Hello everyone, welcome to today's podcast of the Difaem Health community. My name is XXX and I am here with my colleague XXX.

In our last podcast, we talked about cleaning as the first to reprocessing. But there are still other steps that I would like to know about . What comes next? Sterilization?

That depends a bit on the instrument and on the ranking in the Spaulding classification. Semi-critical equipment, endoscopes for example, like gastroscopes or bronchoscopes should not be sterilized – sterilizing may break them – they only need a proper disinfection. These devices should be soaked in a disinfectant solution that is compatible with the instrument for an appropriate time and at the right temperature. The information on what to use, how long and at what temperature normally comes with the respective device and should be strictly adhered to so as not to damage the instrument. After soaking, rinsing and drying, we have to take the following steps .

For instruments that are considered critical equipment like all instruments used in surgical procedures, sterilization is the next step. For sterilization the cleaned instruments must be packed appropriately. For the packing, fabrics are an option as well as metal containers; fluids can be sterilized in glass bottles and even medical paper can be used to pack single items. The most common packing methods, though, are metal containers and fabric. Both of them work well, if done properly. However, a minimum of double wrapping is mandatory. Packages that are sterilized should be labelled before sterilization. The information on the label should include the following: name of the product, name of wrapper, expiry date and/or sterilization date. If it is appropriate, add the word "sterile" and the load number.

As a routine, we have to monitor the sterilization procedure using a combination of mechanical, chemical, and biological indicators. Mechanical monitoring means to check for equipment malfunctions or to verify the sterilization documentation. Chemical monitoring involves sensitive chemicals that change colour when exposed to high temperatures for a certain period of time. They come as tapes, strips or tabs that can be attached on the inside or outside of the sterilized package. Biological monitoring involves tests like spore tests which will not assess the level of sterilization immediately, but provide their results after a certain time.

Preferably, a chemical indicator also should be placed on the inside of each pack to verify sterilant penetration. Biological indicators are the only process indicators that directly monitor the lethality of a given sterilization process. Here spore indicators should be used at least once a week. However, those spore indicators are expensive and not easily available in resource-limited settings. When sterilizing implants that will remain in the body, it is mandatory to check with biological indicators. The mechanical indicators are easier to check: cycle time and temperature through examination of the temperature record chart and an assessment of pressure via the pressure gauge should be done regularly on a daily basis.

Let me wrap this up again: Before we start a sterilization procedure for non-critical, semi-critical and critical equipment, cleaning is the baseline.

Semi critical instruments just need thorough disinfection, mostly by soaking, if possible. The major type of equipment in this category are endoscopes; also, everything, that has to do with ventilation but cannot be sterilized.

Critical instruments must be properly packed in at least two layers, labelled and sterilized. The sterilization must be monitored following several indicators in order to make sure that everything went according to plan and all the microorganisms are killed off.

Yes, that sums it up perfectly. Let me add a final word regarding the storage of processed equipment: It is best to store sterilized packages and items in closed, dry cupboards. Open spaces like windowsills or a shelf under a sink are no appropriate places. The sterilized packages should be handled with care to avoid damage and contamination . Temperature should not exceed 23-25° centigrade and humidity not exceed 60%. In countries with a hot, humid climate, this is often a challenge. It is most important to reduce humidity especially in storage areas for sterilized packages and the operation theatre. This is usually achieved through air conditioning. If an air conditioning is not affordable, a cupboard is the storage area of choice because it will be dryer than the outside environment.

That was a lot to learn about reprocessing equipment. However, I see that proper reprocessing plays a very important role in IPC.

If you enjoyed our information on cleaning, decontamination, disinfection, sterilization and reprocessing, feel free to share it with colleagues or visit our website www.difaem-community.de, where all previous podcasts are still available for download. The next chapter in our IPC series will be how to handle sharp objects.

So stay tuned, because I think this plays a vital role in IPC as well. Until then stay safe and be blessed!

https://www.cdc.gov/infectioncontrol/guidelines/disinfection/sterilization/index.html

https://apps.who.int/iris/bitstream/handle/10665/250232/9789241549851-eng.pdf