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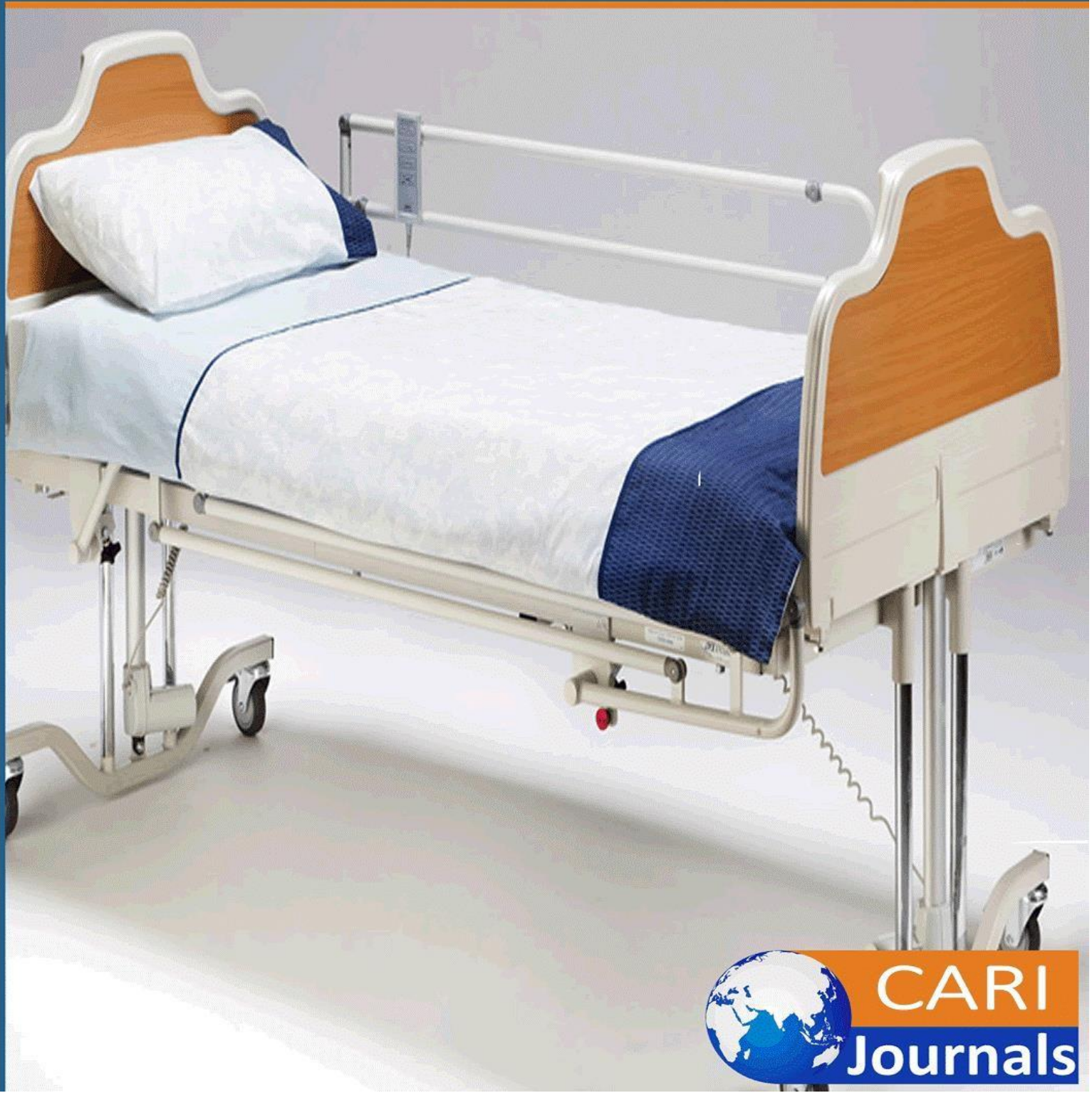

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Evaluation of Medical Equipment Sterilization Practices in the Operating Room of the Essos Hospital Center (CHE)

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Abstract

Purpose: This study aims to evaluate the sterilization practices of surgical equipment in the operating room of the Essos Hospital Center (CHE) in Yaoundé, in order to identify the level of compliance with international standards, potential shortcomings, and avenues for improvement to strengthen the prevention of healthcare-associated infections and ensure patient safety.

