SPECIAL SECTION

ASSESSMENT IN ACTION

Facilities' Approaches To Technology Assessment Are Related To Their Size and Services

Healthcare organizations approach technology assessment in a variety of ways. The type of technology being assessed often dictates who assesses it and how. Materials or purchasing managers may assess replacement technology by simply using a checklist of requirements. If the equipment fits within all set parameters, they purchase it. But for cutting-edge technologies, a hospital's ethics committee, marketing and planning personnel, administrators, medical staff, and others may all become heavily involved in an intricate approval process.

A facility's size and type also have some bearing on how it assesses technology. Large tertiary, specialty hospitals may offer staff several formal avenues of assessment. Small primary care facilities may take an informal approach to technology assessment, but they still complete a formal economic assessment because funds may be in short supply.

Multi-institutional healthcare systems approach technology assessment in various ways as well. Some help members assess technology by providing them with step-by-step guidelines (see the articles by Theresa L. Stempien on p. 58 and by Frank Fox and Ellen Barron on p. 50). Other multi-institutional systems believe members should set their own procedures for technology assessment, reserving budgetary approval for very costly technologies.

Assessment on the Basis of Technology Type

Saint Louis University Hospital, St. Louis, categorizes technology on the basis of whether it is new and emerging or replacement and existing. This 362-bed tertiary teaching hospital finds assessing technology according to the two separate types essential to streamline efforts according to need.

New and Emerging Technologies As a university teaching hospital, Saint Louis University Hospital makes every effort to keep abreast of emerging technologies. The impetus for assessment usually comes from the medical staff, noted Jan Blomefield, the hospital's director of planning.

"During the assessment process, we verify whether these technologies are valid for us in our marketplace niche," she said. The hospital questions whether the technology will solidify the hospital's position in its niche, whether the technology is reimbursable, and what the market need for the product is. "No hospital can be all things to all people, so we identify our niche as a tertiary hospital that provides a very specialized and sophisticated level of care," she added.

Assessment Process Physicians learn about new technologies through the literature and by attending conferences in their specialty areas. Blomefield also attends conferences to see what technologies are on the horizon.

For the usual assessment of a new or emerging technology, Saint Louis University Hospital's chief executive officer (CEO) may ask Blomefield and Alan Bailey, director of marketing, to interview the physician group interested. They find out what the interested physicians believe the application of that technology will be to determine whether the hospital's patients need the service or whether it will duplicate something already underused in the community. Blomefield and Bailey also do research to learn which other facilities in the St. Louis area have the technology and how they use it.

The marketing department completes a market analysis, evaluating the technology's proposed application and the population's needs. "We ask, What would be the size of the market for this technology?" explained Bailey. The marketing department evaluates the degree to which the

technology would be a replacement technology, an enhancement, or a unique application technology, he said.

The hospital needs to be sure the technology will be used appropriately, explained Bailey. "One of the major concerns of our medical staff is, Will the technology enhance the diagnostic or therapeutic aspects of taking care of the patient?" he noted. Bailey believes that technology for technology's sake makes it more of a marketing tool than a way to improve patients' health and well-being.

Blomefield and Bailey then present their findings to the persons interested in acquiring the technology, medical school representatives, and hospital administrators such as the chief financial officer (CFO) and the CEO. They discuss the cost of the technology and other issues such as:

- The staffing and training requirements for effectively using the new technology
- The effect the technology will have on the number of patients treated in a particular area
- The physical accommodations the hospital will have to make for the type of population that will use the new technology

"In the Utopian situation the group reaches a *consensus* on whether the technology should be invested in," said Blomefield. But Bailey noted that the ultimate decision rests with the hospital leaders, the medical school leaders, and the administrator in the clinical area that will be directly responsible for staffing and managing the technology. Blomefield added that, even if a technology looks promising, it may sometimes not be accepted because it is too costly or because another improvement is likely to occur soon.

Positron Emission Technology One example of a newly acquired technology is a positron emission tomography (PET) scanner. The clinical PET scan has until recently been used primarily as a research instrument to map out the activities of the brain, explained Bailey. But now it is also used in the diagnosis of epilepsy and heart disease. Since the hospital specializes in neuroscience and transplantation, administrators decided the patient population would benefit from the technology.

