

# The Association of Anaesthesiologists of Malta (AAM)

## How to improve sustainability in anaesthesia and intensive care: situational awareness and national initiatives.

### Do you have national guidelines on sustainability?

Unfortunately, at the moment, there are no national guidelines on sustainability. However, the AAM is making it their priority to implement guidelines targeted towards sustainability. This has started with the assembly of a Sustainability Subcommittee who have created and started executing several initiatives to increase sustainability, including introducing sustainability guidelines.

### Does technology allow you to follow existing guidelines?

Despite the fact that there are no official guidelines, we are fortunate to have the technology and equipment available at our fingertips to enable us to develop and follow sustainability guidelines. This technology includes ultrasound machines for regional techniques, modern anaesthetic machines for low flow anaesthesia, TCI pumps for TIVA and so on. We are currently in the process of acquiring even more modern equipment to enable us to fulfill these sustainability goals more efficiently.

### Are there any exemplary cases of sustainability in centres in your country?

Mater Dei Hospital is the major public acute hospital and also the university hospital in the Maltese islands and is the current leader in sustainability initiatives. There has been an increased interest in sustainability and the environment over the past few years. This can be shown in the introduction of reusable cutlery and water bottles being given to each hospital employee, audits and re-education of physicians on sustainable practices. Mater Dei Hospital is currently the fore-runner in implementing sustainable practices. Recently, a hospital engineer won a Public Service Award for optimizing the heat recovery system in the hospital's chillers. This allows the excess heat produced by the chillers to be used in the pre-heating of domestic hot water and provide space heating. This in turn enabled the hospital to save 1,154,095 litres of fuel and reduce CO2 emissions by 3,096,000 kg in the year 2022.

### What barriers have you encountered to sustainable practice?

The greatest barrier to increasing the uptake of sustainable practices has undoubtedly been education. We have found that people will not readily change current practices which have been ingrained in them unless they are made aware of the consequences of their practices. They should be given autonomy and encouraged to identify and realize their personal responsibility as part of a whole, in the pursuit of better sustainable practice. The other large barrier is a lack of high level commitment towards sustainability and the lack of communication between people on the floor and the management. Other, less significant barriers have been lack of infrastructure, requiring prolonged procurement processes, and lack of equipment in some circumstances, both of which are relatively easily rectified and plans have already been set into motion to correct these lacunae.

