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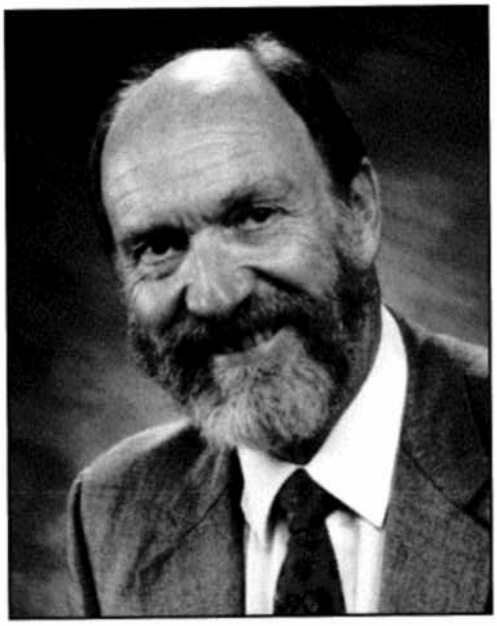

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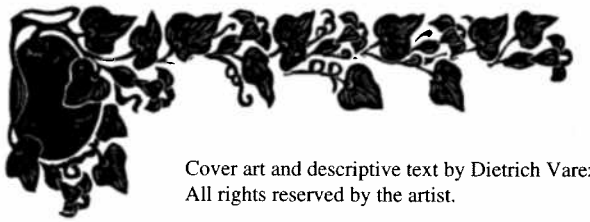

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Menehune Picking Breadfruit

Breadfruit was usually harvested with a long pole. The branches of the breadfruit tree breaks very easily and many have fallen to their death in pursuit of the fruit. Thus comes the Hawaiian admonition that the entrance to the spirit world is from the branch of the breadfruit tree.

Editorial

Norman Goldstein MD

This issue of the Journal contains two manuscripts of special interest.

Richard Wasnich, MD, Director of the Hawaii Osteoporosis Center, has long been involved with studies dealing with this major problem in our aging population. He presents the results of one of his projects, a standardized approach to bone density and the interpretation of fracture risk. For further information, contact the Center (800) 592-2626 or the National Osteoporosis Foundation, 1150 17th St NW, Suite 500, Washington DC 20036.

Carolyn Cook Gotay, PhD and her associates at the Cancer Research Center of the University of Hawaii assess the attitudes, behavior and barriers to mammography in the Queen Emma Clinics at the Queen's Medical Center. With only one in six women being compliant with guidelines, it is obvious that much has to be done to educate women about breast cancer and mammography.

Both manuscripts are "eye openers" and must be read.

This month we also start a series of articles written by A.A. "Bud" Smyser, which originally appeared in the Honolulu Star-Bulletin. The popular "Hawaii World" series written by Smyser, former Editor-in-Chief and now contributing editor of the Star-Bulletin served as the impetus for our November special issue on Death with Dignity.

HMA President's Message

Carl W. Lehman MD

RE: AMA/Federation of Medicine Re-organization

At the recent AMA Annual Meeting held in Chicago, a re-organization of the Federation of Medicine was accomplished. The change of organization was done to enable organized medicine to be more relevant to each individual physician and to assist specialty and local medical societies by providing more services effectively and cost efficiently. As I listened to over 10 hours of delibertation, discussing the re-organization of the Federation, I had difficulty conceptionalizing the organization and function of the Federation. Each physician will be sent a registration form to allow him to declare the organization through which he wishes to be represented at the AMA level. This may be through various specialty organizations, but in addition, he will have representation through his State Medical Society. This re-organization will alter the organization of the assembly of the House of Delegates, however, I doubt very much that it is going to significantly alter the discussion of issues. I believe that the process of reconsidering the organization of the Federation of Medicine has influenced many in the thought process of how to better serve and protect the physicians rights to serve their patients adhering to our high standards of professionalism.