Methodology: This is a descriptive and analytical cross-sectional study conducted in the CHE operating room between May 2 and June 2, 2025. Data were collected through direct observation of sterilization practices and the medical device processing circuit using an observation grid developed based on international sterilization recommendations. The evaluation covered the various stages of the process, from pre-disinfection to the sterilization of surgical equipment.

Findings: During the study period, 127 surgical interventions and 48 sterilization cycles were observed. Pressurized steam sterilization via an autoclave was the primary method utilized. Pre-disinfection was performed in 90% of cases, but the recommended soaking time was adhered to in only 16.66% of situations. The cleaning of medical devices was exclusively manual in 100% of cases, with cleanliness control performed in 60% of situations. Instrument drying was compliant in 75% of cases. However, several non-conformities were observed, notably the complete absence of personal protective equipment usage (0%), the lack of cleaning for unused containers and instruments (0%), and the absence of cleanliness, dryness, and functionality controls on devices prior to packaging (0%). Conversely, certain compliant practices were noted, such as the systematic use of sterilization indicators and the execution of double wrapping (100%).

Unique Contribution to Theory, Practice and Policy: This study provides empirical data on sterilization practices in a referral hospital in Cameroon and highlights the discrepancies between observed practices and international recommendations. The findings underscore the need to enhance staff training, improve the availability of protective equipment, and implement standardized protocols to elevate the quality of the sterilization process and the safety of surgical care.

Keywords: *Sterilization, Surgical Devices, Operating Room, Patient Safety, Healthcare-Associated Infections*

INTRODUCTION

Sterilization is a validated process guaranteeing the absence of viable microorganisms in the finished product. The resulting sterile state is defined by a theoretical probability of less than 10^{-6} of finding a viable microorganism (Ano, 2023). It aims to ensure the total elimination of microorganisms, including resistant forms, to ensure patient safety and the quality of surgical procedures. The World Health Organization (WHO) recommends that any reusable medical or surgical instrument be sterilized between each use to prevent any risk of cross-contamination. When sterilization is not feasible, high-level disinfection must be performed to ensure patient safety (WHO, 2005).

The sterilization of medical devices aims to totally eliminate or destroy all viable microorganisms present on a device, including bacteria, viruses, fungi, and bacterial spores. It thus ensures that the medical device is safe prior to its use on the patient, in order to prevent healthcare-associated infections (HAIs) and to ensure the safety of the patient as well as that of the healthcare staff. The use of inadequately sterilized medical instruments constitutes a major factor in the occurrence of HAIs (WHO, 2022).

According to the World Health Organization, over 1.4 million people worldwide suffer from hospital-acquired infections at any given time, and the risk of acquiring them is two to twenty times higher in developing countries than in developed countries. The proportion of patients affected by HAIs is estimated at approximately 4.98% in France, but can exceed 25% in some developing countries. In Africa, prevalence varies by context and can reach 50% or more among patients hospitalized in intensive care units, emphasizing the importance of strict adherence to medical device sterilization procedures in healthcare facilities (Diallo et al., 2022; Rutala & Weber, 2016).

In Cameroon, as in many Sub-Saharan African countries, controlling infectious risks remains a major challenge. This context is characterized by the frequent use of reusable medical equipment, the limited availability of equipment suitable for sterilization, and a lack of continuous training for nursing staff. These organizational and material constraints sometimes compromise strict compliance with standard hygiene and safety norms in the operating room (Minsanté, 2021). In this context, sterilization management is at the center of major concerns in developing countries, particularly in Cameroon, and occupies a central place in the prevention of surgical site infections. Rigorous control of every step of the sterilization process, from pre-disinfection to the storage of sterile equipment, is therefore essential.

The Essos Hospital Center (CHE), as a referral facility, must ensure high safety standards in the operating room. However, the lack of data regarding the compliance of sterilization practices in this hospital justifies the present study. Thus, this study proposes to evaluate equipment sterilization practices in the CHE operating room, in order to identify strengths, shortcomings, and

avenues for improvement likely to contribute to reducing infectious risks and improving the quality of surgical care.

METHODS

This is a descriptive and analytical cross-sectional study conducted in the operating room of the Essos Hospital Center (CHE), located in Yaoundé. Data collection took place from May 2, 2025, to June 2, 2025, and involved all surgical equipment sterilization activities as well as the different teams responsible for their execution. Data were collected through direct observation of the equipment sterilization circuit and the practices of the responsible nurses, using an observation grid developed based on international sterilization standards. This grid allowed for the evaluation of compliance with the various stages of the sterilization process, from pre-disinfection to the storage of sterile equipment.

