

TOWARDS A SUSTAINABLE OPERATING ROOM : FEEDBACK ON ACTIONS CARRIED OUT AROUND MEDICAL DEVICES

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BACKGROUND AND IMPORTANCE

Since 2022 within our healthcare establishment, a **multi-professional think tank** has been engaged in the implementation of a sustainable development approach with **3 objectives** : reduction of the volume of waste, energy saving and fight against pollution in the Operating Room (OR).

AIM AND OBJECTIVES

Rationalize Medical Device (MD) references and move some defined as uncritical in terms of infectious risk, sterile single-use double packaging, towards reusable "resterilizable". The approach was applied to skin preparation sets, electric and cold scalpel handles.

MATERIALS AND METHODS

- A working group was created, made up of *pharmacists, pharmacy technicians, OR managers, OR nurses, sterilization and hygiene service.*
- The number of references, quantities ordered, and the annual budget spent in 2022 were evaluated.
- For the skin preparation sets only, an audit among OR nurses was carried out to assess usage practices and to find out if switching to re-sterilizable MDs for the skin preparation stage was possible.
- The organizational, economic and environmental impact was assessed.

RESULTS

	Skin preparation sets 3 references including 2 with a deteresion set	Electric scalpel handles 1 reference <i>Maintaining single-use electrodes</i>	Cold scalpel handles 2 references <i>Maintaining single-use blades</i>
Quantity (2022)	15 690 units	15 455 units	12 310 units
Cost (2022)	70 547 €	24 092 €	2 050 €

Audit carried out over the period February-March 2023 on the use of skin preparation sets :

Evaluation grid for the use of skin preparation sets in the operating room			
Objective : Optimization/rationalization of the use of skin preparation sets as part of an eco-responsibility project in the operating room.			
Date :			
Audited person :			
What is your surgical specialty ? :			
• For skin preparation of the surgical site, what reference(s) do you use ?			
			Other(s) : Specify :
• Do you use everything provided in the whitewash set(s) ? Circle/Highlight the items concerned			
Deteresion 1 tray with 2 integrated cups 1 brush 2 washcloths 3 absorbent towels	Deteresion 1 tray with 2 integrated cups 1 brush 2 washcloths 3 absorbent towels	1st skin preparation 1 tray with 1 integrated cup 1 sponge stick	Comments :
1st skin preparation 1 tray with 1 integrated cup 1 sponge stick	Surgical skin preparation 1 tray with 1 integrated cup 1 sponge stick	Sponge stick Cup	
• For the skin preparation step, is it possible for you to use the following elements (present in the instrumentation boxes) :			
- Cups ?	OUI	-	NON
- Tampon-holding forceps ?	OUI	-	NON
Remarks :			

- The 12 respondents to the audit declared using 100% of the skin preparation set, whatever the reference.
- 75% were in favor of integrating cups and tampon-holding forceps into the surgical instrumentation boxes for the skin preparation stage.
 - The main reason for refusal was linked to the fact that a sponge stick remained more practical for large areas.

Considering these results and according to the recommendations of the SF2H on the deteresion stage, the working group made the following decisions :

- Removal of the 2-skin preparation sets including a deteresion set and integration of re-sterilizable cups in the surgical instrumentation boxes.
- Reference of a double-packaged sponge stick and maintenance of a skin preparation set (cup + sponge stick) in single packaging.
- Updates to procedures concerning skin preparation for surgery and provision of washcloths and non-sterile care pads for the deteresion stage if necessary.

What impact for the sterilization service and the OR ?

- Carrying out a computer request to identify the 684 instrumentation boxes containing more than 20 instruments, with at least one pair of scissors.
- Determination of the quantities necessary to include in the 684 boxes: 1 cup, 1 electric scalpel handle and 2 cold scalpel handles. To overcome the hazards, a few additional units of re-sterilizable cups remain necessary.
- Upon receipt, MDs are washed three times and placed in the designated area.
- Modification of listings by specialty and integration of MDs into instrumentation boxes by sterilization agents.
- The purchase cost of the 3 re-sterilizable MDs represents approximately €43/box, i.e., an investment of €27,600 (purchases made by the OR). The sterilization cost remains zero since these boxes are already in circulation.
- The estimated gain for the OR at the end of the 1st year is €43,000, i.e., a reduction in CO2 emissions of 13,545 kg (315kg CO₂ per k-euro (€1000) on average)⁽¹⁾
 - It includes the cost of eliminating the consumption of skin preparation/deteresion sets (-70.5K€), eliminating the consumption of electric and cold scalpel handles at SU (-26K€), the referencing of new skin preparation sets (53.2K€), and the purchase of reusable "resterilizable" MDs (27.6K€). The cost incurred by sterilizing satellite quantities of cups is not included in this calculation because these units were already in place before our initiative.

CONCLUSION AND RELEVANCE

- This approach has been validated and has been in place since June 2023. It involves an additional workload for the sterilization department which must be considered at the outset, when defining the need.
- A 6-month evaluation highlighted the need for a reusable kit, consisting of 3 cups and a Kocher forceps, for emergency situations.
- Other actions are in progress, with consideration of the creation of custom packs for regional anesthesia, spinal anesthesia and epidural anesthesia kits at the same time as the implementation of the NRFit® connection.

