INTERFACE

SOCIETY FOR TECHNOLOGY IN ANESTHESIA

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JULY 1994 • VOLUME 5 • NO. 3

Technology Through the Kaleidoscope

A prior issue of the STA newsletter examined technology assessment (Volume 2, No. 3), July 1991, focusing on the problems inherent in documenting a relationship between a given technology and patient outcome. Since that issue, technology assessment has evolved significantly. Although clinicians tend to focus on patient outcome, it is no longer enough to examine this single facet in the pattern of ongoing assessment activities. An attempt to understand the scope of the activities is like looking through a kaleidoscope, at first complicated and confusing, but on careful inspection an organization emerges with intriguing interrelationships. Surveying the assessment activities in a comprehensive fashion would require much more space than is available here. Consider this and the other articles to be an introduction to a problem that demands increasing attention as we seek to control the costs of health care.

An article published in the *Journal of the American Medical Association* (1993;269:2116) initiated the ideas for this issue of the newsletter. That article, entitled "Court-Ordered Reimbursement for Unproven Medical Technology" detailed a number of legal battles

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Technology Assessment: A Problem of Consensus

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Managed care companies approach the issues of technology assessment with a mixture of anxiety, confusion, uncertainty and dread. A number of knotty problems, some scientific, some social, some value judgment and some intensely personal all converge under the rubric of technology assessment, and they do so with an urgency that often does not permit reflection in a rapidly evolving environment where any decision is not definitive but short-lived.

Though critics of the managed care industry argue that technology assessment is a smoke screen used to deny expensive new care to patients, that contention ignores the complexity of the problem. As a recent $89.5 million liability judgment for failure to approve a bone marrow transplant for breast cancer made plain, juries may readily believe that a denial of coverage is merely the act of an unscrupulous company seeking to improve the bottom line. We will be better served, however, to look past arguments that have emotional appeal, and to think about the real problems raised by technology assessment.

Insurance companies are increasingly forced to decide the scope of benefits. The old process of unquestioned reimbursement based upon a published fee schedule is no longer possible. The approach of price reduction was tried without much success, and companies have increasingly focused on attempting to control the volume of services. If volume reduction is truly being done in good faith, all efforts to control volume will focus on "appropriateness" rather than on the bottom line. Insurance companies would like to pay for all "appropriate care," refuse to pay for "inappropriate care," and let the bottom line take care of itself. The problem, of course, is defining what is "appropriate."

"Appropriate" Care

Occasionally, a clear consensus exists in the medical profession about what constitutes appropriate care. In any area where active research is ongoing, this standard will change as new information is generated. All of us are familiar with the evolution of technologies from research to everyday applications. Examples in the last two decades alone include MRI and CT scanning, development of endoscopic surgery,

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INSIDE THIS ISSUE:

Capital Equipment Purchases — A Clinical Perspective

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Capital equipment purchases are under increasing scrutiny as hospitals seek to reduce costs. As a result, anesthesiologists must compete with other cost centers in the hospital for limited financial resources. To be adequately prepared for our patients, we need to define what is required for clinical care, and then determine what the hospital will support.

Clinical needs and priorities can be readily identified by first consulting users. Clinicians and anesthesia technicians can readily identify what they would like, and what they need, for the next fiscal year. It is extraordinarily important for clinicians to feel that their equipment resources are, in large measure, a result of their input, especially since many requests for equipment are likely to be denied in the current climate of fiscal restraint. A small group of department members, or perhaps a single individual, must prioritize the requests from individual clinicians based upon a more complete understanding of capital equipment issues than one would expect from every clinician. The question then becomes: What criteria should be followed for developing capital equipment requests, and how should those requests be prioritized?

> ■ ***What critieria should be followed for developing capital equipment requests...?***

The first issue is safety. Many resources are available to identify equipment that must be available to insure patient safety. What society (American Society of Anesthesiologists, for example) guidelines pertain? What does the insurance carrier for the clinicians and the healthcare facility require? What local, state and national regulations pertain? What are the department's standards of practice? Have practice guidelines been developed that give guidance? For all of these, are changes likely over the next several years that should be anticipated?

Although safety is a fundamental consideration, clinical needs for capital equipment reach beyond issues of safety. The environment we practice in may substantially influence equipment needs. It is frequently easier to identify equipment needs in regular operating suites than in MRI, a burn unit, or an operating room dedicated to specialized surgery such as liver transplantation. Understanding present and future needs demands a perspective that exceeds the typical annual capital equipment request cycle. Knowledge of health care facility plans can be very helpful. Is expansion contemplated, a new center of excellence to be announced or, is downsizing planned? What are other departments contemplating in terms of equipment, programs, or support, that might overlap or conflict with your departmental needs?