RESULTS

1. General Characteristics of the Study

During the study period, 127 surgical procedures were performed in the CHE operating room. Concurrently, 48 autoclave sterilization cycles were observed and analyzed. The CHE operating room had 12 healthcare professionals involved at various levels of the equipment sterilization process. The team consisted of one operating room nurse, seven state-registered nurses, one licensed nurse, two nursing assistants, and one biomedical technician responsible for equipment maintenance. This diversity of professional profiles reflects a multi-professional organization likely to influence the homogeneity and compliance of the observed practices.

Table 1: Distribution of personnel involved in the sterilization process in the CHE operating room

Professional Category	**Number (n)**	Percentage
Operating Room Nurse (IBO)	1	8.33%
State-Registered Nurses (IDE)	7	58.33%
Licensed Nurse	1	8.33%
Nursing Assistants	2	16.67%
Biomedical Technician	1	8.33%
Total	**12**	**100%**

2. Organization of the Operating Room and the Equipment Sterilization Circuit

Equipment sterilization at CHE is provided by a dedicated unit located in the left wing of the operating room, favoring functional proximity to the intervention rooms. This unit manages all stages of the sterilization circuit, from the receipt of soiled equipment to the provision of sterile

equipment. Technically, the unit is equipped with two double-door horizontal steam autoclaves. However, at the time of the survey, only one autoclave was fully functional. The Nüve OT 570D autoclave, acquired in 2007 with a capacity of 567 liters, although still operational, experienced recurrent breakdowns limiting its availability. The recent acquisition in March 2025 of the Siemens Smart Line HA-BVD250 autoclave, which is more modern and has a larger capacity of 600 liters, has helped strengthen the continuity and safety of the sterilization process.

3. Equipment Sterilization Methods Utilized

The primary sterilization method observed in the CHE operating room was pressurized steam sterilization using autoclaves. All thermoresistant surgical equipment was primarily sterilized using a standard cycle at 121°C. In certain specific situations, notably in cases of material or organizational constraints or those related to the thermosensitivity of certain medical devices, high-level disinfection was used as an alternative method. Thus, suction tubes were systematically immersed in a solution of Descoton Extra®, belonging to a range of high-level disinfection and cleaning solutions intended for medical instruments and endoscopes. Furthermore, drawsheets and aprons were placed in drums containing formalin for processing. The same treatment process was applied to thermosensitive laparoscopy equipment, for which steam sterilization was not feasible. The choice of equipment processing methods depended primarily on the type of instrument, its heat resistance, the availability of sterilization equipment, and the surgical context.

4. Evaluation of Professional Practice Compliance

4.1. Pre-disinfection

Pre-disinfection was the first step in processing medical devices in 90% of the observed situations. Nevertheless, the recommended soaking time (15 minutes) was rarely adhered to, with the average observed time being approximately 9 minutes in standard situations. This inadequacy worsened in emergency contexts, where not only did the completion of this step drop to 50% of cases, but it was also accompanied by a shorter soaking time of approximately 6 minutes. Furthermore, when pre-disinfection was performed, soaking the instruments in a suitable solution was systematic (100% of cases) and the concentration of the solution was always compliant. However, this rigor did not extend to the entire procedure, particularly concerning the rinsing of instruments after pre-disinfection and before cleaning, which was performed in only 21% of observed cases.

Table 2: Compliance of pre-disinfection practices

Category	Indicators	Results
Execution	Pre-disinfection performed	90%
	Pre-disinfection in emergency situations	50%
Soaking	Soaking performed	100%
	Compliance with concentration	100%
	Compliance with recommended time (15 min)	16.66%
	Average soaking time in emergency situations	6 min
	Average soaking time in normal situations	9 min
Rinsing	Rinsing after pre-disinfection	21%

4.2. Cleaning

Medical device cleaning was exclusively manual via brushing in 100% of the observed cases. Post-cleaning cleanliness control was performed in only 60% of situations. No cleaning of containers, drums, or unused instruments was observed (0%). The drying of instruments complied with recommendations in 75% of cases, thanks to the use of a clean and absorbent drape. However, in 25% of situations, instruments were left to dry directly on the work surface. The wearing of personal protective equipment (PPE) during the pre-disinfection and cleaning stages, aside from examination gloves, was completely absent (0%), exposing staff to biological and chemical risks.

