

collating, updating, storing, and retrieving data; (5) Data accuracy: With the Staff Health System, data accuracy is ensured, reducing the risk of errors and discrepancies in records. **Conclusion:** Overall, the implementation of this digitalized solution has elevated Mt Alvernia Hospital's service standards by enhancing efficiency and compliance in record-keeping and updating processes.

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Reprocessing of single-use energy devices: efficacy cleaning aspect

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Objectives: Energy devices (EDs), such as Harmonic, Ligasure, Thunderbeat and Trocar are widely used in Minimally Invasive Surgeries. They are expensive and designed for single use. However, due to the limitation of resources, they have been reused in some cases. Therefore, we aimed to assess the efficacy of EDs reprocessing by Adenosine Triphosphate (ATP) method. **Methods:** This was a cross-sectional description study. After first clinical using, EDs were taken to cleaning. Every ED was cleaned three times. Efficacy cleaning was assessed after each cleaning procedure by ATP method. ATP <200 RLUs (Relative Light Units) was benchmark as efficient cleaning process. **Results:** A total of 611 EDs were studied, including 269 of Harmonic, Ligasure, Thunderbeat, 298 of Trocar, and 44 other types. Detachable devices accounted for about 32.7%. Overall, after three consecutive cleanings, the median ATP values were decreased dramatically (957 RLUs, 160 RLUs, and 62 RLUs, respectively). This was a significant reduction in ATP levels between three stages ($p < 0.05$). There were 63.5%, 84.3%, and 92.8% EDs that had ATP < 200 RLUs after first, second, third cleaning respectively. Approximately 90% of EDs were still functional after three cleaning times. Nondetachable items were to be more difficult to clean than detachable ones ($p = 0.0003$, OR 1.3 [1.1 - 1.5]). **Conclusions:** Our data suggest that monitoring efficacy cleaning of surgical instruments in general and single-use energy devices in particular with ATP can identify a number of different influence factors, like the instrument condition, reprocessing procedure, or especially their structure. ATP measurement seems to be a valid technique that allows an immediate repeat of the manual cleaning if the results exceed the established cutoff of 200 RLUs.

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Effectiveness of visual inspection, practices observation and aerobic colony count to monitor hospital cleanliness

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Background: Enhancing environmental hygiene resulted in a reduction of multidrug-resistant microorganisms colonization and healthcare-associated infections. There has been less studies to compare the effects of practice observation with other methods. This study aimed to compare correlations between visual inspection, practice observation and aerobic colony count (ACC) and verify the effectiveness. **Methods:** A prospective study was conducted in a medical intensive care unit from May 2021 to

November 2022. High-touch surfaces were assessed by visual inspection (clean or not clean) and practice observation (compliant or not compliant) to compare the correlations by using ACC with the cut-off point of 2.5 CFU/cm² as a golden standard. **Results:** Among 569 samples, the pass rate by ACC was 90.5%, the clean rate by visual inspection was 73.3%, and the compliant rate by practice observation was 47.1%. The concordance was 245 surfaces (43.1%) of the three methods. There was no correlation between visual inspection and ACC ($p < 0.001$, $\phi = 0.184$). The correlations were weak positive between visual inspection and practice observation and between practice observation and ACC ($p < 0.001$, $\phi = 0.212$, 0.233). The median aerobic colony count of "compliant" group (0.00 CFU/cm²) was significantly lower than "not compliant" (0.40 CFU/cm²) ($p < 0.001$). The median aerobic colony count of "clean" groups (0.08 CFU/cm²) was also significantly lower than "not clean" groups (0.20 CFU/cm²) ($p < 0.001$). **Conclusion:** Practice observation is more reliable than visual inspection. Therefore, visual inspection can be used for low risk area to maintain visibly clean. In high risk area, an integrated program is critical to combine practice observation with other methods to monitor cleanliness.

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Effectiveness and implementation outcomes of the multimodal strategy in IPC for pediatric ventilator-associated events at a provincial hospital in Vietnam: a hybrid II implementation design

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Background: Vietnam has the national guidelines for infection control in hospitals and it also recommends the application of WHO's IPCAF framework to do self-evaluation of infection prevention and control (IPC) activities and plan to improve them in hospitals. **Objective:** Our study aimed to implement the multimodal strategy for IPC, in which our expected outcome was the practices of doctors and nurses for pediatric ventilator-associated events (Ped-VAE). **Design:** We used the implementation research approach with the hybrid design of quasi-experimental pre-post comparison without control group. All 16 doctors and 32 nurses at the Department of PICU were observed 3 times that practicing the IPC packages for PedVAE guided by MOH. The implementation strategies used included Plan, Restructure, Train, and Quality Management. **Results:** Four over six steps practised by doctors and 5/10 steps practised by nurses for PedVAE were well practised after the intervention with significantly higher proportion of right practices ($p < 0.001$). The practices of doctors had insignificant changes between pre-post intervention, including hand hygiene (85.4% and 83.3% of right practice at pre-post intervention, respectively) and daily assessment of weaning from mechanical ventilation (54.2%-68.7%). Most unchanged practices among nurses were steps of ensuring humidification and heating of inhaled gas for in patients with artificial airway. All practice scores of the whole steps among doctors and nurses had statistically significant increase after intervention. Our implementation strategies were highly assessed by providers (doctors and nurses) and hospital managers in terms of the its acceptability, feasibility and sustainability. **Conclusion:** The implementation of multimodal strategy in IPC for pediatric ventilator-associated events is effective and acceptable and feasible for hospitals at city/province level in Vietnam. In addition with improving practices of healthcare staffs, hospitals should regularly assess and upgrade ventilators machines to ensure the effectiveness of IPC.

Key words: infection prevention and control; infection prevention and control assessment framework (IPCAF); pediatric ventilator-associated events (Ped-VAE); multimodal strategy

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