In addition to departmental needs, one must understand what the health care facility will support? Unless one understands the budgetary process and

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INTERFACE is the official newsletter of the Society for Technology in Anesthesia. The newsletter is published quarterly and mailed directly to the membership of the society. The editors invite suggestions, contributions and commentary about published items. Please send all correspondence to:

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The newsletter is printed on recycled (and recyclable) paper.

The Hospital View of Capital Equipment

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Director of Professional Services
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Hospitals and other health care facilities are under enormous pressure to control costs in a desperate struggle to survive. Capital equipment requests are increasingly scrutinized for their contribution to the "bottom line." The methods used to evaluate capital equipment requests, and the outcome of the process, are not generally understood by those generating the requests.

The first and most basic information needed is a description of the item, its cost and the quantity needed. A detailed description of the purpose and need for the item is most helpful. Assembling this information helps the individual making a request to formulate concisely the need for an item.

We then seek to understand whether the equipment requested will generate revenue and, whether there are additional costs associated with the equipment. Additional costs may include new or renovated space, additional supplies and even additional personnel or specialized training. The potential for generating revenue must be addressed in detail. The revenue code, revenue procedure, price and volume of service must be defined. What portion is based on outpatient and inpatient services? After calculating the total patient revenue from these details, uncollectables are deducted as well as depreciation based on the expected life. Anesthesia equipment can be difficult to evaluate since it does not generate revenues from a single, identifiable, procedure. In addition, maintenance costs must be considered since they can be extraordinarily high for some items such as echocardiography.

The impact on other departments is also considered for each request. For example, would some discarded equipment be useful to another department in the facility? Are there legal concerns that require the input of hospital counsel? Perhaps information services will need to be involved with interfacing to the equipment or helping to schedule a particular resource.

Capital equipment requests usually exceed available resources. We ask the requester to prioritize the equipment according to three categories. The first category is equipment that is absolutely necessary to maintain patient safety or to fundamentally support a vision of the institution. The second category might be termed, "essential but can wait a year." The third category is equipment that is "nice to have" which, in the current climate is never funded.

All requests for equipment are prioritized based upon the foregoing considerations. Priorities for all departments are compared to derive a list of capital equipment to be funded. Rejection should not be a cause for discouragement especially since priorities can be revisited if an error in the decision making process has occurred, or if the needs of a particular department change. ◆

1994 ASA Events

Breakfast Panel

On October 18, 1994, STA will once again host a breakfast panel. This year's topic deals with "Mobile Management: Anesthesia on the Run." The expert panel will be chaired by Alan Grogono, and will feature Christopher Grande from The Uniformed Services, who will talk about anesthesia in exotic environments, Pierre Carli from France who will discuss miniaturized monitors, Leland Hanowell from Davis, CA, who will describe portable ventilators, and Charles Kingsley from Hershey, PA, who will report on anesthesia/sedation techniques. See your ASA registration packet for more details.

STA Annual Dinner

The dinner will be held at The Parc Fifty-Five Hotel in San Francisco on Sunday, October 16, 1994. The featured dinner speaker will be Nicholas Greene, MD, from the Department of Anesthesiology at the Yale University School of Medicine. The topic will be "Technology in Non-Technological Societies."

STA members will automatically receive information regarding annual dinner ticket purchase. Non-members may contact the STA National Office for ticket information. ◆

– J. S. Gravenstein

UPCOMING EVENTS

ESCTAIC

(European Society for Computing and Technology in Anaesthesia and Intensive Care)
September 25–28, 1994
5th Annual Meeting
Porto Carras
Halkidiki/Greece
Info: ESCTAIC Office
Schwob & Friend
International Congress
Organization
A-5014 Solzburg, Postbox 30
Austria

European Congress Meeting

October 2–7, 1994
9th European Congress
on Anesthesiology
Jerusalem
Info: Drägerwerk AG, Lübeck
Medical Systems
Germany
FAX (451) 882-2080

AMIA

(American Medical Informatics Association)
November 5–9, 1994
18th Annual Symposium
on Computer Applications
in Medical Care
"Transforming Information,
Changing Health Care"
Sheraton Washington Hotel
Washington, DC
Info: AMIA
4915 St. Elmo Avenue
Suite 302
Bethesda, Maryland 20814

Technology Through the Kaleidoscope

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where healthcare payers were successfully sued for denying benefits to patients seeking unproven therapy. The cases discussed involved therapy with Laetrile, immunoaugmentive therapy and thermography -- all considered **scientifically** unproven. Upon reading this article, one is easily struck with an uncharacteristic sympathy for the healthcare insurance industry. How can that industry control costs when they are subject to what appears to be legal whimsy? Dr. Richard Baron, Senior VP for Medical Affairs for a major health insurer in Philadelphia, PA, discusses methods now used by his industry to make decisions about reimbursement for what might be termed incompletely proven technology in one article of this issue.