Table 3: Compliance of cleaning and drying practices

Category	Indicators	Results
Cleaning	Manual cleaning	100%
	Cleanliness control after cleaning	60%
	Cleaning of unused instruments and containers	0%
Drying	Compliant drying (clean and absorbent drape)	75%
	Drying on work surface (non-compliant)	25%
Staff Protection	Cleanliness control after cleaning	60%

4.3. Packaging

The packaging of medical devices varied depending on the type of material and available equipment. Instruments were packaged in containers, double-wrapped autoclave boxes, or double-

pouch sterile sleeves, while linens were packaged in drums. However, several major non-conformities were observed. The packaging of devices strictly after effective cleaning and prior checking for cleanliness, dryness, and functionality was never performed (0%). Moreover, the containers lacked filters. Conversely, the application of indicator tapes and sterilization labels was systematic (100%).

Table 4: Compliance of packaging practices

Category	Indicators	Results
Prerequisites	Packaging after effective cleaning	0%
	Cleanliness, dryness, and functionality control	0%
Packaging Compliance	Presence of filters on containers	0%
	Use of chemical indicators and labels	100%
Prerequisites	Packaging after effective cleaning	0%
	Cleanliness, dryness, and functionality control	0%

DISCUSSION

1. General Organization of Sterilization Activity

The results of this study show that CHE has a dedicated sterilization unit, integrated into the operating room and working in collaboration with the central laundry. This organization, although functional, remains fragile due to dependence on a limited number of operational units and certain structural inadequacies.

2. Human Resources, Qualification, Training, and Staff Protection

The sterilization process at CHE is carried out by a multi-professional team including nurses, nursing assistants, and a biomedical technician. Among this staff, only one agent, the operating room nurse (IBO), had received specific initial training on sterilization and good sterilization practices. This diversity of profiles constitutes a potential organizational asset; however, the lack of specialization in sterilization for the majority of the staff can lead to disparities in practices, especially in the absence of standardized protocols and continuous training.

According to the recommendations of the French Society of Sterilization Sciences (SF2S), any operation related to the preparation of sterile medical devices must be performed by staff with defined competencies who have received appropriate initial and continuous training, validated by the responsible pharmacist. This training must cover the entire sterilization process, notably including microbiological principles, the operation of sterilizers, cycle validation, the quality management system, as well as hygiene and safety rules (SF2S, 2021). Similar recommendations

are also formulated by the International Committee of the Red Cross, notably in the Sterilization Guide – third edition (Neville, 2021), as well as in the World Health Organization's guide on Decontamination and Reprocessing of Medical Devices for Health-care Facilities (WHO, 2005), which emphasize the importance of trained and qualified personnel to guarantee the safety and effectiveness of the sterilization process.

Because the sterilization of medical devices is a special process requiring specific technical skills and mastery of critical parameters such as temperature, pressure, cycle duration, packaging, and traceability, staff qualification is a determining factor in the reliability of the process. The NF EN ISO 9001 standard also emphasizes that institutions must ensure the training and competence of staff involved in critical processes and retain evidence of such training. The lack of specialized training observed in this study could thus compromise full mastery of the process.

Similar situations have been described in several studies conducted in Africa. In Cameroon, Josiane Tantchou and Marc-Éric Grunénais demonstrated that, in a context of structural constraints, functions in the operating room are often performed by versatile staff who do not always have specific training (Tantchou & Grunénais, 2009). Comparable observations have been reported in West Africa, notably by Déhainsala (2010) in Burkina Faso, by Traoré et al. (2016) in Mali, and by Sombié et al. (2022) in Senegal, where sterilization is frequently performed by under-trained agents, which can lead to deviations in the application of good practices. This issue is not specific to Sub-Saharan Africa and has also been observed in some North African countries. In Tunisia, Bahri et al. (2014) reported that only 22.22% of staff involved in sterilization activities had received specific training, while in Morocco, Yaakoubi Khbiza (2006) observed an even lower rate, estimated at 18.89%. These results illustrate that the shortage of trained personnel remains a recurring issue in sterilization units in many resource-limited countries and underscores the importance of strengthening specialized training to guarantee the quality and safety of the sterilization process.

