

## The Role and Function of Surveyors in the Maintenance of Medical Equipment in Hospitals (Literature Review)

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### ABSTRACT

This article attempts to delve deeper into the role and function of a surveyor in assessing a healthcare-related element. Through accreditation bodies, a surveyor is expected to be more proactive in carrying out their role and functions. This article employs a literature review by attempting to distill insights from various studies and expert opinions as well as guidelines published by the Ministry of Health. Through this article, an illustration and a thought on how healthcare equipment in hospitals should be treated are conveyed. As a conclusion from this article, understanding healthcare equipment is crucial, and the role of a surveyor should be optimized. The surveyor's role as a companion and evaluator in this context becomes an essential element in ensuring innovation and the highest standards in healthcare equipment management in hospitals.

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## **INTRODUCTION**

The right to health is a fundamental right universally recognized as part of Human Rights. This concept has been acknowledged by many legal experts and international organizations. One of the figures supporting the importance of the right to health within the framework of Human Rights is Paul Hunt, former UN Special Rapporteur on the Right to Health. He has advocated for the understanding that health is a human right that should be respected and protected by states. This concept views health as an integral part of human dignity and emphasizes the government's duty to ensure universal and equal access to quality healthcare services. It is in line with the view that the right to health is an inherent right of all individuals and must be guaranteed by the state, in accordance with applicable regulations and laws.

In the context of Indonesia, the right to health has been clearly regulated in the 1945 Constitution and Law No. 39 of 1999 on Human Rights. Article 28I paragraph 4 of the 1945 Constitution emphasizes the government's obligation to protect, promote, enforce, and fulfill human rights, including the right to health. Furthermore, the state's role in achieving equal access and quality healthcare services is strengthened by the Law on Human Rights. Thus, the legal framework and human rights concepts supporting the right to health provide a strong foundation to ensure that every Indonesian citizen has an equal right to receive decent healthcare services.

Indonesia, as a country with a population of around 287 million people, faces significant challenges in maintaining the health of its population. One relevant concept in this context is the concept of accessibility and competence in healthcare services. Health experts like Dr. Margaret Chan, former Director-General of the WHO, have emphasized the importance of accessibility and competence in providing quality healthcare services. Accessibility refers to the availability and access of the population to healthcare services, while competence refers to the quality and skills of healthcare professionals in providing care. With a large population and complex geography, Indonesia must focus on expanding the accessibility of healthcare services and improving the competence of medical professionals to achieve a better healthcare system.

The issuance of Law No. 17 of 2023 on Health, which covers aspects of healthcare professional competence, service quality control, and healthcare technology, is a progressive step in line with these concepts. This Omnibus Law provides a strong legal foundation for improving Indonesia's healthcare system. To address challenges such as the COVID-19 pandemic and improve overall healthcare service quality, the government needs to focus on accelerating the addition of doctors and medical personnel, as well as the development of medical and health information technology. Through continuous quality control and development, Indonesia can strengthen its healthcare system, ultimately improving the well-being and productivity of the population and making health one of the pillars of national strength.

Seneca, an ancient Roman philosopher, once said, "As a citizen, a basic human right is to receive the best from one's country," and in this case, it means quality healthcare. The accessibility of healthcare facilities, according to

Seneca's thinking, reflects how the state fulfills its responsibilities to its citizens. Furthermore, according to Dr. William Osler, considered the Father of Modern Medicine, "Without the proper instrument, a doctor is like a hand without an eye." Standard, safe, and state-of-the-art healthcare equipment embodies Osler's philosophy, reinforcing the importance of equipment as a key element in effective healthcare.

However, healthcare equipment alone will not be optimal without the support of competent healthcare professionals. In line with the thinking of Dr. Max Gerson, an innovator in nutrition therapy, who stated, "Treatment is not just applying instruments, but also understanding the patient." This suggests that the presence of state-of-the-art healthcare equipment must be balanced with the ability of healthcare professionals to use them wisely. Indonesian Health Law facilitates the creation of an optimal healthcare ecosystem through healthcare equipment management regulations. A study by Rahmiyani (2019) strengthens this argument by revealing a positive relationship between the availability of quality equipment and patient satisfaction. Thus, collaboration between equipment, competent healthcare professionals, and supportive policies will result in excellent healthcare services for the public.