Uncle Sam Wants to Know!

The federal government is of course also involved in this process. The Congressional Office of Technology Assessment has the task of responding to inquiries from congress for information to guide public policy. An article by Dr. Michael Gluck describes the activities of that office and some of the unique organizational aspects designed to avoid partisanship. Another governmental activity of interest is the Agency for Health Care Policy and Research (AHCPR) which functions as the technology assessment office for the Health Care Finance Administration. That agency is tasked with evaluating the medical benefit of health technology **irrespective** of cost. Their process for prioritizing technologies is described in the Federal Register (12/3/93 and 4/25/94) and guided by public law #104.210.

Other organizations are also involved. ECRI has been in the business of technology assessment for some time. Their activities have evolved significantly as well. Whereas cost justification was a driving force for some time in their efforts, they now take a broader perspective on the problem.

Implications for Providers

Both hospitals and physicians can be considered healthcare providers but each approaches technology assessment with different, and at times conflicting, goals. Dr. David Paulus of the University of Florida, and Cynthia Toth of Shands Hospital, avoid conflict over issues related to capital equipment purchases by understanding each others priorities. In companion articles, they share their perspectives, and offer practical guidelines for making the process rational and successful.

This issue of the newsletter has been very satisfying to develop, but in many ways remains incomplete. The legal perspectives on patient's rights to technology as well as provider responsibility to make it available are not addressed. There are likely many additional government activities at the federal, state and local levels related to medical technology assessment. Certainly the Health Care Finance Administration (HCFA) must have a number of interesting perspectives on Medicare and Medicaid support of new technology. In the future, there will likely be many opportunities to revisit this issue. No doubt we will have to twist our kaleidoscope in new ways in order to appreciate the complex issues involved. ◆

– J. Feldman

Moving or name change?
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Health Technology Assessment and the Congress: A View from OTA

Michael E. Gluck, PhD
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Office of Technology Assessment (OTA)
United States Congress

Over the last generation, public policies related to medical technology have increasingly occupied the Federal agenda, and for the last 20 years, the U.S. Congress has utilized the Office of Technology Assessment (OTA) to help with policy-making. OTA is a small agency of about 200 professionals working only for the Congress. The Health Program is one of seven programs within the agency consisting of about 25 professionals trained in disciplines as varied as medicine, law, economics, epidemiology, business, psychology, sociology, and the history of medicine. As OTA staff, we conduct the agency's work in small groups or individually, functioning as generalists often far afield from our original training.

OTA is a non-partisan agency which began in 1974 in response to the perception that technology can present untoward and unpredictable consequences which government has an obligation to consider in developing public policy. OTA is governed by the Technology Assessment Board (TAB) which consists of 6 members of the Senate and 6 members of the House of Representatives with equal numbers of democrats and republicans. This Board approves all major new studies, appoints the OTA Director, and certifies that OTA studies are fair and accurate.

OTA's Health Program

The Health Program develops about five major assessments and several brief background papers each year. The total budget is set each year by Congress, and shared by the Health Program and the other six programs of the agency; however, the agency does not receive new funds each time Congress requests a new study.

The process of health technology assessment has evolved since the agency began. OTA has always defined "health technology" broadly to include drugs, devices, medical and surgical procedures, and related support technologies like computers to maintain medical records. Initially, we focused largely on the clinical, economic, and social implications of individual health technologies and helping Congress plan for their use.

More recently, OTA's research has expanded to include studies of the larger health care system in the United States in which these technologies are used and reimbursed. Most studies from the Health Program can be categorized into at least one of 6 general areas:

1. Methods for evaluating medical technologies. Over the years, OTA has explored the use and limitations of cost-effectiveness analysis in analyzing health technology. A current study examines newer tools including outcomes research and clinical guidelines development.

2. Analyses of effectiveness, safety, costs, and public policy implications of specific technologies. For example, OTA is currently examining the effectiveness and costs of prostate cancer screening as a potential Medicare benefit.

3. Telecommunications and computing technology in health care. Responsibility for this area is shared with OTA's Telecommunications and Computing Technology Program.

4. Environmental and occupational health. OTA's Environmental Program, rather than the Health Program, has gradually taken over most work in this area.