The HMA has initiated discussions with AMA personnel to consider carrying on functions in a more cost effective manner than the HMA can perform independently. In my opinion, the AMA, is one of the most democratic organizations in the country. Physicians are well represented at the AMA, however, it is obvious that only a small percentage of the physicians in the country are able to attend a given meeting. The strength and function of the national organizations is certainly different from the state and local levels, but we address similar problems at different levels. Many organizations in the past were determined by the need for smaller units in order to be functional for individual members. Now with changes in modern communication, e.g. the use of the computer Internet and facsimiles, local functions may be done at the national level in a more cost effective manner by sharing the use of a large, complicated system rather than involving multiple small societies throughout the country. For example, this year I have received a number of Congressional Legislative bills by fax from the AMA with important bullet notes to respond to our local Legislators, even providing the phone numbers and addresses. This information allows me to respond in a timely manner to national legislative issues that affect our profession. In the past, communicating by mail would have been so cumbersome and slow that by the time information would have been received at a local level, the issues are likely to have bee acted upon.

The AMA addresses scientific and educational materials, however, specialty societies are also involved with scientific publications. I believe the future of organized medicine must make efforts to utilize the most effective system in communicating information to physicians. The problem being that physicians do not have time to read and digest all the information from every source. It is also the responsibility of our profession to address public health issues, mainly health problems which are prevalent in our society, but are not generally addressed on an individual basis. For example, drug, alcohol and tobacco use, and domestic violence which I will address in more detail in the September issue and organizing to protect the profession against degradation by interference from inappropriate business management and government regulations. Although the problems may become more vast, our ability to share ideas and communicate ideas at great distances are becoming very close.

If organized medicine is to maintain its power and effectiveness, we must consider belonging to organized medicine as an entity, not as various sections. It is unrealistic to believe that we can support the AMA without supporting the state or county organizations. Likewise, it becomes vague as to how one can be represented at the AMA level if he is only a member of the county and state organizations, but not an AMA member. I predict that we will go back to the idea of unity membership, not that one has to belong to 3 organizations or none at all, but rather that the Federation of Medicine will be considered one organization with subdivisions or units to continue to function in a relevant manner. We wish to provide services and relevant activities for all members whether they be starting in the profession at the medical school level, the residency level or in active practice. Furthermore, we wish to address the needs of physicians to properly practice professionally irregardless of the business organization in which they practice. We must protect the freedom of individuality of practice as well as the freedom for patients to choose their preference of medical care. Unfortunately there are mega-organizations in our country today who are willing to take over the control of the practice of medicine. They have the monetary power to do so, but they do not have the professional training to make appropriate decisions about the care of the patient. We must protect that right through our power of unity in organized medicine.

Military Medicine

Military Medicine
Benjamin W. Berg MD

Tripler Graduation

On June 14, 1996 at Tripler Army Medical Center (TAMC) 103 graduates of 18 programs were presented with certificates and congratulations. The keynote speaker was the Commanding General, Brigadier General Warren A. Todd Jr. attending were Major General Steven Silvasy, Acting Commander, US Army Pacific and by the immediate past Commanding General (TAMC), Brigadier General James Hastings, Chief of Medicine, JABSOM. The graduates were represented by the Intern Class president, CPT Christopher Goring, who presented teaching awards and delivered brisk military commands as required during the formal military ceremony.

Brigadier General Todd delivered an address which focused on the future of academic medicine in the U.S. Army, as Military Medicine evolves to embrace the managed care model. Military Medicine has faced the pressures of a shrinking defense budget, with losses of funding and physician staff as the active duty population shrinks. In order to continue to provide quality care to the active duty, dependent and retired population, managed care has been selected as the operational model for cost containment. Eligible patients who receive care outside of the Military facility because of unavailability of services can already enroll in Tricare Prime, the available managed care program which incurs the least out of pocket expense. Brigadier General Todd emphasized to the graduates the similarity of civilian managed care environments and the new Military Medicine environment. He noted the important roles of research and academic medicine in maintaining the quality of health care delivery. The availability of funding for academic programs and research has decreased nationwide, and alternative sources must be explored. Academic Medical Centers (usually University affiliated) cannot continue to function under the traditional teaching model.

