prospective study in 39 service departments for which sterilization and instrument packing was done by the central sterile supply department (CSSD). Common sterile instrument sets (eg, intercostal drainage (ICD) sets, bone-marrow aspiration sets, or suture sets) were analyzed to set up basic surgical instruments for common procedures and specific instruments for each procedure. Sets for common procedures were then packed and rearranged for use universally in various procedures separately from specific instruments. A questionnaire survey was delivered to all 39 service departments to evaluate user satisfaction. The resterilization rates and cost analyses before and after the rearranging and packing were compared for their effectiveness. The data were analyzed using descriptive statistics for percentage, mean, standard deviation, and inferential statistics. Categorical data were analyzed using the χ^2 test and continuous data were analyzed using a *t* test with significance level of 0.05. **Results:** The resterilization rate decreased significantly from 7.1% to 0.1%. The cost of resterilization decreased from 76,500 Thai baht (US $2,287) to 4,800 Thai baht (US $143) within 1 month. Overall, user satisfaction regarding this intervention was 85.2%. **Conclusions:** This study highlights the need for the evaluation of process and customer demand to improve user satisfaction and reduce hospital cost by customizing the sterilization packaging and rearranging process.

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Subject Category: Sterilization and Disinfection
Abstract Number: SG-APSIC1045
A quantitative assessment of ATP bioluminescence on dental instruments reprocessed by automated washer-disinfector and ultrasonic machine
Vivian Man, National University Polyclinic, Singapore; Tian Cheng Neo, Dental Services, National University Polyclinics, Singapore

Objectives: Dental instruments are contaminated by blood and saliva during dental procedures. To prevent cross infection, all contaminants should be removed from the surfaces of instruments. Inadequate cleaning can hinder disinfection and sterilization process. To compare the cleaning efficacy of an automated washer–disinfector versus an ultrasonic machine on dental instruments, adenosine triphosphate (ATP) measurements were compared. **Methods:** From National University Polyclinic Bukit Panjang Dental Services, we collected 2 loads of 40 dental instruments previously used in dental treatments: extraction forceps, high-volume suction tips, Coupland elevators, matrix band holders, and ultrasonic scaler tips. At the point of use, gross soil was wiped from instrument surfaces with water. Each instrument was swabbed after cleaning either using a washer–disinfector or an ultrasonic machine. The relative light units (RLU) on the luminometer indicated the amount of ATP contaminants and residue bioburden present on the instruments. **Results:** The mean RLU values across all instruments in the washer–disinfector group was 2.5 times lower than the mean value of the instruments in the ultrasonic group (35.4 vs 89.9 RLU). This difference was statistically significant for all instrument groups except for the high-volume suction tips. The Mann-Whitney *U* test indicated that the RLU in the ultrasonic group was higher than the RLU for the washer–disinfector group for extraction forceps ($P < .001$), ultrasonic scaler tips ($P < .023$), and matrix bands ($P < .006$). A *t* test indicated the same relationship for Coupland elevators ($P < .005$). **Conclusions:** The mean RLU values for both cleaning methods were lower than the manufacturer's benchmark (RLU ≤ 150), suggesting that both methods can achieve effective cleaning. However, cleaning using an automated washer–disinfector is significantly more effective than an ultrasonic machine for nonlumen instruments. The effectiveness of cleaning using ultrasonic machine varied greatly among different types of instruments with different design complexities.

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Abstract Number: SG-APSIC1206
Effectiveness of sterilization practice in reprocessing medical devices among different multidisciplinary tertiary-care hospitals in Dhaka City
Sifat Uz Zaman, Jahangirnagar University, Savar, Bangladesh; Nihad Adnan, Jahangirnagar University, Savar, Bangladesh

Objectives: Sterilization failure is one of the main causes of surgical-site infections. We assessed the effectiveness of the sterilization process of surgical instruments to determine the reasons for sterilization failure. **Methods:** In total, 100 sterilization cycles were observed from February 4, 2022, to September 5, 2022, in hospitals in Dhaka City. We used sterilization quality assurance monitoring tools (ie, biological indicators) for rapid steam and ethylene oxide sterilization methods. Tests were performed using an automatic reading machine, chemical indicator strips, and indicator tape for both steam and ethylene oxide methods. For laboratory testing and data collection, APSIC guidelines were followed. All samples were incubated for 48 hours to cross check the accuracy of the auto-reader result. **Results:** All ethylene oxide sterilization cycles were 100% successful, as shown by the rapid biological indicator (auto-reader), chemical indicator strips, and indicator tape. However, 22% sterilization failure occurred with steam sterilization, which was confirmed by the auto-reader, chemical indicator strips, and indicator tape. All biological samples showed no growth after 48 hours of incubation, except the sample from steam sterilization, which did show growth after 48 hours of incubation. **Conclusions:** We detected 22% steam sterilization failure, and serious harm to patients could occur if these surgical instruments were used for surgery. Process recall would not have been not possible if rapid biological indicator tests had not been performed and other chemical monitoring tools had not been used. The regular use of monitoring tools according to guidelines can be a reliable solution to reduce surgical site infections caused by inappropriate sterilization of surgical instruments.

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Subject Category: Sterilization and Disinfection
Abstract Number: SG-APSIC1130
Zero wet pack Pimporn Sirikraiwattanawong, Thailand

Objectives: We noted moisture in Thompson retractor sets after steam sterilization in our hospital. Moisture can cause severe problems leading to potentially contaminated instruments that carry infection risk to patients and cause procedure delays, wasted time and effort, greater workload, and higher costs. We sought to reduce the number of retractor sets with moisture to zero. **Methods:** The central sterile supply (CSS) team discussed the cause of the problem. We hypothesized that temperature difference between the sterilizer chamber and inside the container might create condensation and thus moisture in the final surgical set. We collected and analyzed data and proposed an experiment to improve the sterilization process. We performed a trial of sterilization process improvements pertaining to proper loading technique and the packaging process. We also evaluated the appropriate drying time for rigid containers. We then rearranged the process and adjusted the cooling time from 30 to 60 minutes after steaming. **Results:** Moisture in Thompson retractor packs occurred because of thicker, rigid containers. We removed the previous type of lining material to separately steam the rigid surgical instrument, and we extended the cooling time to 60 minutes. We updated standard operation procedures and continued to monitor and re-evaluate the process. **Conclusions:** We identified the primary cause of moisture in Thompson retractor sets after steam sterilization. We illustrated that avoiding sterilizer overload, avoiding contact with fabric wrapping materials, and proper cooling time kept