

Three Steps to an Equipment Planning Process That Works

Earnie Heard

Although budget constraints are one factor that may adversely affect technology modernization efforts, the biggest barrier to maintaining current medical technologies is the lack of planning. Those healthcare organizations that follow a proven three-step strategic planning process will potentially minimize risk to the organization, improve service to the community and increase its client base. On an annual basis, healthcare organizations should develop and complete three plans: a clinical strategic plan, a medical technology plan, and a medical equipment plan. Failure to plan and execute all three plans will have a negative impact on revenue and thus place medical facilities at risk.

Step 1: The Clinical Strategic Plan

The clinical strategic plan is developed by the healthcare organization's executives and/or the board of directors. Essentially, the clinical strategic plan sets the tone for the healthcare organization's community involvement. It uses internal and external factors such as the size and layout of the physical plant, existing technology base, patient demographics and competition, to define the services it will offer to the community.

Usually considered long-range and continually evolving, a clinical strategic plan is updated annually. For a given year, this process begins when key hospital participants, through the strategic planning process, assess what clinical services the hospital should be offering in its referral area. They take into account healthcare trends, demographic and market share data, and space and facilities plans. They analyze their facility's strengths

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Check Points

What can clinical engineering departments contribute to the equipment planning process?

- ✓ The clinical engineering (CE) department can provide historical data on how well an equipment has performed over its lifetime.
- ✓ CE departments can sort through compatibility issues between current medical equipment items and new equipment.

and weaknesses, goals and objectives, competition, and existing technology base. The outcome of this process is a clinical strategic plan that establishes the organization's vision for the year.

Step 2: The Medical Technology Plan

Medical technology planning, also referred to as strategic technology planning, is the next phase of the three-step strategic planning process. Quite frequently, medical technology planning is confused with medical equipment planning. Although these processes are closely related, they are actually two separate and distinct procedures. The purpose of medical technology planning is to match current key technology resources to the clinical strategic plan and to identify new technologies required to support the clinical strategic plan. Technology resources include medical equipment, personnel, training, and credentialing.

Medical technology planning includes a technology audit. In the technology audit, each major clinical service or product line must be analyzed to determine how well the existing technology base supports it. The audit can be conducted along service lines (e.g., radiology, cardiology, surgery) or technology function (e.g., imaging, therapeutic, diagnostic). This audit can be best achieved by an ad hoc team approach, utilizing designated physicians, department heads, and technology managers. The

key audit steps are as follows:

- 1) Develop a complete facility-wide asset inventory, including description, quantity and quality of equipment included. Compare the existing technology base against known and evolving standards-of-care information, patient outcomes data, and known equipment problems.
- 2) Collect and review information on technology utilization; assess appropriate use, opportunities for improvement, and risk level.
- 3) Review technology users' education needs as they relate to the application and servicing of medical equipment; include physicians, nurses, technologists, and support staff.
- 4) Credential users for competence in the application of new technologies; assess needs, whether requirements are being met, and what risks are involved (credentialing committees will be the primary group to match clinician skills with evolving clinical treatment procedures or protocols).
- 5) Keep up with published clinical protocols and practice guidelines using available healthcare standards directories.
- 6) Utilize clinical outcomes data for quality assurance (QA) and risk management program feedback.

Once the assessment has been completed, the technology requirements are documented by department and the results are forwarded to the clinical strategic planning committee (see Table 1). The technology requirements should be identified by name, quantity, whether it's a much-needed upgrade (U), a replacement item (R) or for an expansion project (E), estimated total cost and priority. Table 1 illustrates the requirements for expanding a same-day surgery clinic.

When these steps have been taken, the medical technology plan still needs input from the medical equipment plan to be complete.

Step 3: The Medical Equipment Plan

The final phase of the three-step strategic planning process is the development of a medical equipment plan. This is the process of budgeting, planning, and configuring medical equipment. The medical equipment plan is derived from and supports the medical technology plan.

| REQUIREMENT | QTY | U | R | E | EST COST | PRIORITY |
|-----------------------------|-----|---|---|---|----------|----------|
| Electrosurgical | 4 | | | X | \$47,000 | High |
| Vital Signs Monitor Upgrade | 12 | X | | | \$21,000 | Medium |
| Defibrillators | 6 | | X | | \$48,000 | High |

Table 1. *Technology Requirements for Expanding Same-Day Surgery.*

The support services and planning division of a health-care organization is typically responsible for the medical equipment plan.

There are several key personnel involved in equipment planning and they typically form a team called the medical equipment planning committee. The main divisions are clinical engineering, facilities engineers, and materials management. The clinical engineering representative addresses any compatibility or integration issues associated with new equipment purchases. They also discuss reliability, availability, and maintainability issues associated with both equipment earmarked for replacement and new items being purchased. The facilities management representative addresses infrastructure issues associated with new equipment purchases, such as power requirements, air exchange requirements, and load bearing limits. The medical equipment planning committee also includes representatives from the departments that are requesting new equipment, which is voted on and prioritized by this committee.

Role of Technology Managers

It is not possible to adequately complete a clinical strategic plan without engaging in the process of strategic technology planning. A key role for technology managers, i.e., clinical engineering managers, PACS administrators, radiology managers, etc., is to assist their organization throughout the combined clinical and technology strategic processes by matching available technical capabilities, both existing and new, with clinical requirements. To accomplish this, technology managers must understand why their facility's values and mission statement are set as they are, pursue their institution's strategic plan through that knowledge, and finally, plan in a way that allocates limited resources.

Although a technology manager may not be assigned to develop an organization's overall strategic plan, they must understand and believe in it to offer sound input

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for hospital management. In providing this input, there are several things the technology manager can do. First, they can determine how the hospital’s technological deployment should be evaluated. They can also assist in providing a review of emerging technological innovations and determining the impact they can have on the hospital. This is facilitated by having good rapport with the research and development industry. Another option is to articulate justifications and provisions for adoption of new technologies or enhancing existing ones. Because tomorrow’s clinical devices are in the research laboratories today, the technology manager should consider visits to such sites as well as to the exhibit areas at major medical and scientific meetings. Finally, the technology manager should be familiar with the institution and its equipment users’ ability to assimilate new technology.

It would be a gross oversight not to include clinical engineering in both the medical technology plan and the medical equipment plan. This department is extremely knowledgeable of all the equipment currently deployed within a medical treatment facility and can provide historical data on how well the equipment has performed over its lifetime. It also keeps its fingers on emerging technologies and can sort through compatibility issues between current medical equipment items and new equipment suggested for procurement. Finally, clinical engineering documents user-related problems; this information is extremely important when determining training requirements. The bottom line: Clinical engineering provides an honest, unbiased assessment on equipment usage, equipment reliability, equipment procurement, compatibility issues, and training requirements. Failure to utilize this department may prove to be extremely costly. ■

Want to learn more about the three-step strategic planning process? Check out *BI&T Extra*. Go to www.aami.org/publications/BI&T/index.html.