5. The financing of health care, and structural issues in the health care system. Recent studies in this area focus on alternative cost and effectiveness criteria for deciding what services should be reimbursed by insurance, the phenomenon of defensive medicine, and an analysis of simulation models used to predict the impact of health care reform on national health expenditures.

6. The R&D and diffusion of health care technology. A recent study examined the cost of the pharmaceutical R&D process and factors that influence that cost.

The OTA Process

The research methods used in our assessments depend in part upon the nature of the request from Congress. There are however, at least three characteristics common to most or all of our studies.

First, requests to undertake studies are typically bipartisan, originating from both the chair and the ranking minority member of a Congressional committee.

Second, we rarely undertake primary data collection. Our role is usually to critique and synthesize data already collected. In part this is because primary data collection is an expensive enterprise. But also, we often discover there are vast numbers of studies and data sources that are rarely synthesized. In the course of our work, we often find that existing knowledge is inadequate to guide the use of medical technology

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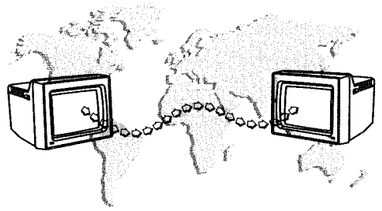
SIGnatures



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The activity on the various anesthesia listservers (lists) has been quite impressive over the last three months with nearly 1000 messages posted. Of these, there were 142 different subject headings between the NYU and Buffalo lists and 26 subject headings on the pediatric pain list. Three new lists were recently announced: one devoted to pediatric intensive care by Dr. Carl Weigle, one open to members of the Society of Neurosurgical Anesthesia and Critical Care (SNACC) managed by Dr. Ira Rampil and one on emergency medicine by Dr. Russell MacDonald. (Figure 1)

In general, the messages on the anesthesia lists address Internet issues, make announcements, request information (e.g. surveys), or raise a clinical point for discussion. These discussions are archived, retrievable and may eventually become a citable resource (see Li, X. and Krane, N.B.. Electronic Style - A Guide to Citing Electronic Information. Published by Meckler Publishing, Westport, CT, 203-226-6967). Both the Buffalo and NYU lists archive their messages on their respective gophers.

Please note that the NYU list has changed both command and mailing addresses. The old addresses will continue to work for the foreseeable future although users should ultimately adopt the new addresses. (Figure 1)

Recent Topics

Once again there were too many interesting topics to describe in this newsletter. A vigorous debate ensued following one individual's attempt to solicit commercially-related information. Some felt this was an objectionable use of the list, while others did not. One concern about using up limited network and computer resources for "junk" mail does not, in fact, appear to be a significant problem, although it may increase the charges to those using certain commercial services such as CompuServe. There does not appear to be a clear definition of what constitutes a legitimate use of the Internet, nor regulations to prohibit "Internet abuse."

Another discussion concerned establishing an anesthesia USENET newsgroup; essentially a bulletin board. In contrast to discussion lists, which automatically send all messages to all subscribers, newsgroups permit users to retrieve only those messages of interest. The primary disadvantage of a newsgroup is that it has no restrictions on who may post or read a message. As a result, postings may not always be relevant to the professional community, leading to the possibility of questions such as "I had anesthesia a year ago, and now ..." Reading and responding to listserver messages that simply appear in one's mail presumably promotes participation, whereas it is a bit more involved reading messages posted to a newsgroup. Newsgroup access is also not available to CompuServe members. Undoubtedly, news groups and discussion lists serve complementary functions, and should probably coexist.

One discussion was particularly entertaining. The original posting inquired about an alleged gas which, when introduced into the sleeping compartments of European trains, knocks out the passengers, who are then robbed. Several discussion threads arose as a result of this posting. In general, it was agreed that such a gas did not exist, although some wrote about the use of chloroform or ether, applied directly to the victim, or about carfentanyl darts (as are used on large animals). Whereas some participants mentioned carrying syringes of succinylcholine as a means to immobilize an attacker; others responded that guns were a preferable alternative, prompting several opinions about guns and safety, and gun control. The discussion concluded with the opinion that the substance originally in question was "anesthesia dust," that is, the drug that surgeons think we use because it can be given to anyone causing instant loss of consciousness, will last as long as necessary but no longer, has no smell or taste, and no after- or side-effects.

Topics of a more traditional nature included a discussion of antihypertensives in craniotomies, appropriate levels of staffing for neuroanesthesia or other complex cases, the use of infusion pumps and LMAs in the MRI, epidurals for labor and/or C-sections, the presence of partners at C-section or parents in the PACU, staffing practices in July, and the use of CD ROMs, in one case for literature/database searches, and in the other as a method of distribution for *Anesthesiology*.

