

UNIT – II MEDICAL TECHNOLOGY MANAGEMENT PRACTICES 9

Strategic Medical Technology Planning, Scope , Clinical necessity operational support, strategic planning process - Technology assessment: Technology audit, Budget strategies, Pre requisite for medical technology assessment - Management Practice for Medical Equipment - Device evaluation, Risk reduction, Asset management, ESHTA

2.The Scope of Technology to Be Managed

David and Judd(1993) defined Technology as the use of “tools,” that is any thing that help in performing a task. The technology that has been developed for the health care delivery system ranges from the “smart” facilities to the products that are used in and around the health care services.

Some of the smart facilities are Automated Lighting, Telemedicine Support, RFID for Track equipment, medical devices, Delivery Robots, UV Disinfection Robots: Clean and sterilize rooms efficiently etc

Different “Tools” have been introduced at an increasing rate during the past 100 years including the use of techniques, instruments, materials, systems, facilities, and information.

Most of the medical technology are useful to the human kind but still medical technology is often blamed for increase in health care costs without receiving recognition for improvement in quality and efficiency of the system.

For the past decades several rules were implemented for regulating health care. Some rules are,

- Requires registration of hospitals, labs, and clinics to ensure minimum standards.
- Regulates medical education and licensing of doctors.

For managing the technology the health care organisation should give the reasoning behind its decision. The reason for technology adoption is as follow:

Clinical Necessity

- To meet the standard of care
- Positive result on care quality or level
- improve life quality
- Improve accuracy, reliability, and safety

- Reduce disease longevity/length of stay

Operational Support: operational support refers to how well a technology helps improve, maintain daily functions and processes of an organization or system.

- More effective care/protocol/decision making
- Increased operational efficiency and effectiveness
- Increased development or current service offering
- contribute to reduction in errors
- Reduce dependence on user skill level
- Increase utilization rate and reduce maintenance load

Market Preference

- Impact access to care
- Increase customers' satisfaction
- Improve return on investment (ROI)
- Lower the cost of adoption and ownership
- Impact market share

3.Strategic Planning process

The strategic planning process is a systematic method for defining an organization's goal and making decisions on allocating resources to pursue that goal.

In healthcare, this often includes setting objectives, assessing current resources, and evaluating technological, clinical, and financial capabilities to guide the organization's growth and development over time.

The key components for planning are:

- Regional planning, coordination, and technology assessment
- Strategic technology planning and priority setting
- Budget development and approval processes
- Technology management and service planning
- Technology acquisition

- Technology audit and risk management

A technology strategic plan supports clinical objectives. The ability to plan for the development requires components and budgeting expertise like a clinical engineering professional and finance department. This planning process must include the following elements:

- Creation of a plan to support the vision and communicate its process to staff
- Periodic review of the alignment between the vision and strategy
- Identification of areas/topics where changes are needed.
- creation of a plan to meet the objectives
- The plan should include details of information technology, medical technology, and building spaces—transforming experts' knowledge into service strategy
- interaction with operations and capital budgeting processes, acquisition and deployment timing, equipment asset management, and monitoring and evaluation

In order for the planning process to maximize the value it adds, the planning process must include the following elements:

- The clinical goals are updated annually. Every year the strategic planning process determines the clinical services that the hospital offers in its referral area. These must be projected with accuracy at the outset.
- Take into account health care trends, demographic and market-share data, and space and facilities plans.
- Analyse the facility's strengths and weaknesses, goals and objectives, and opportunities and threats.
- Conduct an audit of the existing technology base, including its condition, life expectancy, and utilization rate.
- Audit and project the costs of health care providers using the existing technology.
- Integrate assessment and prioritization of new and emerging technologies.
- Review technological trends and their operations impact.

If all of these areas are considered, the outcome of this process will be the following:

- A coherent plan that supports the objectives of the organization's vision for the coming year
- Proper technology can be adopted to meet the requirements
- Offerings of better and consistent health care services
- Effective use of limited resources and provision for growth of the organization
- Helps technology managers to match available technical abilities (both existing and new) with clinical requirements and financial capability
- A definition for the level of service expected
- Priorities in budgeting for technological adoption and acquisitions

To achieve this goal, clinical engineers and technology managers should understand the mission of their institutions and collect information that support their institution. They should provide informative input to the hospital management,

The clinical engineer are able to provide the following :

- Information about methodology and equipment life cycle functions
- justifications for adoption of new technologies or enhancement of existing ones
- Provide a review of emerging technological innovations and in determining the impact that they can have on the hospital. (A good rapport with the research and development industry facilitates this.)