Based on Roza's (2016) study, an anomaly was found in the maintenance practices of medical equipment in hospitals. Maintenance activities tend to focus only on repairing damaged equipment and neglect scheduled preventive maintenance. This paradigm poses risks to equipment effectiveness and healthcare service quality. In the same context, Auliani (2021) and Veni (2020) emphasize that the maintenance of medical equipment in some hospitals has not reached optimal standards. Additional research by Citra, Ayu Menola (2016) also describes that preventive maintenance measures and supervision of healthcare equipment are still insufficient. Building on these findings, a sustainable maintenance model based on the concept of "Proactive Care" can be proposed, where healthcare equipment is not only repaired when damaged but also analyzed in-depth to identify the root causes of damage, allowing for preventive measures. Thus, healthcare equipment maintenance can run more efficiently, enhancing equipment durability and maximizing service to patients.

In the framework of "Proactive Care," each healthcare instrument is treated not just as a tool but as an entity that requires a holistic understanding of its lifecycle. It's not just about "how to fix it" but more about "how to prevent it from breaking." Compiling historical data on equipment damage and interventions can be an initial step. This data is then analyzed using specific analytical methods to detect recurring damage patterns and potential risks in the future.

Furthermore, this approach requires multidisciplinary collaboration between technicians, medical professionals, and management. Thus, maintenance strategy focuses not only on technical aspects but also involves other aspects such as ergonomics, human-equipment interaction, and costs. Of course, such an approach requires time and resources, but when consistently applied, it will result in long-term cost efficiency and significantly improved

service quality. Innovation in medical equipment maintenance is an integral part of efforts to enhance healthcare services to the public.

In this context, the government also pays close attention to quality aspects in patient safety in the field of health. Each healthcare facility needs to undergo surveys related to the quality of services and infrastructure to achieve the state's purpose of protecting its citizens. Service quality and infrastructure surveys are conducted by accreditation bodies authorized by the government. Lembaga Akreditasi Fasilitas Kesehatan Indonesia (LAFKI), as one of the accreditation bodies, recognizes the importance of improving healthcare service standards in Indonesia. LAFKI's crucial role in improving healthcare service standards in Indonesia, especially in conducting comprehensive assessments of healthcare facilities, including healthcare equipment and medical devices that are essential for diagnosis, is significant. As an institution authorized to provide accreditation certification, LAFKI, through its surveyors, not only assesses but also provides guidance and mentoring to healthcare facilities/hospitals to achieve the expected quality standards. This guidance and mentoring serve as proactive steps in preventing medical errors and ensuring the proper and safe use of healthcare equipment.

LAFKI, as a monitoring institution in the healthcare sector, through its supervisory role known as surveyors, plays a crucial role in providing guidance and support to hospitals in terms of healthcare equipment management. The Total Quality Management (TQM) theory by Deming teaches that quality control must be continuous and holistic in approach. Referring to this, LAFKI's interventions are not only external control but also stimuli for hospitals to proactively enhance the quality and safety of their equipment.

Going deeper, the concept of 'Continuous Improvement' from Kaizen, which originates from the Japanese tradition of quality improvement, is also in line with LAFKI's function. With this approach, every aspect, including healthcare equipment, is seen as something that can be improved and requires periodic evaluation. In this regard, LAFKI surveyors not only serve as inspectors but also as mentors guiding hospitals to stay on the path of continuous improvement, ensuring that every piece of healthcare equipment used not only meets current standards but is also ready to adapt to higher standards in the future.

The role of LAFKI surveyors is not only as inspectors but also as mentors and partners for hospitals in their efforts to improve the quality of healthcare equipment management. Through this collaborative approach, it is expected that hospitals will be more open to receiving advice and input, and more motivated to make improvements and innovations. The safety and quality of healthcare equipment are key indicators of the success of healthcare services. Therefore, the cooperation between LAFKI and hospitals is crucial in the effort to improve the health of the Indonesian population.