Saint Louis University Hospital decided to offer its patients this service because it could be used for evaluating the need for transplantation based on the strength of the remaining heart muscle, said Bailey. "Also, part of the reason why we have it is for research in terms of clinical applications," he added. "The PET scanner enhances physicians' capability to know what their next step should be in terms of the best care of a patient population."

At Saint Louis University Hospital, a promising technology may sometimes not be accepted because it is too costly or because another improvement is likely to occur soon.

Replacement and Existing Technologies The process for assessing replacement and existing technologies is not as detailed as for new and emerging technologies. Saint Louis University Hospital's capital budget–technology assessment committee and Lee Stoll, associate director of patient care, assess whether equipment should be updated, increased in number, or phased out. The committee includes the hospital's medical director, chairperson of the hospital's products committee, supervisor of the biomedical engineering department, assistant director of nursing, and assistant director of surgical services. The medical director and hospital manager of the department making the request are ad hoc members. The committee is chaired by the hospital's assistant administrator for ancillary services.

A department that wants a new technology fills out a capital request form or a noncapital equipment request form, which is reviewed by Stoll and the capital budget–technology assessment committee. If they approve the purchase, the form is signed by Stoll and several other persons, including the department administrator and medical director and the directors of building services and materials management.

The department making the request must answer the following questions:

- Is the item approved in the capital budget?
- Has the department received assessment information from MD-Buyline (a Texas-based company that provides comparative cost, warranty, and service information about products)?
- Will the item require site renovation or preparation for installation?
- Will the item generate new revenue?
- Is the item a replacement for an existing item? If yes, how will the existing item be disposed of?
- Will additional full-time equivalents be required to operate the new equipment?
- Will the item increase maintenance costs?
- Will biomedical staff require additional training for the item's repair?

"Utilization is something the hospital especially wants to look at," said Stoll, so the hospital does a cost-benefit analysis. "If it's something that's going to be very infrequently used, then maybe we don't want to invest in it."

Once the capital budget–technology assessment committee and Stoll have approved the equipment, the hospital's CFO must also approve it. Any nonbudgeted item must receive final approval from the CEO, noted Stoll.

Formal Approaches

Large tertiary hospitals employ several formal technology assessment procedures. Usually a facility's technology review committee handles the bulk of the research and decision making. But these committees are merely a starting point. Assessment processes often branch out to include input from ethics committees, materials managers, and planning department staff.

Saint Joseph's Hospital At Saint Joseph's Hospital of Atlanta, a technology's ethical implications play an important role in its assessment. The hospital, a 346-bed tertiary facility, specializes in technology-intensive areas such as cardiovascular disease, heart transplantation, interventional cardiology, cancer, surgical specialties, and orthopedics. The hospital's ethics committee often discusses the appropriateness of certain technologies for dying patients, explained hospital President Kathryn McDonagh (see **Box**).

Saint Joseph's is 1 of 26 hospitals in the Eastern Mercy Health System, Radnor, PA. Eastern Mercy does not provide a formal technology assessment process to its members, but corporate headquarters staff are available to help if needed, explained Robert Naugle, a financial analyst at Eastern Mercy. He said the system likes its members to be autonomous when it comes to assessing new technology. "Some of our hospitals are so large that we'd be constantly reviewing requests for each $10,000 or $15,000 item," remarked Naugle. Eastern Mercy does review any member's purchase of $500,000 or more, he noted.

Ethics committees, materials managers, and planning staff are often involved in assessments.

Saint Joseph's Hospital assesses technology in a variety of ways, said McDonagh. The hospital's capital review committee, a multidisciplinary group of physicians, administrators, and materials managers, systematically answers a series of questions on all new technology proposals:

- How much will the technology be used?
- What good will it do for the community we serve?
- What sort of financial impact will the technology have?

The hospital also has a program review committee of administrators who assess major new programs. They ask questions similar to, but

TECHNOLOGY ASSESSMENT STUDY

Demonstrating its commitment to using resources appropriately and offering patients cutting-edge technologies, Saint Joseph's Hospital of Atlanta, has just completed a year-long study of technology assessment in conjunction with the Hastings Center, the Briarcliff Manor, NY–based not-for-profit organization for education and research on ethical issues in medicine, the life sciences, and the professions. "One of the things criticized in healthcare is that providers often use technology, while ignoring research that shows the technology is ineffective," noted Kathryn McDonagh, the hospital's president.