Cyberspace Updates

Anesthesia-related resources on the Internet continue to expand at a vigorus pace. In addition to the gopher at the Health Sciences Center at Syracuse, maintained by Dr. Sopchak, two additional gophers have been started. The GASNET gopher is mainained by Dr. Keith Ruskin at NYU, and there is a gopher at UCLA. Dr. Ruskin continues to maintain an FTP site at NYU, and a biomedical informatics FTP server is maintained by Dr. Renato Sabbatini at the State University of Campinas, Brazil.

One of the more groundbreaking events was the publication of an electronic journal, *Educational Synopses in Anesthesiology and Critical Care* (ESIA). The first issue was published in April 1994 and is available free of charge over the Internet, courtesy of Drs. D. John Doyle and Keith Ruskin. One can become a subscriber by posting " subscribe esia" to listserv@anes.med.nyu.edu which will generate monthly mailing of each issue. The journal is also available by FTP, gopher, and the World-Wide Web. Articles may be submitted electronically to esia-sub@anes.med.nyu.edu for review. Alternatively, submissions on 3.5" diskette may be sent to Dr. D. John Doyle, Editor-in-Chief, Educational Synopses in Anesthesia, Department of Anaesthesia, The Toronto Hospital, 200 Elizabeth Sreet, Toronto, Ontario, Canada M5G2C4.

For further information, contact Dr. Doyle (74167.2242@compuserve.com) or Dr. Ruskin (keith@anes.med.nyu.edu).

The GASNET Anesthesiology gopher server at NYU was officially announced in April. If you are using an application such as Turbogopher, it may be found under Other Gopher and Information Servers/North America/USA/New York/GASNET Anesthesiology, or at gopher gasnet.med.nyu.edu when starting gopher from a command prompt. The gopher includes ESIA back issues, archives of the NYU list discussions (albeit a couple of months delayed), and bibliographies and resource lists (including The Medical List, a list of many medically-related discussion groups on the Internet). Many of the resources on the gopher may be downloaded using FTP.

The HSC Anesthesiology gopher at the SUNY Health Sciences Center at Syracuse contains similar but not identical resources to the NYU gopher. Access is similar to the GASNET gopher if using an application such as Turbogopher. It is available at gopher@eja.anes.hscsyr.edu if using a command prompt.

An important message, regarding the future of Internet usage, has been circulating the Internet. It describes the possibility that there will be metered pricing of Internet usage at some point in the future, such that users would have to pay for all information transactions on the Internet. The Taxpayer Assets Project (TAP) is mounting a campaign to oppose this effort, by distributing letters for mailing to Steve Wolff, Director of the Division of Networking and Communications for the NSF. Further information about this issue may be obtained from Jamie Love (love@essential.org) or Mike Ward (mike@essential.org) of the Taxpayer Assets Project.

Internet Access

Messages inquiring about methods of connecting to the Internet continue to be routine postings to the lists. The least expensive method is for a member of an educational institution to use the institutional resources. Those without access to these types of institutions must select one of the commercial services available. The best choice of service will be dictated by the individual's needs for Internet services. Details on the various options can be found in The Whole Internet User's Guide and Catalog, by Ed Krol, or Connecting to the Internet, by Susan Estrada. Both are published by O'Reilly and Associates, Sebastopol, CA.

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Figure 1. *Listing of discussion groups related to anesthesia. The subscribe command should be sent by e-mail to the command address to join a list. Any messages for posting to the list should be send to the message address. Additional information will be sent to the subscriber upon subscribing.*

Listserver	Subscribe Command	Command Address	Message Address
Buffalo	subscribe anest-l	listserv@ ubvm.cc.buffalo.edu	anest-l@ ubvm.cc.buffalo.edu
NYU	subscribe anesthesiology	listproc@ gasnet.med.nyu.edu	anesthesiology @ med.nyu.edu
Pediatric Pain	subscribe pediatric-pain	mailserv@ ac.dal.ca	pediatric-pain@ ac.dal.ca
STA Listserver	subcribe STA	listserv@ anes.med.nyu.edu	sta@ anes.med.nyu.edu
Stanford AI in Medicine	any request	ai-medicine-request@ med.stanford.edu	ai-medicine@ med.stanford.edu
Pediatric ICU	subscribe picu yourname*	listproc@its.mcw.edu	picu@its.mcw.edu
SNACC	any request	ira_rampil@ vaxine.ucsf.edu	Not available
Emergency Medicine	any request	3rdm1@qucdn. queensu.ca	Not available

*In place of "yourname," type the name you wish the list to know you by.

A View from OTA

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or to develop public policy. Our conclusions often take the form of a research agenda for the future.