Handling soiled medical devices exposes operators to significant biological and chemical risks, particularly during the pre-disinfection and cleaning stages. The recommendations of the French Society of Sterilization Sciences specify that staff protection is indispensable and must rely on the systematic wearing of appropriate personal protective equipment (PPE) (SF2S, 2021). Similarly, the World Health Organization guidelines emphasize wearing PPE before any handling of soiled instruments to prevent occupational injuries and contamination (WHO, 2005). However, in this study, the total absence of PPE usage (0%), apart from examination gloves, during the pre-disinfection and cleaning stages constitutes a critical non-conformity, reflecting a significant gap between the practices observed at the Essos Hospital Center and international safety standards.

This situation is not isolated, however, and aligns with observations reported in several studies conducted in Sub-Saharan Africa. In Mali and Senegal, Traoré et al. (2016) showed that only 33.3% of the hospitals studied had all the required protective equipment in sterilization units, while

other facilities only provided examination gloves as a means of staff protection. Similarly, the study conducted in Burkina Faso by Sombié et al. (2022) reveals an inadequacy of protection resources, with only 6.25% having access to complete protective equipment. These shortcomings must also be interpreted in light of the structural constraints described in the Cameroonian hospital context by Josiane Tantchou and Grunénais, who emphasize that hospital practices are often shaped by limited material conditions and by pragmatic adaptations by staff facing constraints within the healthcare system (Tantchou & Grunénais, 2009). Thus, the absence of PPE observed at CHE reflects not only a compliance deficit with standards but also a broader organizational problem affecting the safety culture and occupational risk management in resource-limited hospital facilities.

3. Organization and Sterilization Device

Although the physical integration of the CHE sterilization unit into the operating room facilitates access, and technically, the presence of two double-door steam autoclaves with a large capacity of 567 and 600 liters constitutes an asset for CHE. Nevertheless, the functional dependence on a single fully operational autoclave at the time of the study represents an organizational vulnerability likely to influence adherence to sterilization circuits and parameters in the event of a technical breakdown, a situation already described in several resource-limited African hospitals (Déhainsala, 2010; Traore et al., 2016).

4. Pre-disinfection of Medical Devices

Pre-disinfection is the first step in the processing of reusable medical devices to reduce the microbial load and facilitate subsequent cleaning. According to SF2S recommendations, medical devices must be immersed immediately after use in a pre-disinfection solution composed of a suitable detergent-disinfectant conforming to current standards. The contact time must respect the manufacturer's recommendations, generally 15 minutes at room temperature (SF2S, 2021). WHO guidelines complement these recommendations by stressing that pre-cleaning or pre-disinfection must be performed immediately after instrument use to prevent organic matter from drying out (WHO, 2005).

In this study, the pre-disinfection of medical devices was performed in 90% of situations, reflecting good integration of this step. However, in emergency contexts, its execution dropped to 50%, revealing organizational shortcomings. Furthermore, the recommended soaking time (15 minutes) was rarely respected, with average durations of 9 minutes in normal situations and 6 minutes in emergencies, compromising its effectiveness. Moreover, rinsing after pre-disinfection was only performed in 21% of cases, constituting a significant deviation from recommendations.

These findings align with inadequacies reported in several African studies. In Mali and Senegal, Traoré et al. (2016) showed that pre-disinfection was only performed in 3 out of 7 hospitals (42.9%), with 50% of hospitals in Mali and 33.3% in Senegal. The study also reports that the use

of standard-compliant products was only observed in 42.9% of facilities (50% in Mali and 33.3% in Senegal). Consistently, in Burkina Faso, Sombié et al. (2022) observed that pre-disinfection was the first processing step in 90% of cases, and it adhered to the solution concentration and soaking time in 0% of situations. These results echo the observations of our study and suggest that deviations in the application of good pre-disinfection practices in resource-limited hospitals are often linked to organizational and logistical constraints, as well as insufficient training of staff involved in the sterilization chain.

5. Cleaning and Drying of Medical Devices

Cleaning is an essential step in processing reusable medical devices because it removes organic and inorganic soils that could compromise the effectiveness of disinfection or sterilization. According to SF2S recommendations and WHO guidelines, this step must be performed after pre-disinfection and can be carried out either by manual washing with brushing or by mechanized washing using a washer-disinfector. Similarly, the thorough drying of instruments is also an important condition to prevent equipment corrosion and guarantee the effectiveness of the sterilization process (WHO, 2005; SF2S, 2021).

