DEVELOPMENT OF ASSET MANAGEMENT STRATEGIES FOR CRITICAL CARE EQUIPMENT AT KENYATTA NATIONAL HOSPITAL

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Declaration

This research thesis is my original work and has not been presented for a degree in any other university or for any other award.

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Abstract

Availability of specialized medical equipment plays a critical role in delivery of healthcare services. This becomes more critical in developing countries where these equipment's are available in few public hospitals and do not commensurate with demand for them leading to overutilization. This may result to frequent failure of the medical equipment leading to low asset availability and lack of access to affordable and quality healthcare by the disadvantage in the society. The purpose of this research is to evaluate the existing asset management practices and from the findings, then propose an enhanced operation and maintenance protocols for the Kenyatta National hospital.

The approach first consisted of developing a structured approach to collecting and analyzing maintenance data. Then a risk based approach that systematically identifies and prioritizes failure mode was developed. A modified Failure Mode and Effect Analysis (FMEA) and Pareto analysis was utilized to prioritize the critical failure modes at the hospital. Root cause analysis using 5 Why's analysis was applied to identify potential root causes for the prioritized failure modes. Finally the formulation of effective mitigation strategies was addressed through the development of maintenance and operator protocols. The research showed that a single policy or strategy cannot effectively address asset maintenance strategies of a hospital. A combination of various operation and maintenance policies as well as incorporation of skills, tools, and procedures for managing the critical care devices proved appropriate. The developed maintenance and operator protocols can be used in other government hospital to formulate mitigation strategies which address critical failure in medical equipment.