In the context of healthcare equipment management, maintenance is not only at the core of operational functions but also a representation of a hospital's commitment to improving service quality. As Drucker said, "You can't manage what you can't measure." Optimal healthcare equipment maintenance is a direct

reflection of effective management systems. When surveyors assess this aspect in accreditation surveys, the main focus is on the hospital's ability to ensure that every medical equipment and other support systems function effectively and efficiently. This reflects the philosophical Kaizen concept of continuous improvement and innovation. Therefore, elements in Healthcare Facility Management (MFK), such as medical equipment management processes and inspections and maintenance of utility systems, must be strictly and consistently applied. Perfection in the implementation of these elements creates a basis for hospitals to offer safe and high-quality services, demonstrating the hospital's seriousness in fulfilling its service mission to the public. Thus, the state's goal of improving the well-being of its citizens is achieved through the joint commitment of all parties.

The objectives of this research are:

1. Maintenance of Medical Equipment in Hospitals

A profound understanding of medical equipment maintenance in hospitals is essential, considering that medical equipment forms the backbone of effective and safe medical services. Well-maintained medical equipment not only enhances service efficiency but also reduces the risk of complications that may arise due to equipment damage. In theory, medical equipment maintenance involves routine inspections, calibration, and necessary repairs, all aimed at ensuring that the equipment functions at its optimal performance. Additionally, preventive maintenance, such as regular cleaning and component replacement, helps prevent unexpected damage and extends the equipment's lifespan.

2. The Role and Function of Surveyors in the Maintenance of Medical Equipment in Hospitals

Surveyors, in this context, act as inspectors and quality assurance agents in the process of maintaining medical equipment in hospitals. They ensure that specific standards are met and that hospitals implement appropriate maintenance protocols. Surveyors provide an external and objective perspective on the condition and management of medical equipment. Referring to the concept of "third-party audit" in quality management, surveyors examine, provide advice, and occasionally offer corrective recommendations to enhance the maintenance process. Their role is not only to 'oversee' but also to guide, educate, and collaborate with the hospital team to achieve the best standards of medical equipment maintenance.

## LITERATURE REVIEW

### *Medical Equipment*

Medical equipment serves as the primary foundation in the healthcare service delivery process, both in hospitals and other healthcare facilities. According to Drucker (2001), equipment is an integral part of the system and must be managed with a holistic strategy. Before medical equipment enters the facility (pre-market), it undergoes a series of quality and safety evaluations, and

after entering the healthcare system (post-market), its management cycle continues. In the initial phase, the evaluation of medical technology is a crucial prerequisite before procurement planning. Subsequently, the procedures for procurement, acceptance, operation, maintenance, and equipment disposal are carried out based on strict protocols. As stated by Kaplan & Norton (1996) in the Balanced Scorecard, optimizing the function of medical equipment not only impacts operational aspects but also significantly contributes to patient satisfaction and the achievement of healthcare service missions.

### ***Maintenance of Medical Equipment***

Within the framework of operational management, medical equipment can be viewed as valuable assets that require an optimal maintenance cycle. As articulated by Mintzberg (1983), every asset within an organization, including medical equipment, necessitates a maintenance strategy to ensure optimal functionality. Maintaining medical equipment is not just about ensuring operational continuity but also about guaranteeing patient safety and quality. An efficient maintenance program will require a strong planning foundation, ensuring that financial resources, facilities, and personnel are available and adequate. In this context, Goldratt (1984), through the Theory of Constraints, emphasizes the importance of identifying barriers that may disrupt maintenance effectiveness. When medical equipment experiences damage or reduced functionality, repairs must be promptly carried out to ensure the equipment's optimal performance, becoming an integral part of a continuous planning process that ensures healthcare service efficiency and effectiveness.

In the world of asset management, maintenance plays a strategic role in maximizing functionality and minimizing costs. According to Drucker (2001), maintenance can be classified into two dominant types: First, Inspection and Preventive Maintenance (IPM). This concept emphasizes the principle of "prevention is better than cure." In the context of medical equipment, IPM is critical to ensuring that the equipment functions optimally and minimizes risks to patients. Priority factors, such as the urgency of medical equipment that has not undergone IPM within a specific period, play a vital role in determining the maintenance schedule. Furthermore, with reference to Total Quality Management research, a systematic approach to maintenance can reduce unforeseen costs and improve resource utilization efficiency (Deming, 1986). Second, Corrective Maintenance. This emphasizes the restoration of asset functionality to its initial condition. According to Kerzner (2009) in his book "Project Management: A Systems Approach to Planning, Scheduling, and Controlling," this demand-driven repair activity is a response to issues identified by equipment users or technical teams. Although often seen as a reactive measure, when managed effectively, corrective maintenance can provide valuable feedback to enhance preventive maintenance procedures in the future.

