

## Abstract

This research project was carried out to implement strategies for effective maintenance of a prioritized “non-medical equipment” at Base Hospital Homagama (BHH). It aimed to prioritize and select a “non-medical equipment” and to develop and implement strategies for effective maintenance of the selected equipment. Non-medical items of importance were selected using the two criteria, frequency of breakdown and impact on patient care. Operation Theatre, Intensive Care Unit and Labour Room, AC maintenance was prioritized and selected for the intervention due to its high impact and frequency of breakdown. During the project formulation phase, both qualitative and quantitative techniques were used to study the process and practices. Qualitative techniques, including Focus Group Discussions and Key Informant Interviews, were mainly used for gap identification and designing of the interventions. Quantitative techniques, including a Self-Administered Questionnaire and checklists were used to obtain baseline data and assess the effectiveness of the interventions. Based on pre-intervention findings, literature reviews and comprehensive stakeholder participation feasible interventions were planned and implemented. Three months after the interventions, the post intervention phase was undertaken using the same instruments to assess the effectiveness of the improvements. Results showed that there was an undue delay in getting ACs repaired once broken. Other issues identified were the non-availability of a service agreement, absence of separate maintenance logbooks and maintenance schedules, lack of clear directives and non-assignment responsibility for regular maintenance operations. A package of strategies was developed to address the deficiencies in effective maintenance of ACs. The main strategy was the development of a Standard Operating Procedure (SOP) and ensuring its use for maintenance activities. This SOP describes specifications especially recommended for Operating Theatres, Intensive Care Units and Labour Rooms and step-by-step practices to be carried out for AC maintenance. Other strategies were establishing an AC service maintenance agreement; staff training and maintenance of log sheets and maintenance schedules, as per the SOP. Post intervention results revealed that the involvement of all the stakeholders in project formulation and implementation had improved their level of satisfaction; increased process knowledge and awareness; increased traceability and reduced the mean AC downtime from 5.21 days  $SD \pm 0.832$  pre-intervention to 2.33 days with an  $SD \pm 0.5$  after intervention; this was statistically significant at 5% level. In conclusion, developing a SOP and ensuring its use for maintenance activities namely, use of four different types of maintenance log sheets, signing an

AC service maintenance agreement and staff training has improved AC downtime and the percentage of breakdowns repairs completed within 24 hours; reduced repeated breakdown of the ACs, thereby significantly increasing the level of satisfaction among all the stakeholders in this process in BHH.

**Keywords: Air Conditioners, standard operating procedure, Maintenance agreement, downtime, Base Hospital Homagama**