## Reducing Waste



Reusable cutlery for personal use



Personalised mugs and water bottles



Reverse osmosis system installed in each working station

Desflurane logbook

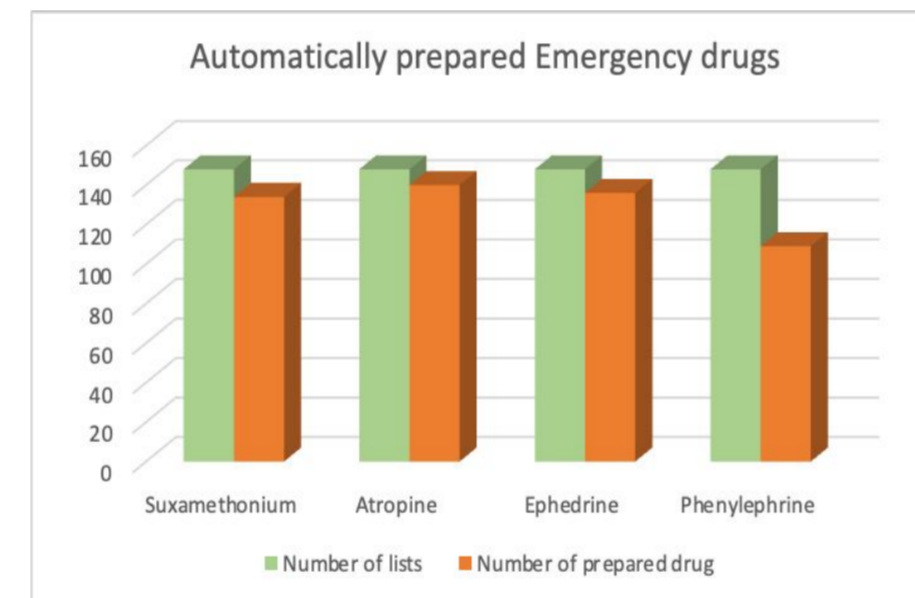
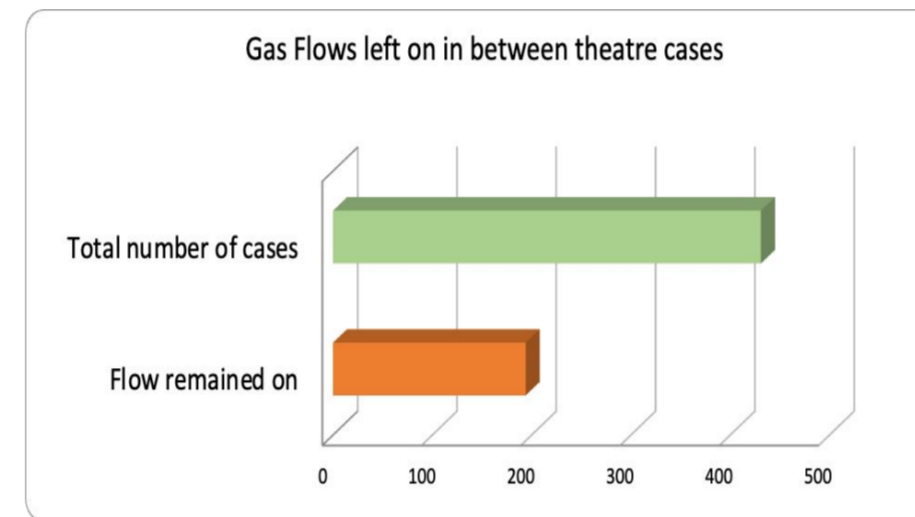
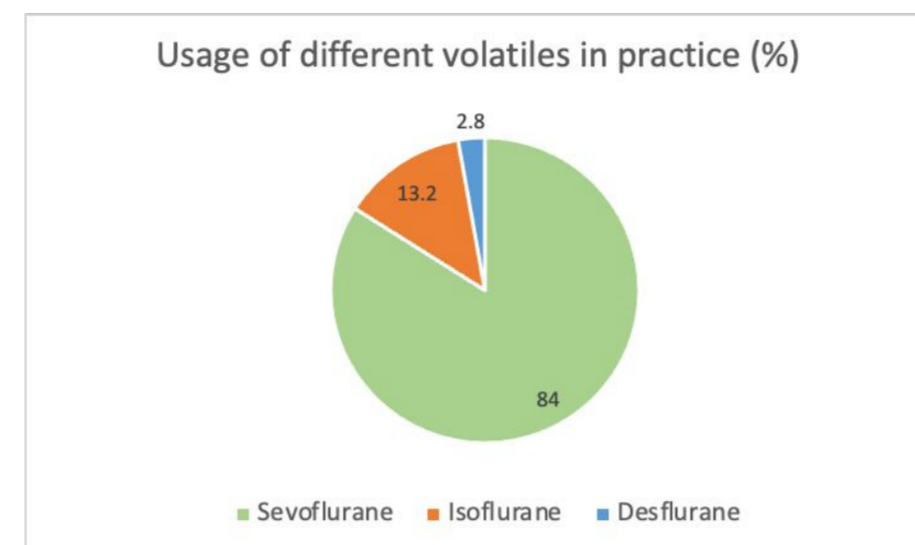
Date	Theatre list	Operation	Indication to use desflurane (surgical and/or patient factors)	Length of anaesthesia	Patient BMI

In case of Desflurane, the medical indication needs to be recorded



100% carbon neutral scrub caps to replace disposable caps

## Baseline Audit Findings



## Encouraging Sustainable Transport

## Introducing Waste Separation



## OUR ACTIONS

## Educational Campaign

## CONSCIENTIOUS ANAESTHESIA

1. Be aware that the carbon footprint of TIVA and regional anaesthetic techniques are significantly lower, compared to volatile anaesthetics and should be used whenever possible.
2. Use all halogenated drugs at the lowest possible fresh gas flow (FGF), even during induction. Set FGF during maintenance of anaesthesia at minimal-flow (< 0.5 L/min), whenever safe and technically feasible.
3. Choose Desflurane only when strictly clinically indicated and where there is no valid alternative (carbon footprint x25 that of sevoflurane).
4. Use Nitrous oxide only when other alternatives are not available.
5. Use 50ml or 100ml saline bags to dilute medication instead of single use 10 ml saline ampoules.
6. Consider not drawing up an emergency drug automatically IF a pre-filled alternative of an emergency drug is available in theatre.
7. Reserve Propofol 30mL bottles for TIVA/TCI syringes and lists with multiple cases. Avoid leftovers and remember to discard medication in a designated area, not in the sink!
8. Unless waste is visibly soiled, dripping, or caked with blood or body fluids, it is classified as general waste so do NOT THROW IN YELLOW BIN.
9. Place the anaesthetic machine and monitor on standby at the end of each case and make sure gas flows are zero. Lights in your offices, rooms and theatres should be switched off when not in use.
10. Walk or cycle to work or use other green transport methods, promote less carbon intensive virtual conferences and meetings.

## Our Future Plans

- Introducing recycle bins in operating theatres (OT)
- Further educational campaigns on the use of reusable equipment and minimising wastage of drugs and energy
- Creating an official sustainability guideline
- Small group training and extension of our campaign to the whole OT staff and the intensive care unit
- Replacing disposable caps to reusable ones for the whole OT staff
- Cooperation with hospital management and implementation of new innovations
- Procurement of pre-filled emergency drugs and modern anaesthetic machines with built-in pEEG option
- Auditing after implementation of our new initiatives to assess the guideline impact and re-auditing
- Integrate training about sustainability into our continuing medical education (CME)