Finally, in conducting our assessments, we make use of many outside consultants, advisers, and reviewers who greatly extend our human resources. Each major assessment has an advisory panel comprising 10-20 individuals from academia and the private sector. These individuals include both scientific experts and representatives of groups who have a political or financial stake in the issue being studied. Their meetings, which occur two or three times during a project, are open to all interested parties. We seek alternative points of view on these panels, believing that it helps us prepare more balanced reports. Advisory panels are also important sources of data or other information that help our work. Sometimes we augment advisory panels with one or two day workshops that bring together experts on a specific sub-issue related to the fuller assessment.

Most studies also make use of outside consultants who prepare technical analyses or background papers for us under contract. We share drafts of our reports and our consultants' reports with as many as 200 individuals outside of OTA. Like advisory panels, these reviewers reflect the diversity of expertise and points of view relevant to the study.

Although Congress is OTA's client, we make our completed studies widely available in printed form, and they will soon be available electronically via the Internet. Staff and consultants are also encouraged to publish the results of their work in academic and other journals.

As we move into a post-health care reform world, OTA anticipates greater demands on the tools of technology assessment as policy makers are called upon to help make better use of limited health care resources. ◆

Capital Equipment Purchases—A Clinical Perspective

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who is responsible, obtaining resources for capital equipment becomes agony. Too many clinicians either refuse to understand budgetary processes or think the phrase, "My patient is going to die if you don't buy technology X and you will be responsible." will suffice. More detailed justification is needed.

We believe that interfacing with other hospital areas helps to define a capital equipment request that is sensible. Define with clinical engineering the technical needs, share with nursing in the operating room, PACU, ICU and other locations, your thoughts and understand their needs. Seek the support of other physicians and surgeons.

Lastly, you must recognize your purchasing mistakes from the past. Mistakes are inevitable in the process of prioritizing capital equipment requests but the individuals you work with must feel that you are not squandering their increasingly limited resources if you are to continue to have credibility.

In short, understanding your clinical problems, the regulations and guidelines, and the institutional budget process should help you make sensible decisions about capital equipment requests and to acquire the capital resources necessary for the clinical mission. ◆

SIGnatures

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Special Alert

The following message was recently received on various lists. Because of its importance, it is reproduced here verbatim. Please take special note.

From: FRANK H POTTER@G6HQTRS@MCAS CHERRY PT
Subject: INTERNET VIRUS ALERT!
Date: Wednesday, May 25, 1994 7:31:08 EDT

A Virus has been discovered on Internet that is disguised as CD-ROM shareware.

Unknown hackers have illegally put the Chinon name on a destructive shareware file and released it on the Internet. This catastrophic virus is named "CD-IT". — DO NOT DOWNLOAD. IT WILL CORRUPT YOUR HARD DRIVE. The program, allegedly a shareware PC utility that will convert an ordinary CD-ROM drive into a CD-Recordable (CD-R) device, which is technically impossible, instead destroys critical system files on a user's hard drive. The program also immediately crashes the CPU, forces the user to reboot and stays in memory.

Widest dissemination is requested. ◆

Eleventh Annual Meeting of the Japanese Society for Technology in Anesthesia and Intensive Care (JSTAIC)

Naosuke Sugai, MD, PhD
Tokyo, Japan

Kanazawa was the site of the 11th annual meeting of JSTAIC on November 20, 1993, organized by Dr. Hidemaro Mori, Professor and Chairman of Kanazawa Medical University. The area was once under the rule of the Maeda Clan, one of the richest and most influential feudal families of the Edo Period (1600-1867). In the city of Kanazawa, one can still find fine gardens from those days and traditional craftsmanship such as the making of gilt and lacquered wares as well as porcelains. The area is also thriving with modern industries and cultural attractions including a chamber orchestra with international players.

The guest speaker was Mr. Akio Hosono, Executive Director of IO Data Co., Ltd., one of two manufacturers dominating memory production in Japan. The title of his talk was "Seeking a favorable environment for personal computers." Mr. Hosono asserted that the software is the culture and predicted that the 21st century will be the age of neurocomputers. He also shared, however, an anxiety that in the future, the education in computer science will be a great problem despite the rather simplistic principles underlying this technology.

Twenty three scientific papers were presented at the meeting. Their topics included monitoring, processing of patient information, simulation and modeling, data base, computer networking, and development of electronic textbooks in anesthesiology, etc. Most of the papers were presented using computerized screens. Some of the more notable presentations are briefly described:

Dr. O. Uchida of the National Cardiovascular Center developed a computerized image processing system to quantify left ventricular wall motion by using two dimensional TEE. Short axis left ventricular images are fed into the system for digital image processing. The goal is to provide real-time estimates of ventricular wall motion.

