



# WFSA checklist for more environmentally sustainable anaesthesia

- Micro actions - for individual practitioners and clinical teams
- Meso actions - for departments and hospitals
- Macro actions - for systems and governments

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## **Reduce Inhaled Anaesthetic Gas Waste and Pollution\***

- Use low-flow anaesthesia\*\*, including during induction and emergence
- Avoid the most polluting inhaled anaesthetics, nitrous oxide and desflurane
- Remove desflurane from the pharmacy formulary
- Default to intravenous and regional techniques when clinically appropriate and feasible
- Decommission centralized nitrous oxide piping and switch to portable tank management systems in locations where nitrous oxide is deemed essential

*\*Waste anaesthetic gas trapping (for volatiles only) and destruction (for nitrous oxide only) technologies are not supported at this time, due to insufficient evidence of efficiency or significant reduction of life cycle impacts*

*\*\*See Anesthesia Patient Safety Foundation, <https://www.apsf.org/apsf-technology-education-initiative/low-flow-anesthesia/>*

## **Reduce Intravenous Medication Waste**

- Only open medications that will certainly be used, keeping others unopened but available
- Select appropriately sized vials
- Use prefilled syringes, especially for 'just in case' medications
- Align stock levels with clinical use to avoid expiration waste and shortages requiring last-minute air shipments

## **Reduce Anaesthesia Equipment and Supply Waste**

- Open essential equipment and supplies only, while keeping others unopened but available
- Use re-usable equipment, textiles and attire in preference to single-use disposable equipment
- Minimize pre-packed kit contents by excluding seldom-used items
- Align stock levels with clinical use to avoid expiration waste and shortages requiring last-minute air shipments
- Avoid excess adoption and replacement of electronic devices

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## **Reduce Energy and Water Consumption**

- Minimize heating, ventilation, and air conditioning (HVAC) settings during off hours
- Power down equipment when not in use
- Load disinfectors and steam sterilisers efficiently before running
- Install motion sensors for room lighting and at hand wash stations
- Require efficiency upgrades when replacing capital equipment

## **Waste Disposal Management**

- Separate waste according to locally regulated treatment requirements (e.g., biohazardous, pharmaceutical, regular solid waste, recycling)
- Establish and require vendor take-back programs for responsible reuse and disposal of equipment, unopened medication, and packaging
- Prioritize waste prevention and reuse, and recycle only as a last resort

## **Advance Evidence Generation, Knowledge Translation, and Implementation**

- Establish and track key performance indicators at the clinician, department, and health system levels, and set performance improvement goals and timelines
- Support dedicated leadership roles with protected time to oversee performance improvement
- Support sustainability research and quality improvement
- Require core competencies, and provide graduate and post-graduate education