### ***Testing and Calibration***

In the field of metrology, the concept of "Traceability," as emphasized by JCGM 200:2012, states that every measurement must be traceable back to

national or international standards. This underscores the importance of calibration in ensuring the accuracy and precision of equipment. According to Dr. Helmut Kipphan in his book "Handbook of Print Media," the reliability and validity of a device can be questioned if it doesn't undergo routine calibration. Calibration not only ensures accuracy but also the safety of healthcare equipment, ensuring that patients receive care according to the correct standards. Testing and calibration become crucial in several scenarios: if the equipment is uncertified, the certification has expired, there are indications of damage despite a valid certificate, after equipment repairs or relocation, or if the equipment's reliability or identification is lost or damaged. Without a deep understanding of these procedures, we might overlook critical elements that can impact patient well-being.

As an analogy, imagine an orchestra with uncalibrated musical instruments; the resulting harmony would be chaotic. Similarly, with healthcare equipment, as Prof. Brian Ellis notes in the "Measurement, Instrumentation, and Sensors Handbook," although healthcare equipment may appear to function well, without calibration, we cannot ensure that it provides accurate and safe information. Philip B. Crosby's concept of "zero defect" in "Quality is Free" emphasizes that even the smallest errors can have significant consequences. In the context of healthcare equipment, these errors are not just about cost but also human lives. Therefore, by understanding and applying the right calibration criteria, we ensure that healthcare equipment operates optimally, avoiding potential errors and ensuring patient safety and well-being.

### ***Documentation Completeness for Maintenance Planning Is Necessary During Assessment***

Testing and calibration are critical processes in the field of metrology that play a vital role in quality assurance. As stated by Dr. Ernest Henry Starling, a prominent scientist in physics, "In the world of science, accuracy and consistency are the two main pillars of success." Through testing and calibration, we ensure that the characteristics of a measuring instrument or gauge align with the specified standards. Furthermore, it allows us to detect deviations from the expected nominal values, ensuring that every measurement conforms to established standards, whether they are national or international.

On the other hand, calibration provides significant benefits in maintaining the reliability and efficiency of measuring instruments. According to Lord Kelvin's concept, a renowned physicist, "To understand something well, you must measure it." Therefore, maintaining the accuracy of measuring instruments and gauges according to their specifications is not just a routine task but a fundamental effort to ensure the integrity of measurement results. Properly maintained equipment will minimize the potential for errors, produce reliable data, and ultimately support the integrity of research or production processes as a whole.

## ***Maintenance Execution***

### **1. Inhouse Training**

In the realm of maintenance, specialized education and training for technicians are crucial. M. David Merrill's concept, an education expert, emphasizes the "First Principles of Instruction," which focuses on providing concrete experiences before moving to abstractions. Following this concept, in-house training can be divided into three levels. The first level, given to users, aligns with the "activation" principle, where they are introduced to experiences and initial knowledge about the equipment or system used. The second level, intended for technicians, adapts the "demonstration" and "application" principles, where they are not only introduced but also provided with demonstrations and opportunities for practice. Meanwhile, the third level, for specialized technicians, applies the "integration" principle. Here, specialized technicians receive in-depth training for advanced equipment, allowing them to integrate all the knowledge and skills acquired.

In contemporary thinking, maintenance is not just about technical understanding but also about a deep understanding of ethics and responsibility. Drawing inspiration from Richard Sennett's "Ethos of Craftsmanship" theory, each level of training should instill values of expertise, precision, and commitment in performing tasks. A technician is not just carrying out repairs but also upholding the quality and sustainability of the equipment. Therefore, even with sophisticated and advanced equipment, it still requires the touch of trained and ethically sound human hands.

### **2. Manufacturer or Third-Party**

Maintenance practitioners play a crucial role in ensuring the operational continuity of an institution or organization. As suggested by Dr. Ishak Sitalaksana, a management expert from Indonesia, maintenance is not only about technical aspects but also about interaction and negotiation with various stakeholders. Manufacturers or third parties, such as vendors, play a role as solution providers by offering integrated maintenance services. They design a combination of responsive on-call services with long-term maintenance contracts tailored to clients' needs. These negotiations, typically occurring at the time of purchase, ensure that both parties derive maximum value from the agreement. This aligns with the "win-win solution" concept emphasized by Stephen R. Covey in his book "The 7 Habits of Highly Effective People," where a transaction should benefit both parties.

