

ABSTRACT

Introduction: Hospitals must ensure that their critical items of medical equipment are safe, accurate, reliable and operating at the required level of performances. Scarcity of financial resources has resulted limited Inspection and preventive maintenance activities for the items of medical equipment in the hospitals of Sri Lanka. There is no standard criteria method applied for selecting items of medical equipment for maintenance strategies such as annual service agreements in public sector hospital in Sri Lanka.

Objective: To implement effective medical equipment preventive maintenance practice in relation to service agreements of DGH Nawalapitiya.

Methodology: The study was carried out in year 2016 and a comprehensive data base for the medical equipment was developed initially. The 'Wang-Levenson criteria' were applied to prioritize the items of medical equipment in order to select the items of medical equipment for annual service agreements. Adjusted Equipment Management Ratings (AEMRs) were calculated for each equipment under study by a nominated panel. AEMR is calculated based on mission criticality, maintenance requirement, utilization rate and risk associated with the equipment ($AEMR = (\text{Mission Critical Rating} + 2 \times \text{Maintenance}) \times \text{Utilization} + 2 \times \text{Risk}$).

Results: Total of 642 items of medical equipment were identified in the hospital and 430 (66.9%) items and 212 (33.1%) items were found to be functional and non-functional respectively. According to the Wang - Levenson criteria adjusted equipment management ratings (AEMR) were calculated and the functional items of medical equipment were prioritized in a descending order. AEMR values were varying from maximum value of 30 to minimum value of 2.

Conclusions: Prioritization based on scientific criteria is a quantifiable method of selecting medical equipment for maintenance decisions. The study demonstrated the applicability of a scientific method, which is already lacking in the Sri Lankan public health sector for medical equipment management. The new method was accepted by the Central Provincial Health Department. The Provincial Health Department has already taken initiatives to implement the new method at DGH Nawalapitiya and planning to implement it in the other health care institutions of the province.

Key Words: DGH Nawalapitiya, Medical equipment, Wang & Levenson criteria, prioritization, Annual service agreements.