Managed Care paradigms of ready access, continuity of care across the inpatient-outpatient spectrum, and least costly settings for care delivery, are in direct conflict with the traditional operation of teaching institutions. Academic centers must then shift operational characteristics (paradigms) if we are to continue to function as education centers. Brigadier General Todd proposed a model for today's successful academic medical center. Five features were noted to be required for success. 1) Practice must reflect the identified population based needs of the community served; 2) Continuity of care across the continuum with housestaff/faculty "firms" will be the rule; 3) Multidisciplinary care teams should be organized in primary care and specialty practices, with coverage for continuity; 4) Prevention, education, early detection, and "self care" will be cornerstones of the new paradigm; and 5) the concept of value must be built into training programs: *Value equals quality times patient satisfaction divided by cost.* Teaching programs will thus provide what the public wants; Providers who take primary responsibility, easy access to useful information and knowledge, and humane relationships with providers.

The graduating class faces an exciting and challenging future in medicine. Of the 54 resident graduates, 6 will participate in Fellowship training. The internship class (44 graduates) will send 33 graduating interns directly into residency training. Others will be assigned in their medical specialty area to Army Hospitals and Clinics. The overseas assignments ranged from Korea to Germany. Others are off to practice in, Texas, Washington State (and DC), Alabama, Kansas, and other sites across the United States. Forty graduates are lucky enough to be staying in Hawaii for the next tour of duty.

The residency programs at Tripler will remain an integral part of the institution. The only casualty of recent budget realignments is the Pathology residency. This loss will be a palpable absence for the practitioners and training programs at Tripler.

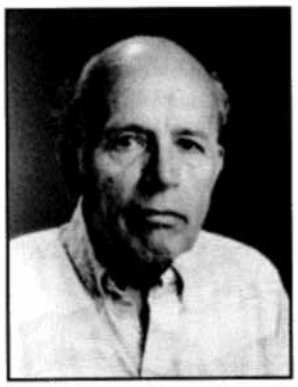
Graduating Resident Roster *(number of graduates in each discipline)*

Fellows			
Psychiatry	2	Otorhinolaryngology	2
Pediatrics	1	Pathology	2
Psychology	1	Health Care Admin	2
		Urology	1
Residents		Maxillofacial Surgery	1
Internal Medicine	8	Podiatry	1
Obstetrics/Gynecology	7		
Family Practice	7	**Interns**	
Radiology	6	Transitional	18
General Surgery	4	Internal Medicine	7
Psychiatry	4	Surgery	7
Clinical Psychology	4	Pediatrics	7
Pediatrics	4	Family Practice	7
Orthopedics	3	Psychiatry	4
Clinical Pharmacy	3	Obstetrics/Gynecology	6

Assisted Suicide is Gaining Public Support

by A.A. Smyser

Reprinted from the Star-Bulletin 3/9/95, Hawaii's World



Bud Smyser

Dying has come out of the closet. It never will be wildly popular but—after decades of using high tech to extend life without regard for cost or discomfort—death is again being seen as something natural and even to be welcomed.

Terminal patients no longer blindly accept surgery, chemotherapy or radiation when these may be simply dehumanizing, and wasteful of medical effort better directed elsewhere.

I told in a column Tuesday how more and more people with little chance of regaining meaningful lives are seeking "good deaths"—often with the help of hospice teams that emphasize as much comfort as possible and family support even after death.

Beyond expanding hospice care, there are two particular areas where we need more progress: pain control, which should be non-controversial, and assisted suicide. In January, 70 percent of respondents in a national Harris Poll supported assisted suicide.

It remains illegal, however, throughout the U.S. Oregon voters authorized it by 51-49 last November, but court injunctions have delayed its implementation.

In 1992, when he became national president of the American Cancer Society, Dr. Reginald C. Ho of Straub Clinic was influential in getting ACS to adopt a national policy recommending no limit on the use of pain medication except that needed for the particular individual—even in nonterminal cases.

Fears of addiction are overdrawn and simply silly in terminal cases. Once morphine was doled out in doses of only 15 or 20 milligrams every few hours. Now some patients get 500 or more and are still alert.