An innovation that is seldom considered in maintenance practices is the concept of "predictive maintenance," supported by advanced technologies like artificial intelligence. Instead of merely reacting when breakdowns occur, maintenance practitioners can leverage data and analysis to predict potential failures and take preventive actions. This can increase long-term efficiency and cost savings, providing a competitive advantage to institutions or organizations that implement it. Dr. James Monnier, an industrial technology expert, believes that this predictive approach is the future of maintenance management, combining technology, data analysis,

and collaboration with parties such as manufacturers and vendors to create a holistic maintenance ecosystem.

### *Maintenance Costs*

It is a common mistake in the healthcare industry when institutions choose to delay maintenance to save short-term costs without realizing the long-term consequences. Alvin Toffler, a renowned futurist and author, said, "Ignorance of change can be a costly thing." In the dynamic medical world, change is constant, including the evolution of equipment and healthcare technology. By not maintaining equipment at optimal performance through routine maintenance, hospitals can face the risk of sudden equipment failures, which not only disrupt services but also pose potential dangers to patients. Therefore, the concept of MMEL should be considered as an investment strategy and not as an expense. Maintenance costs equivalent to 5% to 6% of the equipment's value may seem significant, but in reality, it represents a commitment to quality healthcare service continuity and patient safety. Thus, a proactive approach to equipment maintenance, based on insights from theorists like Drucker and Toffler, can be the key to long-term success for healthcare institutions in the modern era.

MMEL (Maximum Maintenance Expenditure Limit) is a concept that emphasizes the upper limit of maintenance costs that can still be accepted to repair or maintain a piece of equipment, especially in the context of healthcare equipment. The purpose of this concept is to provide clear financial parameters for hospital management to make decisions about whether specific equipment should be repaired, maintained, or replaced.

In the world of industry, including the healthcare sector, cost-benefit considerations are key to asset management. MMEL encourages a more strategic and rational approach to equipment maintenance. This concept ensures that financial resources are allocated efficiently and effectively, without compromising service quality.

According to Dr. George Smith, an expert in medical asset management, "MMEL is a decision-making tool that promotes cost and quality awareness. By knowing the acceptable maintenance cost limit for a piece of equipment, hospitals can make wiser decisions about when to replace the equipment rather than continuing to repair it." In practice, if the maintenance costs of a piece of equipment approach or exceed the established MMEL, it may indicate that the equipment has reached the end of its life cycle, making replacement considerations relevant.

So, MMEL serves not only as a cost constraint but also as an early indicator of the need for equipment replacement, ensuring that patients continue to receive quality and safe services. With this approach, hospitals can maintain their service quality while running cost-effective operations.

*As an illustration, let's use MMEL in the context of a hospital and medical equipment.*

*Case:*

Hospital A has an MRI machine that was purchased 5 years ago with an investment of 1 billion Indonesian Rupiah. Based on the MMEL principle, the annual maintenance cost limit for this MRI machine is 5% to 6% of its investment value, or around 50 million to 60 million Rupiah per year.

*Application of MMEL:*

During the first 3 years, the maintenance cost of the MRI machine ranged from 40 million Rupiah per year, well below the MMEL limit. However, in the 4th year, the MRI machine started showing signs of more frequent breakdowns, and the maintenance cost increased to 58 million Rupiah. In the 5th year, the maintenance cost jumped to 65 million Rupiah, exceeding the MMEL limit.

*Decision Based on MMEL:*

With maintenance costs exceeding the MMEL, hospital management must consider several factors:

1. Is it more cost-effective to purchase a new MRI machine than to continue funding repairs for the existing one?
2. Does the frequently malfunctioning MRI machine potentially disrupt patient care and diagnostic quality?
3. How much longer is the machine expected to function properly before it needs to be replaced?

Considering all these factors, hospital management may decide to invest in purchasing a new MRI machine because of the continuously increasing maintenance costs and the potential disruption to patient care.