Dr. K. Morita of Hamamatsu University developed a system for continuous monitoring of autonomic function during anesthesia by measuring the spectral variation of pulse rate. Using this system it is possible to measure spectral variation of pulse rate of a patient by detecting the beat-to-beat interval of systolic peak pressure waves.

Dr. Iwase of Dokkyo University presented his real time spinal anesthesia simulator applying a spinal canal model and Ohm's law. CSF is a well-conducting fluid, in contrast to spinal anesthetic solution which is less-well-conducting. Regional difference of electric resistance of the spinal canal model was measured and the spread of the spinal anesthesia was analyzed.

Dr. T. Sawa of Kyoto Prefectural University did computer simulation analysis for brain glucose concentration. The transport of glucose from the blood to brain is the passive facilitated diffusion obeying simple Michaelis-Menten kinetics. He simulated the glucose concentration in the brain using a simplified 3 compartment mode.

Dr. T. Arai of Fujita Health University is the new president of the society and will organize the 1994 meeting in Nagoya in December at a hall in the Aichi Art Center which also includes a new opera house. In 1996 the meeting will come to Tokyo with Dr. K. Suwa as president-elect. ◆

Meeting Agenda for 1994

Dececember 9, 1994
Twelfth Annual Meeting of
Japanese Society for Technology in Anesthesia and Intensive Care
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Technology Assessment

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and the development of successful transplant techniques. Most health insurers take the position that "experimental treatment" is not covered by their policies. The general concept is that the policy is designed to provide coverage for the individual, not to be a funding mechanism for new technologies. This concept turns out to have limitations when applied in actual practice.

A variety of therapies currently considered "standard" have never really been shown to be effective. Only recently have people focused on the implications of outcomes research and attempted to address systematically questions about the efficacy of treatments. As a result, insurance companies find themselves in the uncomfortable position of routinely covering a variety of "accepted" interventions that remain unproven, and having to make judgments about promising new approaches which are trying to make an entry into a market place that is ever more rigorous in the standards it is applying. Companies confronted with this dilemma must make a decision in the face of uncertainty even when a therapy is no longer considered experimental. One can of course wait for FDA approval, but this, in the view of many practitioners, is far too stringent a standard. If an insurance company wants to go out ahead of the FDA, however, it takes upon itself the same burden the FDA has of investigating the appropriateness of various treatments. It is ultimately no easier for individual companies to do this than it is for the FDA itself.

Unbiased Assessment

Technology assessment is enormously resource intensive. Competent people need to be involved, and they must have access to current data. Though critics note that payers serve their own interests by denying services, one could equally well observe that those professionals who "know the most about new technologies" are themselves often involved in research, and are motivated to use insurance companies to fund ongoing work. Many companies have tried to make technology assessment more objective. If one can create a structure for making these decisions that is not financially accountable to the organization, it is hoped that one might get a less "biased" review. Some large collaborations in the managed care industry have developed where several HMO's have placed representatives on technology assessment teams. The teams review the status of new therapies and develop standards to guide benefits. This process is costly, but shared, and the contributors receive, in exchange for that support, access to a thoughtful and disciplined technology assessment process. One example is the Blue Cross/Blue Shield National Association which has active ongoing technology assessment. People have also looked to the Agency for Health Care Policy and Research (AHCPR) to define, at the Federal level, the roles of new technologies, but the problem remains the same; it is enormously resource intensive to generate guidelines, and the guidelines have a short life as they are superseded by the creation of new approaches, even in the time frame that it takes to develop the guidelines in the first place.

One could argue that insurance companies have "a responsibility" to support research, and that they should therefore agree to provide coverage for experimental therapies. The problem, from the insurance company perspective, is that it represents a vast open-ended commitment. When large industrial corporations (such as auto manufacturers) participate in research, they do so in a disciplined highly structured way; they create a research budget; they define, usually in advance, their expectations of what the research will produce; and they make ongoing decisions about which research they will continue to fund, usually in close consideration of overall company goals and objectives. This is not at all what would occur if insurance companies agreed to fund open-ended research.