In 1989 a group of Hawaii nurses took the lead in forming the Hawaii Pain Initiative, based at Queen's Medical Center. They can be contacted for advice and help. So can either of Oahu's two hospices—St. Francis and Hospice Hawaii.

No figures are available but competent people tell me there is still too much undertreated pain in our hospitals and that too many unnecessary treatments are being administered to dying patients. I dared to call this "torture" in a 1981 Star-Bulletin editorial page article.

At a medical society meeting, I defended myself by saying that torture is the infliction of unnecessary pain. Some sufferers still have their hands tied down to keep them from pulling their tubes out. If there were ways to publicize how much abuse still exists, I'm sure it could be further reduced.

Britain's Dame Cicely Saunders, who founded the first modern hospice in 1967, set a goal for hospice care to be so good no patient would want to commit suicide. There do seem to be suffering situation, however, where only a dark, long tunnel looms before the relief of death comes naturally.

The Netherlands permits euthanasia by injection for patients who may be pain-free but still want to die because of such reasons as loss of dignity, mental deterioration, fear of losing control, and unbearable suffering mostly for reasons other than pain.

About 1.8 percent of the kingdom's death occur this way. Another 0.3 percent are helped to assisted suicide from potions, which is all the pending law in Oregon would permit. Several times more Dutch people request help than are granted it. Controls are substantial.

The issue in the U.S. may be decided by a combination of court rulings and state laws. A U.S. Supreme Court resolution of conflicting lower court decision is probable in the next few years. A Washington state federal judge already has ruled in favor, a New York judge against. If the high court doesn't find a national right to assisted death, as it found a national right to abortion, it may at least leave the matter for states to decide.

Then there will be arguments over whether to limit it to only terminal patients, as Oregon's pending law does, or to make it more widely available, under committee review, as proposed by Dr. Sherwin Nuland, author of the current best-selling book, "How We Die."

In Hawaii nearly 7,000 people die every year. We know how to make death kinder in most situations. But the fact that 80 percent of people die in hospitals when 80 percent deaths at home would be closer to ideal tells us we aren't doing well enough.

Don't be afraid to talk back to your physician or even change physicians in the process.

When Doctor's Make Mistakes

A Commentary

S.Y. Tan, MD, JD

Reprinted from the Star-Bulletin 12/17/95

Editor's Note—

Dr S.Y. Tan is uniquely qualified to speak to the 1996 graduating class of our medical school. S.Y. is a superb physician as well as having received his Law degree. He is a Professor of Medicine and Adjunct Professor of Law at the University of Hawaii and he made a mistake, and admitted it.

Dr Tan is also the Governor-elect of the Hawaii Chapter of the American College of Physicians, and served as Guest Editor for our special issue on Medicine, Law and Bioethics (April 1995).

Though he and I disagree on several aspects of End-of-Life decisions,[1] I highly respect this very special Renaissance Man.

Every physician should read and reread his commentary.

The elderly man, accompanied by his wife, awaited his turn to see the doctor in the emergency room. He was short of breath, and he insisted on being hospitalized for treatment. The on-call medical resident dutifully examined the patient, and carefully reviewed his EKG and chest X-ray. He diagnosed congestive heart failure, prescribed a diuretic, and sent the patient home, believing that he could be safely treated as an outpatient. "You're making a mistake, doc, you're making a mistake, doc," the man pleaded, as he was wheeled out of the hospital ER.

The following day, he was found dead at home.

The chief of medicine investigated the case, but was unable to find negligence. The resident had correctly interpreted the test results, and his treatment plans were appropriate. But the patient's parting words "you're making a mistake, doc" will not easily be forgotten. The year was 1973, and I remember the patient well, because I was that medical resident.

I tell this experience to introduce my talk this afternoon, which is entitled "When doctors make mistakes." In the years of training to come, and beyond, perhaps some of my weak words today will help you find faith in our profession, hope in your mistakes, and charity towards our errant colleagues.