In the present study, the cleaning of medical devices was performed exclusively by manual washing in 100% of cases, with cleanliness control conducted in 60% of situations. Drying was compliant in 75% of cases, while in 25% of situations, instruments were left to dry directly on the work surface, which can promote recontamination of the equipment. Additionally, cleaning cleanliness was checked in 60% of cases after cleaning, and finally, unused instruments from procedures and boxes/containers were not cleaned (0%).

These results are comparable to those observed by Traoré et al. (2016), who also reported manual washing of medical devices in 100% of the hospitals studied in Mali and Senegal. Similarly, the study conducted in Burkina Faso by Sombié et al. (2022) highlights that manual cleaning remains the dominant practice in sterilization units in resource-limited hospitals due to a lack of automated equipment and technical resources. Furthermore, instrument rinsing after cleaning was performed in 60% of observed cases, and drying after rinsing was executed in 90% of cases. Cleanliness was not checked after cleaning, and instruments unused during operations were not cleaned even though the boxes had been opened.

6. Packaging and Sterilization

Packaging and sterilization are essential steps to ensure the sterile state of medical devices is maintained until they are used. According to SF2S and WHO recommendations, medical devices must only be packaged after complete cleaning, adequate drying, and verification of their cleanliness and functionality. Sterilization relies primarily on saturated steam at 134°C for 18 minutes, in accordance with the NF EN 285 and NF EN ISO 17665 standards, while other cycles may be used depending on the nature of the devices, notably 121°C or 125°C, or low-temperature

sterilization via hydrogen peroxide (H_2O_2) for thermosensitive devices, under the NF EN ISO 14937 standard (WHO, 2005; SF2S, 2021).

In our study, the packaging of medical devices varied according to the type of material and the available equipment. Instruments were packaged in containers, double-wrapped autoclave boxes, or double-pouch sterile sleeves, while surgical linen was packaged in drums. However, several non-conformities were observed, particularly the lack of prior cleanliness, dryness, and functionality control of medical devices before packaging (0%), as well as the absence of filters on containers (0%). In contrast, certain compliant practices were noted, specifically the systematic application of labels and indicator tapes (100%), the execution of double wrapping (100%), and the use of a 121°C sterilization cycle in 100% of cases.

Comparable shortcomings have been reported in other African studies. In Burkina Faso, Sombié et al. (2022) observed total non-compliance (0%) for several packaging standards, including the exclusive packaging of cleaned devices, cleanliness and dryness control, the separation of cleaning and packaging areas, the existence of written procedures, and packaging quality verification, although the presence of filters on containers was observed in 100% of cases. Similarly, in Mali and Senegal, Traoré et al. (2016) demonstrated that the implementation of secondary packaging was not observed in any hospital in Mali (0%) and only in 33.3% of hospitals in Senegal. Regarding sterilization, these authors also reported low compliance with standard parameters, with only 25% of Malian hospitals adhering to a cycle of 134°C for 18 minutes for metal devices, and no Senegalese hospital applying this cycle. Furthermore, the inappropriate sterilization of certain plastic devices by soaking them in a pre-disinfection solution was observed in 75% of hospitals in Mali and 33.3% in Senegal, illustrating the difficulties of applying technical standards in resource-limited hospitals. These findings confirm that the inadequacies observed at CHE are part of a broader issue affecting the organization and control of packaging and sterilization practices in hospital facilities across the region.

CONCLUSION

This study, which evaluated medical equipment sterilization practices in the operating room of the Essos Hospital Center (CHE), highlights several shortcomings affecting the different stages of the sterilization process. Although the facility possesses a dedicated sterilization unit and suitable equipment, certain organizational, technical, and human weaknesses persist, notably regarding staff training, compliance with pre-disinfection, cleaning, and packaging protocols, as well as staff protection. These inadequacies can compromise the quality of the sterilization process and, consequently, patient and staff safety concerning the risk of healthcare-associated infections. The results observed at CHE fall within a broader context described in several studies conducted in Africa, where organizational and material constraints, alongside insufficient staff training, influence compliance with sterilization standards. Improving practices thus requires the implementation of corrective measures, notably enhancing staff training, developing and applying

standardized protocols, improving working conditions, and strengthening the safety culture within the operating room.

