Meet the Minimum: Requirement-Based Equipment Procurement

Anthony Angelo

When purchasing new medical equipment, it is easy to be driven by a wish list of features. Every vendor promises the latest and greatest additions, and clinicians and medical technology professionals alike can be swayed by the bells and whistles. In today's economy, however, sometimes simply procuring medical equipment at all—let alone devices with all the add-ons—is difficult. The driving question often is no longer *which* vendor or model to purchase, but *when* will funding become available? And, once that funding is secured, it can be difficult to provide clinicians with their preferred system within the budget.

To ensure that the clinicians get a system that meets their needs and your budget, establish minimum requirements for the proposed equipment. This article will outline steps that biomedical equipment technicians (BMETs) and clinical engineers (CEs)—working in concert with other hospital departments—can take to survive equipment acquisition on a reduced budget.

Getting Started

The first step in any equipment acquisition is to determine if procurement is indeed necessary, which is a team effort. Determine how a given clinical task is currently being accomplished and the mission impact if the replacement equipment is not funded. Does the procurement need to happen now or can it be pushed back? Is the procurement part of an enterprise-wide initiative or standardization, or a single device replacement?

That equipment is at or nearing life expectancy does not in itself justify replacement. An examination of the existing equipment's service history and maintenance costs compared with the projection of future costs and service contracts may show it is more cost effective to maintain the equipment than to replace it. New equipment procurements should also be examined based on need and the mission of the enterprise.

Minimum Requirements

Once need is established, the minimum requirements of the equipment must be defined. This is a critical step in the procurement process when cost is a significant issue. Clearly defining the minimum specifications, features, and other necessities will focus market research and can assist in setting a baseline for estimating cost. All departments directly or indirectly involved with the equipment or its procurement should contribute. Having a multidisciplinary approach can minimize the effect of vendor preference during the process, as different groups will have had different experiences with the companies in question. The group should first define and agree upon a functional description of the intended task of the equipment. Once completed, the group can begin to propagate a list of minimum requirements for the equipment to accomplish the task.

Minimum requirements should be generic and nonvendor specific to minimize vendor favoritism. Ask the following questions:

- What are the minimum technical specifications needed to successfully complete the task?
- Are there installation limitations or requirements (dimensions, weight, electrical and other utilities, environment control)?

Check Points

Defining the minimum requirements for an equipment purchase can help to keep costs down while still ensuring that clinicians get what they need. In a request for proposals for anesthesia machines, the minimum requirements might be stated as:

- ✓ Shall be capable of having at least two vaporizers connected to the machine at one time.
- ✓ Shall have an electronically controlled ventilator capable of volume control, pressure control, pressure support, and synchronized intermittent mandatory ventilation.
- ✓ Shall be compatible with x-model clinical information system.
- ✓ Shall provide documentation of a successful interface with x-model system.

- Is facility modification required?
- Will the proposed equipment be used in conjunction with other equipment in the facility (existing or proposed)? Is there an existing inventory of consumables for this type of equipment?
- Is there an installed base of the same type of equipment in the facility (possible standardization)?
- What degree of training is required?
- How is the equipment to be serviced during and after the warranty period?

Other Requirements

The procurement may warrant including market requirements in the minimum requirements as well. For example, specify that the vendor must have installed the system at x number of sites in the United States or require a minimum market share. These indicators help objectively identify the experience level of the vendor (obviously other issues, such as customer service, are more difficult to quantify and need to be considered after minimum requirements are met).

As more and more medical devices are being networked, interoperability is a major issue. Though a vendor may claim their system is compatible, independently verify this if possible. Requiring documentation from a vendor stating a current successful interoperability set up between specific systems can prevent unnecessary downtime and/or service. Lock in a Point of Sale service contract for best prices at the time of purchase rather than after purchase.

Once the requirements are set, they should be reexamined to confirm that they are the minimum requirements necessary. Review each requirement and determine: Is this a need or a want? Does the requirement meet or exceed the standard of care currently at the facility and does that align with the facility's mission? Can the intended task be completed successfully without it (in which case it is not a minimum requirement after all and can be discarded)? The minimum requirements should not be a description of the exact device you want to procure, but rather the configuration that will meet the facility's needs at the lowest cost.

When writing the request for proposals (RFP), write the requirements as a minimum configuration by using terms such as "at least" or "shall be capable of." This will allow vendors to identify if they meet the minimum requirements as well as to include additional features that exceed the requirements.

Evaluation

Once the vendor proposals are received, the group should reconvene and evaluate the responses based on the agreed-upon requirements. The benefit of establishing the minimum requirements prior to reviewing the vendor proposals is having an objective method of evaluation. The vendor proposals either meet the requirements or they do not, and if they do, the prices are easy to compare—it can be that straightforward.

In most cases, more than one vendor will meet the requirements, necessitating further evaluation. At this point, but not before, consider human factors and ease of use, vendor reliability and customer service, past performance history, life cycle cost analysis, warranty, and serviceability before and after the warranty expires. Features provided by vendors that exceed the minimum requirements should also be evaluated.

The outcome of the evaluation process will be a *best value justification*. Outlining the factors examined in the best value justification can be used to defend not only the vendor choice but also the total cost of the procurement. The cheapest vendor configuration may not always be the best for the facility.

Conclusion

This is a basic, step-by-step approach that any clinical engineering department can follow for requirement-based equipment procurement. Obviously, the formality of the process can vary for individual equipment acquisitions. A large committee may not be needed for less complex procurements, but the same process should be followed. The results are clear: by establishing a set list of minimum requirements and maintaining them through the process, you can get the information you need; objectively evaluate the proposals; justify your vendor choice to administration; and, if money is really tight, go with the lowest bidder with confidence. Most importantly, having minimum requirements will ensure that the clinicians will receive a system that meets their need to successfully complete the intended task. ■

Anthony Angelo, MS, is a clinical engineer for Universal Consulting Services, Inc (Fairfax, VA) and provides support services to the Naval Medical Logistics Command based in Fort Detrick, MD. Angelo performs technical evaluations of equipment requests for land-based naval hospitals and provides clinical engineering support to the U.S. Navy. He is a graduate of the University of Connecticut's clinical engineering internship program.