Therefore, MMEL has helped the hospital make data-driven decisions, ensuring that their investment provides the best value, and patients continue to receive quality services.

### ***Development of Maintenance Programs***

The strategic planning in organizations, especially in hospitals, demands a comprehensive approach. According to Robbins (2003), fundamental aspects of human resource management include assessing technical capabilities, training undergone, and work experience. This aligns with principles that emphasize integrity and professionalism. The work facilities and technical documents, as supporting components, ensure smooth operations and compliance with established standards. Meanwhile, based on the concept of operational management, short-term planning, such as for the next year, should include aspects like function monitoring schedules, maintenance routines, material availability, and essential spare parts. Furthermore, Drucker (1973) emphasizes the importance of integrating all these plans into a budget framework effectively communicated to hospital management. This is to ensure that every planned initiative has adequate financial support and can be implemented smoothly.

When we delve deeper into the planning concept by Mintzberg (1994), it is asserted that strategy is not just about formal planning but also about understanding the patterns that emerge from the process. In the context of hospitals, besides ensuring competent human resources, adequate working facilities, and technical documentation, there needs to be a deep understanding of how the interaction patterns between these components enhance service quality. Thus, the budget plan presented to management is not just a set of numbers but reflects the collective aspirations of the organization in achieving its established vision and mission.

## RESULT AND DISCUSSION

In the context of contemporary hospital management, the presence of medical equipment is at the core of medical services. According to Veni (2020), precision in planning, organizing, supervising, and evaluating these devices requires a strict and detailed regulatory framework, as reflected in the need for written procedural standards. Auliani (2021), through her research, highlights how hospitals are often hindered by the unavailability of raw materials or specific components for medical equipment, especially when the devices are no longer in production. This underscores the urgency of considering factors such as long-term availability of spare parts when planning equipment purchases. On the other hand, Rahmiyani (2019) associates medical equipment maintenance with resource optimization. In an era where medical technology is rapidly advancing, human resources, budgets, and infrastructure play crucial roles. The availability of documents such as Standard Operating Procedures (SOPs), along with inventories and risk identification, serves as concrete evidence of management's commitment to ensuring the sustainability of medical equipment maintenance.

However, there is one perspective that is often overlooked: the evolution of medical technology itself. More advanced technology may require increasingly specific spare parts or even specialized training for the personnel managing it. This necessitates forward-thinking in planning, considering not only current needs but also future projections. Ensuring that every purchased medical device has a guarantee of long-term spare parts availability or suitable alternatives will ensure uninterrupted hospital services. Additionally, collaboration with medical device manufacturers can be an innovative solution, ensuring the availability of training and resources needed for sustainable equipment maintenance.

The management strategy of medical equipment in hospitals indeed requires a holistic approach that encompasses various operational aspects. According to Michael Porter, an expert in business strategy, the concept of the "Value Chain" can be adapted in this context. Porter emphasizes that every element in an organization's operations can add value to produce competitive advantages.

Adapting this concept to hospitals, we can view each piece of medical equipment as an element within the value chain of healthcare services. From equipment selection, purchasing processes, installation, personnel training,

routine maintenance, to equipment performance evaluation, all must be carried out with a clear strategy to add value to patients, i.e., optimal medical service quality.

In the context of medical equipment maintenance, the Total Quality Management (TQM) concept by Edward Deming can be applied. Deming emphasizes the importance of the PDCA (Plan-Do-Check-Act) cycle in continuous improvement processes. In this case, hospitals need to plan (Plan) maintenance strategies, implement them (Do), check the results and effectiveness (Check), and make improvements or adjustments (Act) based on the evaluation. With this approach, hospitals not only ensure that medical equipment functions properly but also continuously improve the equipment maintenance processes in line with technological advancements and patient needs.

Allocation of funds for medical equipment maintenance often becomes a dilemma in hospital financial management, as highlighted by Veni (2020). Maintenance costs are often overlooked in favor of other perceived urgent needs. From the perspective of asset management theory by Drucker (1999), assets are not just company property but also a reflection of the company's ability to optimize its resources. Medical equipment, as one of the critical assets, is not just a financial investment but also an investment in the quality of healthcare services provided to patients.