Saint Joseph's Hospital multidisciplinary ethics committee met six times with Hastings Center representatives. At each meeting a different specialty physician discussed what the literature is saying about a specific technology's effectiveness and how other people are using it. The group reviewed numerous technologies, including the prostate screening antigen (a prostate cancer screen that is being criticized for overuse), sigmoidoscopy, mammography, and carotid endarterectomy.

The meetings focused on determining the rationale physicians use when they decide to acknowledge or ignore data about technology. Physicians are skeptical about what they read, said McDonagh, and may ignore a published study if it has not been replicated. "So physicians tend to rely on their 'experience,' which can be small within the relative scope of the world," she observed.

The group found that physicians are also influenced by patients' demands and whether a patient's illness is terminal. McDonagh explained that at times physicians use patients' terminal illness to justify the use of a certain technology, even though it has been found to be ineffective.

At one meeting, a physician from the Henry Ford Hospital, Detroit, described Henry Ford's clinical effectiveness committee, which reviews the effectiveness of technology and pharmaceuticals. It provides Henry Ford physicians with an internal peer group study of different costly new technologies. Henry Ford administrators believe, explained McDonagh, that these in-house recommendations might have more influence on the hospital's physicians than outside reviews.

As a result of its work with the Hastings Center, Saint Joseph's Hospital decided to build a more effective strategy for reviewing technology and its use. Saint Joseph's staff are considering forming a clinical effectiveness committee. But, McDonagh noted, a task force would first have to determine what the committee's goals would be and how it would fit into the organization.

Saint Joseph's Hospital is also considering collaborating on technology assessment with the Hastings Center for another year. If the hospital decides to do this, it would strive to establish a more formal process for evaluating technology, said McDonagh.

broader than, those of the capital review committee:

- Does the technology fit our mission?
- Does it pose any ethical problems?
- What are people's concerns about the technology?

When a physician learns about a technology through the literature or elsewhere, he or she could discuss it with an administrator. The request must then go to the capital review committee or the program review committee. Decisions are thus made collectively, McDonagh said.

If the board of directors has approved the technology in the hospital's budget, and the committee doing the assessment believes the technology is worthwhile, the hospital invests in it. The hospital projects its capital needs three years in advance, explained McDonagh, but decides the specifics of each budget a year in advance. McDonagh also has monthly meetings with the hospital's vice presidents to review capital expenditures. She said that Saint Joseph's has a contingency fund to cover unexpected expenses or changes in plans.

Saint Joseph's Hospital recently constructed its fifth cardiac catheterization laboratory. Because it was a multimillion dollar project, McDonagh explained, it was reviewed by the capital budget committee *and* the program review committee. The hospital also had to go through the certificate-of-need process with the state. McDonagh said that it took more than a year to get the laboratory approved, which is not unusual for a project this large.

McDonagh added that the hospital's materials manager, a member of Eastern Mercy's Materials Managers Council, works with the system to secure the lowest bid on equipment. The council meets two or three times a year to exchange information and discuss contracts, Naugle explained.

Saint Francis Hospital Licensed for 701 beds, Saint Francis Hospital and Medical Center, a tertiary teaching hospital in Hartford, CT, also uses several formal technology assessment programs, according to Chris Hartley, vice president of planning and facilities development.

- Saint Francis often obtains technological information from Premiere Hospital Alliance, a hospital alliance, of which the hospital is a member.
- The hospital's technology committee meets once a quarter to discuss new and emerging technologies and recommend further study on promising ones.

> "Our technology assessment processes duplicate the traditional scientific method," said Chris Hartley, Saint Francis Hospital.

- Clinical program managers identify technological changes in their clinical areas and present these findings to the technology committee.
- Department directors are expected to recommend assessment of new and emerging technologies when they make their annual budget request.

When evaluating a technology, Saint Francis staff first look at how the technology will benefit the hospital's patients, said Hartley. Staff members then ask:

- What does the technology cost?
- How will it benefit the community?
- Is providing the technology consistent with our mission?
- Does anyone else in the community have the technology?
- Where are the closest sites for viewing the technology?
- Is it a proven technology? Or is it an experimental one?
- Is the technology FDA approved?

For a new technology that is just being introduced to the community, Saint Francis Hospital staff also ask:

- What is the likely total volume?
- What types of patients are going to benefit, given whom we serve now?
- How many more patients are we likely to see?