To err is human. And despite the notion that doctors are not supposed to make mistakes, the truth is that we do. And often. Fortunately, the vast majority of medical errors cause no serious harm. Studies conducted by Harvard researchers tell us that 4% of hospitalized patients suffer iatrogenic injuries, i.e., injuries caused not by the disease itself, but brought about by the treating doctor or institution. Iatrogenic injuries account for about 500 deaths each day in our hospitals across the nation. 500 deaths—thats more than the fatalities from one jumbo jet crash—every day.

In the intensive care unit, we make an average of 1.7 mistakes per patient per day. To be sure, almost 200 patient-care activities take place daily in the intensive care unit. Still, a 99% level of proficiency, a 1% failure rate, is too high to be tolerated in a hazardous industry. Not even 99.9%. At 99.9%, for example, there would be 2 unsafe plane landings at O'Hare airport each day, and the post-office would lose 16,000 pieces of mail every 60 minutes. And there would be 32,000 bank checks deducted from the wrong bank every hour.

Doctors respond predictably to medical errors. We hide the, and we bury a few of them. Most commonly, doctors deny the mistake, asserting instead that the adverse outcome was caused by the underlying disease rather than medical error. Or they may prove defensive, blaming others for the mistake—the nurse's fault, the hospital's fault, even the patient's fault. But the doctors I wish to draw attention to are the ones who suffer in silence, fearing discovery and publicity, depressed with guilt and fallen esteem over what they perceive to be failed duty. They feel genuine sorrow, but few will share their contrition with the patient or the family. And none will ask them for forgiveness.

Why not? Because society, in conspiracy with the profession, has perpetuated the myth that good doctors do not make mistakes. Voltaire in 1764 compared us to God. "They even partake of divinity", he wrote, "since to preserve and renew is almost as noble as to create." During residency training, your program director will exhort you to strive for perfection; this you must do. But I will also tell you that even as you attempt to avoid all mistakes, you will fail, and you cannot escape making at least a few.

What should you do? I suggest 4 strategies. First, reaffirm your commitment to the goal of the highest standard of care. This you achieve by diligence and study. Second, exchange your mask of infallibility for the robe of humility. Disavow these twin sins of the profession, the sin of mediocrity, and the sin of arrogance. GK Chesterton, the famous English author of the Father Brown short mysteries, call pride "an inordinate love of our own excellence, the king of all vices." Third, you must learn to accept and bear your burden by seeking the supportive love of family, the shared understanding of a trusted friend, and the reassuring warmth of a respected teacher.

Finally, at the risk of startling you, I suggest you inform your patient whenever you have made a mistake. It was Mark Twain who said, "Always do right. This will surprise some people, and astonish the rest." Disclosure is the ethical thing to do. Sorrow and contrition are wasted in solitude; in confession, they rejuvenate. Your patients have the right to know, and they will approve and respect you for your honesty and integrity. It has been said that almost all of our faults are more pardonable than the methods we think up to hide them. Oh, I know that the hospital risk manager and the lawyers will remind you to be silent, lest your disclosure precipitates a malpractice lawsuit. But believe they are wrong. Competent doctors do make mistakes, and our patients will not abandon us when we expose our humanity by disclosing our errors.

To reduce medical errors, the profession badly needs to do its own part. It needs to acknowledge that mistakes abound. Better for the healthcare system to assume that individuals will make mistakes, than to simply rely on them not to. Did you know that during any overseas commercial flight, a human error or instrument malfunction occurs every 4 minutes—yet each event is promptly recognized and corrected. This is the science of systems errors and failures at work. It can help the healthcare industry. Better standardization, task design, checks and

➤ *Continued on Page 146*

Barriers to Mammography in a Low Income, Multiethnic Clinic Population

Carolyn Cook Gotay PhD, Brian F. Issell MD, Brenda Y. Hernandez MPH, Seth Serxner PhD, MPH

Breast cancer-related knowledge, attitudes, behaviors and barriers to obtaining a mammogram were assessed in women attending a primary care clinic serving a low-income minority population. Although most women believed in the value of mammograms, fewer than one in six was compliant with guidelines, and there were considerable deficits in knowledge about breast cancer risk. Ethnic and age differences in responses have implications for health program planning.