Resources vs Expectations

Ultimately, the problem of technology assessment can only be addressed by dealing with the discrepancy between patient expectations and society's resources. As soon as one stops short of making the commitment to provide "everything" that patients may want, one immediately becomes entangled in the thicket of what will and what will not be provided. Insurance companies have an interest in seeing these questions resolved by policy at the national level. Policies would make it easier for companies to know, and plan for, their responsibilities to their constituents and therefore to set prices realistically. If we do not deal with this problem in a systematic comprehensive way, we can expect that it will be addressed in the courts where people can take any issue that is not resolved to their satisfaction. The generation of meaningful standards will require an unusual but not unprecedented degree of consensus in the medical community. Fifteen years ago, there was considerable debate regarding the indications for pacemaker placement. Today, there is no longer any academic discussion. It has all been reduced to Medicare standards of when the insertion of a pacemaker will be covered. This, of course, happened in a fee for service system. Nevertheless, the principles are clear; if physicians will participate constructively in the technology assessment process without impugning the motives of the insurance companies, there is hope that we can develop consensus about these difficult issues. ◆

Informaticians Focus on Enterprise Integration, Mobile Pen-Based Computing at Spring Congress

San Francisco was the scene of one of the most progressive conferences in medical computing technology held thus far in 1994: the American Medical Informatics Association (AMIA) 1994 Spring Congress. From May 4 to May 7, 1994, over 600 physicians, bioengineers, nurses, students, and others gathered at the Parc Fifty-Five Hotel for a comprehensive look at system integration strategies and the new technology of pen-based applications.

According to Tom Rindfleisch, M.S., Director of the Knowledge Systems Laboratory at Stanford University and 1994 Spring Congress Program Chair, information technologies are having a profound impact on clinical practice and biomedical research. They are also changing the way medical students learn and the way institutions are administered. There are mounting pressures to control costs; to understand and improve clinical decision making; to provide more consistent, high-quality care; and to ensure that care is available to all members of our society. These factors are making the use of electronic information systems for biomedicine an imperative.

Planners of the Spring Congress solicited abstracts that described current work and results relevant to either of the two themes. The Congress began with a day of four, half-day tutorials. "Knowledge Sharing and Reuse" stressed allowing developers who encode knowledge for a particular task to reapply that knowledge both within new software architectures and across institutional settings. "An Introduction to the Internet" provided a solid base for new users and information highway. "Successfully Managing Change for Enterprise Integration" provided practical information and tools to help survive and thrive during major system changes. "Mobile Wireless Communications—Technologies, Systems, and Prospects" introduced participants to key components of radio and infrared wireless communication systems, discussed implementations of substituting wireless links in a system originally designed for wired communications, and described various case studies.

The program portion of the Congress began with a rousing Plenary Session featuring Larry D. Grandia, M.E.A., Corporate Vice President, Information Systems, Intermountain Health Care, Salt Lake City, Utah. Grandia described in practical terms the vertically integrated health care delivery system at IHC, and expounded on the invaluable role that medical informatics has played, and continues to play, at IHC.

Over 225 submissions were received for review by the Spring Congress Program Committee, making this one of the most popular Congresses ever. Program tracks included computerized patient records, databases, practice of enterprise integration, standards, organizational issues, mobile computing, knowledge-based systems, architectures, and vocabulary. Each track contained up to ten sessions of three or four papers or panels each.

This intense four-day program ended with a closing session by Larry G. Tesler, Chief Scientist, Apple Computer, Inc., Cupertino, CA. Tesler spoke on "Mobile Computing in the 1990s" and demonstrated a mobile pen-based system.

In addition to the many papers presented, the Spring Congress also served as a membership gathering place. Many of AMIA's committees and Working Groups held meetings. For example, the AMIA Working Group on Anesthesiology, Critical Care and Emergency Medicine, headed by S. Mark Poler, M.D., of Geisinger Medical Center, Danville, PA, met during the Congress.

The Call for Participation for the 1995 Spring Congress is now available from AMIA. The theme of the meeting is "Capturing the Clinical Encounter." The Congress will take place June 24 - 28, 1995, at the Hyatt Regency Cambridge, Cambridge, MA. George Hripscak, M.D., of the Center for Medical Informatics, Columbia-Presbyterian Medical Center, New York, NY, is the Program Chair. The Program Committee is looking for abstracts that describe new methods to acquire clinical data, methods for storing and querying a complex longitudinal clinical records, integration of the computer into routine practice, and evaluation of electronically capturing the clinical encounter.

Medical Professionals interested in informatics may wish to join AMIA, the premier association in the United States dedicated to the development and application of medical informatics in the support of patient care, teaching, research, and health care administration. AMIA assists physicians, scientists, and informaticians in providing a resource where new skills can be learned and shared to benefit the world community. For a membership application and information packet, please contact AMIA at amia@camis.stanford.edu (Internet), (301) 657-1291 (phone), (301) 657-1296 (fax) or write to AMIA, 4915 St. Elmo Avenue, Suite 302, Bethesda, Maryland 20814. ◆