Subject Category: Sterilization and Disinfection
Abstract Number: SG-APSIC1024
The importance of the washing evaluation of flusher disinfector in the medical site: Visual evaluation with the ISO standardized test soil and adenosine triphosphate level
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Objectives: We examined the washing evaluation method of the flusher disinfector installed in the medical site by visual evaluation using an ISO test soil and adenosine triphosphate (ATP) measurement. **Methods:** The test soil shown in ISO15883-5 was applied to the bedpan using 2 methods (N = 10) and was then visually evaluated using a 4-step scale. The ATP value on the surface of the bedpan corresponding to each scale was measured, and the correlation with the visual scale was confirmed. In addition, a visual evaluation was performed using a different flusher disinfector and bedpan (N = 3). **Results:** In the visual evaluation, when the test soil was applied to the entire surface of the bedpan, it remained in the parts where the water flow was hard to hit. When the test soil was applied to the surface of the bedpan except the lid, no soil remained. The 4-step visual evaluation scale and the logarithm of ATP value showed a positive correlation. In visual evaluations with different flusher disinfector and bedpan combinations, the residual soil patterns tended to be different. Some bedpans showed washing failure related to improper design. **Conclusions:** Poor cleaning of flusher disinfectors may occur when the amount of water used is insufficient or when the bedpan is significantly contaminated. It is important to carry out flusher disinfector washing evaluation at medical sites to evaluate the function of flusher disinfectors. An appropriate program must be utilized for staff education and appropriate management. Because flusher disinfectors and bedpans differ, flusher disinfector cleaning evaluations should be carried out at all facilities.

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Project quality development of zero stock
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Objectives: Many medical devices and equipment have been reserved in hospital wards and outpatient departments. Among these items, >80% are not often used but are being reserved for emergency situations. We aimed to reduce the number of unnecessarily reserved medical devices and to reduce the cost of unnecessary resterilization of devices and equipment. **Methods:** The central sterile supply department (CSSD), in coordination with other 13 wards within the Thammasat University Hospital, established a standard action plan for improving the efficiency of medical supply stocking and storage. Medical equipment and/or devices were returned to the CSSD, which acted as the center of management and distribution. The CSSD also tracked and solved problems that occurred and reevaluated practice guidelines. User satisfaction was evaluated and statistic data were collected and analyzed. **Results:** Wards no longer reserve medical equipment. Thus, no repeated sterilization was needed for unused medical equipment from the participated 13 wards, and sufficient medical equipment was available for various wards when needed. This project helped reduce the cost of purchasing medical equipment, especially for a newly opened ward. The storage of all medical equipment and devices complied with the practice guidelines because the CSSD storage room had a standard temperature and humidity control system. **Conclusions:** In this project, the CSSD cooperated with the 13 participating wards. As the result of centralizing the supplies, the CSSD has sufficient medical equipment and devices for all other wards, including a newly opened ward. The hospital benefitted from reduced costs of purchasing new medical equipment for a newly opened ward as well as the cost savings of eliminating unnecessary resterilization of unused devices and equipment.

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The quality enhancement in sterilization processes at Naresuan University Hospital
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Background: Disinfection and sterilization of medical devices, instruments, and medical supplies are a crucial part of hospital infection control. The significant problems include insufficient cleaning, incorrect registration in the request form, no basic cleaning at the point of use (POS), and incorrect labelling. These problems were analyzed according using the fishbone diagram process. **Objectives:** We sought to decrease insufficient cleanliness of items after washing, to increase data accuracy in transferring contaminated devices from wards (from end users), to increase the rate of decontamination at the point of use, and to decrease incorrect labelling on instrument packaging. **Method:** The Community of Practice in Sterilization (CoP Sterile) team revised the disinfection and sterilization system of the Naresuan University Hospital Central Sterile Supply Department (CSSD) using root-cause analysis of subprocess problems and implementing prioritized solutions. A regular monthly meeting was set up to ensure active response, and closed monitoring was performed to ensure the implementation of the revised protocol according to the plan–do–study–act (PDSA) process. **Results:** From 2019 to 2021, the percentages of annual insufficient cleanliness of items after washing decreased from 4.8% to 3.6% to 3.1% each year. The percentages of incorrect request forms decreased from 14.59% to 2.91% to 1.84% during these same years. The percentages of decontamination ignorance at the point of use decreased from 3.13% to 0.12% to 0.03% from 2019 to 2021. The percentages of incorrect labelling were 0.013%, 0.008%, and 0.013% each year. **Conclusions:** The CoP Sterile team used quality improvement tools and regular monitoring to achieve reductions in insufficient cleanliness and incorrect request forms and to increase knowledge of decontamination procedures.

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ZeBox: A prophylactic device against airborne infection
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Objectives: Public health emergencies caused by airborne infectious agents are a significant concern, re-emphasized by the current COVID-19 pandemic. It is therefore vital to employ a technology that destroys microbes of all phyla and genera. We describe a novel technology called "Zebox" that can extract, trap, and destroy microbes from the air. This technology destroys even microbes that are resistant to known antibiotics. **Methods:** Airborne microbial load was enumerated using standard microbiological methods in both hospital ICUs and controlled conditions. Significant microbial reductions due to the ZeBox intervention in the ICUs were confirmed by statistical analysis. **Results:** ZeBox eliminated a broad spectrum of airborne pathogens (ie, viruses, bacteria, and fungi) in laboratory tests and in hospital ICUs, which are characterized by high, stochastic microbial loads. In closed-chamber experiments, ZeBox achieved a >99.999% reduction of airborne microbes. In the hospital