



شبكة المعلومات الجامعية
التوثيق الإلكتروني والميكروفيلم

بسم الله الرحمن الرحيم



HANAA ALY



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شبكة المعلومات الجامعية التوثيق الإلكتروني والميكروفيلم



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التوثيق الإلكتروني والميكروفيلم

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TARGETED DECISION SUPPORT SYSTEM FOR EFFECTIVE MAINTENANCE MANAGEMENT OF MEDICAL EQUIPMENT IN HEALTHCARE ORGANIZATIONS

By

Marwa Amr Abdelhakim Mohammed

A Thesis Submitted to the
Faculty of Engineering at Cairo University
in Partial Fulfillment of the
Requirements for the Degree of
MASTER OF SCIENCE
in
Biomedical Engineering and Systems

FACULTY OF ENGINEERING, CAIRO UNIVERSITY
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Title of Thesis:

Targeted decision support system for effective maintenance management of medical equipment in healthcare organizations

Key Words:

Medical equipment; Preventive Maintenance; Multi criteria decision making; Analytical Hierarchy Process; Service contracts.

Summary:

Health-care industry is a globally industry targets patients care and it's highly dependent on medical equipment. Decision-making on medical equipment management is a daily task for clinical engineers (CEs) and obviously they aim to reach an optimal solution to guarantee availability of well-functioning health equipment with high quality with considering the available resources. In this study; multi-criteria decision making model have been established based on analytical hierarchy process approach to assist CEs in managing and implementing effective maintenance management program for medical equipment. This can be done by helping them prioritizing medical equipment and determining the appropriate frequency for their preventive maintenance. Also, assisting them to get the appropriate decision concerning the identification of the maintenance service provider and the type of maintenance service contract if there's a need to external service provider. Several steps were done and many criteria were selected to develop such model.

Disclaimer

I hereby declare that this thesis is my own original work and that no part of it has been submitted for a degree qualification at any other university or institute.

I further declare that I have appropriately acknowledged all sources used and have cited them in the references section

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Dedication

This thesis is lovingly dedicated to my family who dedicated all their lives for me. They always offered me endless love and unconditional support.

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