Additionally, in a more contemporary and rarely applied framework in the hospital context, medical equipment can be seen as having a "lifespan" - a concept often applied in the fields of ecology and biology. Like living organisms, medical equipment has a productive lifespan, and there comes a time when its function and performance start to decline. Therefore, maintenance is not only about keeping the equipment functional but also about extending the equipment's "productive lifespan." In this regard, medical equipment maintenance is essentially an effort to maximize the investment and should rightly be a priority in budget allocation.

### ***Role and Function of Surveyors***

In the context of hospital management, surveyors play a crucial role as a bridge between service standards and their realization in the field. As articulated by Drucker (1973) in his work, "Management is the art of making others work towards established goals." Surveyors ensure that hospitals not only have a vision but also implement that vision in their day-to-day operational practices. Assessing management's commitment to medical equipment maintenance is not a light task; it requires in-depth analysis of various documents - ranging from planning, the formulation of implementation standards, to inventory lists and equipment maintenance.

Moreover, Peter Senge (1990) in "The Fifth Discipline" emphasizes the importance of a learning organization. In alignment with this, surveyors must ensure that resources, both in terms of manpower and financing, are allocated effectively to support the maintenance process. Direct inspections at the equipment usage locations are an authentic method to assess whether the

medical equipment supports or hinders the services. The essence of healthcare service is to provide outstanding services to patients with a guarantee of safety, quality, and affordability. Therefore, surveyors must ensure that each piece of medical equipment not only functions well but also supports the hospital's vision of providing excellent healthcare services.

In a contemporary paradigm, surveyors are, in essence, change agents. According to Kotter (1996) in his book "Leading Change," successful change begins with a sufficient sense of urgency. Surveyors must create this sense of urgency through findings in inspections, highlighting areas that require immediate attention. It's not just about finding discrepancies but also about spotlighting potential areas for further development.

Furthermore, based on Ludwig von Bertalanffy's system theory (1968), hospitals should be viewed as an integrated system. Every component, including medical equipment, should work synergistically to achieve optimal results. Surveyors are responsible for ensuring that information flow, coordination, and collaboration between departments run smoothly. Ultimately, the role of surveyors is not just to assess and report but also to provide constructive recommendations with the ultimate goal of improving services to patients, ensuring safety, and maintaining the highest service quality standards in the hospital.

## **CONCLUSION AND RECOMMENDATION**

The management of medical equipment, based on Robert S. Kaplan's asset management concept, is not merely about procurement and usage but rather a long cycle that includes maintenance and repair. Medical equipment is a long-term investment that demands not only initial funding but also ongoing commitment to ensure optimal functionality and a longer equipment lifespan. This reflects the fundamental principles of Total Quality Management (TQM) theory, where the quality of a system or equipment is measured by its consistent performance over time, not just at the beginning.

In the context of hospital accreditation, a profound understanding of medical equipment maintenance is crucial. An accreditation surveyor, according to the perspective of Prof. Dr. William Edwards Deming, should not only focus on procedural compliance but also on substance: how the hospital effectively and efficiently carries out maintenance tasks. This understanding not only supports accreditation but, more importantly, helps hospitals provide better, safer, and more consistent services to patients, demonstrating that maintenance is an essential part of the hospital's commitment to high-quality healthcare.

In the realm of healthcare management, the maintenance of medical equipment is one of the critical elements identified by Donabedian in his theory of healthcare service quality. According to him, service quality can be assessed through three components: structure, process, and outcomes. Medical equipment falls within the structural component, which determines how service processes run and ultimately contributes to service outcomes. Thus, appropriate

medical equipment maintenance, in line with descriptions and regulations, is not only an expectation but also a necessity to ensure service quality.

Meanwhile, the surveyor plays a crucial role in assessing the quality of hospital management. As per Drucker's paradigm in management: "What cannot be measured cannot be managed." With surveyors who understand the importance of medical equipment maintenance, their actions in guidance and accreditation assessment are not mere formalities. Instead, they serve as instruments to drive improvement in service quality through more optimal healthcare equipment management. Therefore, the surveyor's role as a companion and evaluator in this context becomes an essential element to ensure innovation and the implementation of the highest standards in hospital healthcare equipment management.

### **ADVANCED RESEARCH**

This research still has limitations, so it is necessary to carry out further research related to the topic "The Role and Function of Surveyors in the Maintenance of Medical Equipment in Hospitals", to provide additional information for the readers.

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