Introduction

Breast cancer poses a significant threat to the health of the women of Hawaii. During the past five years, breast cancer was the leading malignancy and a major source of cancer-related death in the state. The burden of breast cancer is disproportionate among Hawaii's ethnic groups. Caucasians and Native Hawaiians are at highest risk for being diagnosed with breast cancer; respective age-adjusted breast cancer incidence rates are 133 and 112 per 100,000 population, compared to 59 for Filipinas and 88 for Japanese. Native Hawaiian women are also at greatest risk of dying from the disease, with mortality rates of 38 per 100,000, compared to 30 for Caucasians, 16 for Filipinas, and 14 for Japanese.[1] Breast cancer is more likely to be at a more advanced stage at diagnosis in Native Hawaiians and Filipinas. Among breast cancer patients in Hawaii, 56% of Native Hawaiians and 46% of Filipinas present with regional or advanced disease, compared to 30% of Caucasians and 27% of Japanese.

An effective strategy to diagnose breast cancer at an early, more treatable stage is available: screening asymptomatic women through mammography and clinical breast examination reduces breast cancer mortality and morbidity for women 50 years of age and older.[2] Despite the widespread availability of mammography, many women do not obtain mammograms, especially on a regular basis as recommended in screening guidelines.[3] In particular, women from minority groups and those of low socioeconomic status are less likely to report having been screened.[4-5] Low-income may affect the likelihood of having insurance coverage or the ability to pay for mammograms. Low-income also often co-varies with other variables such as education that may influence screening behaviors. It appears that sociocultural variables may affect mammography participation[6] even after controlling for income.[7]

Although information has been reported on barriers to mammography in some minority groups such as African-Americans[8-9] and Hispanics,[10-11] virtually no data are available with respect to Asians and Pacific Islanders. In addition, few studies in Hawaii have focused on the cancer-related knowledge, attitudes and behaviors among individuals living in poverty. This project addressed these gaps by identifying barriers to obtaining a mammogram in women attending an inner city clinic designed to serve low-income populations in Honolulu.

Methods

Setting.—The study was conducted at an outpatient clinic affiliated with a major hospital which provides primary care and medical specialty services to indigent patients in downtown Honolulu. Interviews were conducted over a one-month period by a female interviewer with a background in health education.

Patient Eligibility.—Women 40 years or older with no past history of breast cancer or recent breast abnormalities were eligible for participation. (At the time this study was conducted, there was agreement among all major national organizations about the advisability of regular screening mammograms for all women aged 40 years and older.)

Procedures.—Patient charts were examined to identify eligible patients on a daily basis. On arrival at the clinic, the patient was asked if she wished to participate in the study. After women agreed to participate and signed the informed consent form, they were asked to complete a written survey which included 40 items. The questionnaire was designed to be self-administered, and it included descriptive information (e.g., marital status, ethnicity, education, employment, income) as well as questions about knowledge, attitudes, and practices related to mammography and breast cancer. Most items were answered using scaled response categories, and questions which had been utilized in previous studies were used wherever possible. An interviewer administered the questionnaire to women who required assistance. After the questionnaire was completed, the women were randomly assigned to an educational intervention; this aspect of the project will not be discussed further here.

Results

Description of the sample.—A total of 98 women participated in the study. No patient who was approached for participation declined to take part. The demographics of the participants can be seen in Table 1. There was a broad age distribution, with the largest proportion (about one-third of the women) between 40 and 49 years

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Table1.—Characteristics of the Participants

Demographics	Frequency (%)
Age	
40 - 49	34 (35)
50 - 59	25 (26)
60 - 69	19 (19)
70+	19 (19)
Education	
Less than high school	35 (37)
High school graduate	31 (32)
More than high school	30 (31)
Ethnicity	
Caucasian	37 (38)
Hawaiian/Part Hawaiian	19 (19)
Japanese	8 (8)
Hispanic	7 (7)
Filipino	5 (5)
Chinese	2 (2)
Other Pacific Islander	8 (8)
Mixec/Other	12 (12)
Annual Income	
Less than $10,000	66 (73)
$10,000 - $15,000	9 (10)
More than $15,000	15 (17)
Marital Status	
In marital-type relationship	27 (28)
Not in marital-type relationship	71 (72)

Note: Total number of participants equals 98; in all tables, numbers may be less due to missing data, and total percentage may not equal 100% because of rounding.

