handle with caution (cooling circuits, screens, batteries).
- Place in secure transport packaging to prevent further breakage.
- Deliver to authorised collection centre or WEEE scheme.
- Battery removal is not allowed.
- Route to authorised treatment, flag the damage.

CONTAMINATED DEVICES

- Do NOT try to clean the device if doing so poses a risk.
- Use full PPE: gloves, eye protection, mask, protective clothing.
- Separate any sharp components, treat as sharps waste.
- Label immediately: 'MEDICAL/HAZARDOUS'.
- Place in leak-proof packaging.
- Follow facility's medical waste protocol, NOT WEEE route.

Contaminated devices do NOT go to WEEE processing until properly decontaminated.

Emergency Protocol — Display at Every Collection Point (Annex 15 of the Instruction Manual for Operational Workers Handling Digital Health Devices)



Battery fire / thermal runaway

Do NOT use water or foam. Use a dry-powder or class-D extinguisher. If not controlled within seconds, evacuate, call the fire brigade, and close doors. After fire: do NOT touch the device for 24h (re-ignition risk). Document the incident. Act immediately on smoke, hissing, swelling.



Sharps injury / needle-stick exposure

Stop immediately. Allow wound to bleed gently; wash with soap and running water for 5 min. Do NOT scrub or squeeze. Cover with a waterproof dressing. Report to occupational health or the emergency department. Identify and isolate the source device. Report within one hour.



Suspected contamination event

Isolate the device in a sealed, labelled bag. Remove contaminated PPE; wash hands and exposed skin. Alert the infection-control officer and waste management lead. Notify any exposed staff. Follow facility infection-control protocol. Document the incident. Act immediately on identification.



Suspected data breach

Do not investigate alone. Notify the Data Protection Officer (DPO) immediately. Notify waste management lead. Document the timeline. Under GDPR Art. 33: notify the national data protection authority within 72 hours of discovery. DPO notification within one hour.



Safe Handling

Safe, compliant, and organised — until devices are picked up



Setting Up the Storage Area

DEDICATED STORAGE AREA

- Separate from general waste at all times
- Sub-areas for each of the 5 streams
- Dry, ventilated, protected from sunlight and heat
- Signed at entrance

SAFE STACKING & HANDLING

- Avoid unstable or heavy container stacks
- Respect manufacturer load limits for all containers
- Use trolleys or carts, never carry heavy containers manually
- Replace inner bin liners without tilting or shaking
- Include fire alarms in the storage area

ACCESS CONTROL

- Restrict access to authorised staff only
- Lock the area outside working hours
- Separate, lockable container for data-bearing devices
- Log all access events where possible

REGULAR EMPTYING

- Empty per the agreed schedule with PRO or reverse logistics provider
- Respect volume or duration limits set by legislation, standards, the container provider, or the device manufacturer
- Register every pickup in the operational system
- Do not overfill containers, contact logistics if needed

FIRE SAFETY FOR STREAM 5 (BATTERIES)

- Dry-powder or class-D extinguisher on site at all times
- Never store damaged batteries near other streams
- Non-combustible container for swollen/leaking batteries
- Check battery storage weekly for swelling or heat

SMART COLLECTION MACHINES (WHERE AVAILABLE)

- QR-code controlled access pre-sorts at the point of deposit
- Generates an alert if unauthorised access is attempted
- All access events logged automatically
- Collected on an agreed schedule by the responsible organisation

Labelling & Weekly Inspection

CONTAINER & ROOM LABELLING

- ✓ Apply colour-coded labels per Annex 7 of the Instruction Manual for Operational Workers Handling Digital Health Devices to every container
- ✓ Label must show: stream ID, stream name, hazard icon.
- ✓ Each sub-area's entrance: stream ID, hazard warnings, restricted access notice, contact person name.
- ✓ Replace damaged or faded labels within 7 days.
- ✓ No unlabelled containers may remain in use.
- ✓ Include fire alarms in the storage area.

WEEKLY INSPECTION CHECKLIST

- ✓ Check for leaks, damage, and unauthorised access.
- ✓ Verify labelling completeness, gaps corrected before the next working day.
- ✓ Check Stream 5 container for heat, swelling, or odour.
- ✓ Verify each stream is in the correct, correctly labelled container.
- ✓ Record inspection results and sign off.
- ✓ Report any issues to the waste management lead immediately.

Responsible & Timing

WHO

- Healthcare facility manager (waste management lead) sets up and oversees storage, maintains an emptying schedule, and ensures compliance.
- Operators maintain day-to-day order, report issues, carry out weekly inspection of the storage area.

WHEN

- Access control: continuous.
- Periodic inspection: every week.
- Label check: every weekly inspection.
- Emptying: per agreed schedule with PRO/logistics.
- Incident reporting: immediately.

References: Instruction Manual for Operational Workers Handling Digital Health Devices. Sorting decision tree — Annex 4 | Sorting fact sheet — Annex 6 | Bin labels — Annex 7 | Emergency procedures — Annex 15