RECOMMENDATIONS

Given the observed shortcomings, it is necessary to reinforce continuous staff training on good practices for medical device processing, emphasizing adherence to the recommended soaking time and the systematic execution of rinsing after pre-disinfection. The establishment and dissemination of clear written protocols, accompanied by visual reminder tools (posters, technical sheets), are also essential to standardize practices. Furthermore, reinforcing supervision through regular audits and practice evaluations would help identify and correct observed discrepancies. It is also important to improve work organization, particularly in emergency situations, to guarantee compliance with key steps despite constraints. Finally, the continuous availability of equipment, pre-disinfection products, and rinsing supplies must be ensured to promote the effective application of recommendations and strengthen care safety.

REFERENCES

Ano, A. S. B. (2023). *Évaluation du respect des normes du processus de stérilisation du matériel médico-chirurgical au centre hospitalier universitaire de Gabriel Touré en 2022* [Thèse de doctorat, Université des Sciences, des Techniques et des Technologies de Bamako]. https://bibliosante.ml/handle/123456789/6676

Bahri, S., Chtourou, E., Chelli, D., Amara, M. B., Jebnoun, S., Rahal, K., & Sfar, S. (2014). Audit des pratiques de stérilisation dans deux établissements hospitaliers tunisiens : État des lieux et perspectives. *Tunis Med*, *92*, 531-535.

Déhainsala, Y. (2010). *État des lieux de l'activité de stérilisation des dispositifs médicaux dans les services de chirurgie du CHU Yalgado Ouédraogo* [Thèse de doctorat en médecine, Université de Ouagadougou].

Diallo, M. B., Camara, A., Oumar, D., Condè, M., Soumah, A. M., Baldè, F. B., Kourouma, S., Bavogui, J. S., Kourouma, K., & Camara, R. (2022). Prévalence et facteurs de risque des infections associées aux soins dans trois hôpitaux nationaux de la ville de Conakry, Guinée. *Rev. int. sci. méd. (Abidj.)*, 175-183.

Minsanté. (2021). *Guide national de la prévention et contrôle des infections dans les formations sanitaires au Cameroun*. Organisation Mondiale de la Santé.

Neville, A. (2021). *CICR guide de stérilisation* (3e éd.). Comité International de la Croix-Rouge.

Rutala, W. A., & Weber, D. J. (2016). Disinfection and sterilization in health care facilities. *Infectious Disease Clinics of North America*, *30*(3), 609-637. https://doi.org/10.1016/j.idc.2016.04.002

Sombié, C., Luc, D. K., Moussa, O., & Rasmané, S. (2022). *Evaluation de l'activité de stérilisation des dispositifs médicaux réutilisables au Centre Hospitalier Universitaire Pédiatrique Charles de Gaulle au Burkina Faso.* Journal Africain de Technologie Pharmaceutique et Biopharmacie (JATPB), 1(1). https://www.researchgate.net/profile/Bavouma-Sombie/publication/364622292

Société Française des Sciences de la Stérilisation [SF2S]. (2021). *Bonnes pratiques de stérilisation des dispositifs médicaux réutilisables : Volume 1*.

Tantchou, J., & Grunénais, M.-É. (2009). Quand les frontières du stérile et du non-stérile s'évanouissent : De l'usage du bloc opératoire dans un contexte de crise du système de santé (Cameroun). *Revue d'anthropologie des connaissances*, *33*(3), 458-484. https://doi.org/10.3917/rac.008.0458

Traore, A. T., Bengaly, L., Keita, M., Cissoko, Y., Sidibe, A. F., N'diaye, B., Thioune, O., & Dieye, A. M. (2016). Différences dans le respect des normes du processus de stérilisation dans des hôpitaux de référence de 3ème niveau au Mali et au Sénégal. *Revue Malienne d'Infectiologie et de Microbiologie*. https://doi.org/10.53597/remim.v0i0.908

Yaakoubi Khbiza, S. (2006). *Organisation d'une unité centralisée de stérilisation au Centre Hospitalier Sidi Lahcen de la préfecture de Skhirat-Temara* [Mémoire de maîtrise, Institut National d'Administration Sanitaire du Maroc].

World Health Organization [WHO]. (2005). *Practical guidelines for infection control in health care facilities*. https://pesquisa.bvsalud.org/portal/resource/pt/who-205652

World Health Organization [WHO]. (2022). *Global report on infection prevention and control*. https://www.who.int/publications/i/item/9789240051164