"Our technology assessment processes duplicate the traditional scientific method," said Hartley. The department proposing the equipment starts with a hypothesis (i.e., the technology will benefit patients). Several persons then collect data to prove whether the hypothesis is true. On the basis of this research, those involved in the assessment decide whether the technology shows enough promise to be purchased.

An Informal Approach

Compared with the formal methods used at larger facilities, technology assessment is relatively informal at 110-bed Santa Marta Hospital, Inc., in East Los Angeles. "Technology is assessed on the basis of patient need," explained Will Mallari, the hospital's chief operating and financial officer.

Most of the hospital's clients are at or below the poverty line, said Mallari. "We are a community-based hospital, and these people don't have anywhere else to go. And they know we don't discriminate on ability to pay."

Mallari said physicians request new or upgraded technology on the basis of what their patients need. He then reviews the proposal's economic aspects, as well as what other hospitals are providing. "I think this is very important unless you are

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Coming in the Next Issue of

Health Progress

ISSUES AT THE END OF LIFE

March's special section will include the first of a four-part series, condensed from Care of the Dying: A Catholic Perspective*—a Catholic Health Association document describing the cultural, sociopolitical, and clinical context, as well as the theological, moral, and pastoral response to care for the terminally ill. Other articles in the section will discuss medical decision making at the end of life, especially with regard to the physician's roles and responsibilities.*

FEDERALLY QUALIFIED HEALTH CENTERS

Catholic facilities in inner-city areas are participating in the federally qualified health center program, which enhances reimbursement through Medicaid and Medicare for primary care clinics that serve the poor. An in-depth article details FQHC requirements, regulations, and considerations for facilities considering this innovative method of improving service delivery.

THE ROCK

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morally acceptable in medical practice. Ethics committees and institutional review boards must not be dominated by the lawyers employed by the corporation. Due process and fair procedures for decision making are ideals in our common American heritage that Catholic institutions should adopt, and have adopted.

A Catholic medical school or health organization also has a commitment to the poor and those who are disadvantaged in society. They can be directly served and their interests lobbied for in political structures. The 37 million Americans without healthcare coverage cannot be frozen out of our systems with good conscience.

For those who have been given much, much will be required. A medical school fails if it does not educate physicians about their moral social responsibilities arising from their being among the most fortunate, gifted, educated members of society. A commitment to social justice should permeate a Catholic institution.

A LIVING HERITAGE

As a potential patient and as a member of the Catholic community, I expect that our society's habitual abuses of power will not be present in Catholic healthcare institutions. Beyond this, I expect the bedrock of the Catholic tradition and the best of the medical profession to be unified and stand firm as a rock against destructive forces. Creativity and innovation are also the mark of a living tradition dedicated to healing.

A spiritual imperative can check the excesses of the technological imperative. The spiritual and social resources of the Catholic heritage are abundant. Medicine too has a long, rich tradition. By claiming this inheritance, Catholic medical schools and the physicians they produce can create new and living streams of healing. □

ASSESSMENT IN ACTION

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going to collaborate with other local hospitals. Otherwise, you might be buying something that is not going to be fully utilized or benefit your community," Mallari remarked.

If Mallari believes patient need justifies a new technology or upgraded equipment, he submits his request to the board of directors when planning the budget.

Even if the board budgets for an item, Mallari presents any proposal above $50,000 to them a second time before making the purchase. Three months after initial approval, the environment may have changed, explained Mallari. This second look is "a good mechanism," he said. "Some CEOs believe this is micromanagement, but when you're working with limited resources, you want to get everyone involved."

A recent purchase of a new $75,000 mammography unit demonstrates the hospital's commitment to women's care, Mallari said. The hospital's old unit did not pass the state emission inspection. The new unit allows the hospital to provide more comfortable mammograms at a lower cost, which makes managed care and insurance carriers happy.

EXERCISING CAUTION

Technologies are advancing at breakneck speeds, and with them so are healthcare costs. Blomefield warned that hospitals must be sure the technologies they invest in are valid. "You don't necessarily want to be the first hospital to offer a certain service," she noted. In the past, she said, hospitals have purchased a promising technology at the request of a physician who later moved or lost interest. "As the healthcare field becomes increasingly economically constrained, all hospitals realize they have to be very judicious and deliberate in making these kinds of decisions," asserted Blomefield.

—Michelle Hey