Table 2.—Mammogram History by Ethnicity and Age

	Last Mammogram		
	Past 2 yrs N (%)	> 2 yrs ago N (%)	Never/DK* N (%)
Ethnicity			
Caucasian	26 (70)	4 (11)	7 (19)
Hawaiian	6 (32)	5 (26)	8 (42)
Other	25 (63)	3 (8)	12 (30)
Age			
40 - 49	17 (50)	5 (15)	12 (35)
50 - 59	16 (67)	5 (21)	3 (13)
60 +	23 (62)	2 (5)	12 (32)
Overall	57 (59)	12 (13)	27 (28)

*DK indicates women who could not remember when or if they had had a mammogram.

Table 3.—Attitudes Toward Breast Cancer by Ethnicity*

Item	Caucasian N (%)	Hawaiian N (%)	Other N (%)	Overall N (%)
I would rather not know if I had cancer.	2 (5)	1 (6)	8 (20)	11 (12)
At my age, I don't need to worry about breast cancer.	6 (16)	2 (11)	11 (28)	19 (20)
Painful treatment is worth getting if it improves my chances of living longer.	22 (60)	11 (61)	31 (38)	64 (68)
Most women would be afraid to tell their husband of partner they have cancer because it would affect the relationship.	10 (29)	12 (67)	15 (38)	37 (39)
I have doubts about some of the things doctors say that they can do for you once you have cancer.	14 (39)	16 (89)	17 (43)	47 (50)
There is not much a person can do to prevent cancer.	14 (39)	11 (61)	9 (23)	25 (47)
With breast cancer, most women can live a normal life if it is discovered and treated early.	33 (94)	19 (100)	34 (88)	86 (91)

*Table reflects number (%) of women who agreed with each statement on a 3-point scale.

of age. Ethnicity was assessed by self-report, and almost 60% of the participants were either Caucasian or Hawaiian/part Hawaiian, with the remaining women reflecting a wide variety of ethnic backgrounds. Since the other ethnicities comprised too many different groups to be interpretable, ethnic analyses in this paper are based on comparisons between Caucasian and Hawaiian/part Hawaiian women. Consistent with the population targeted by the clinic, two-thirds of the participants reported family incomes of less than $10,000 per year, although almost one-third (31%) had education beyond high school. Only 26% of the women were married or cohabitating with a partner. This figure seems very low when compared to figures for the state as a whole, which report 55% of women 15 years of age and older as married,[12] supporting a link between poverty and a single earner.

Use of mammography.—Table 2 reports the women's past use of mammography as a function of ethnicity and age. It can be seen that while 28% of participants had never had a mammogram, the remaining 72% had had at least one previous mammogram. American Cancer Society guidelines for mammogram frequency (which guide mammography reimbursement in this state) are that all women 40 years of age and older obtain mammograms every one or two years. Based on this criterion, 59% of these women were adherent to these guidelines. Although the numbers of individuals in the different ethnic groups were quite small, there was a significant difference ($X^2(1) = 7.7$, $p < .006$) between Caucasian and Hawaiian women, such that the Hawaiian women were less likely to be adherent to the guidelines. There were no significant differences according to age.

Attitudes towards breast cancer.—Table 3 summarizes participants' attitudes about breast cancer overall and according to ethnicity. Overall, respondents were positive about the value of early detection and treatment of cancer: high proportions agreed that cancer treatment is worth getting, that discovering breast cancer early allows successful treatment, and that it would be preferable to know if they had cancer. Overall, most women were aware that they were at risk for breast cancer; only one in five women believed that her age obviated concern about breast cancer. A diversity of opinion was evident in other areas: on whether women would be afraid to tell their partners if they had cancer, on whether they had doubts about physicians' claims about their ability to treat cancer, and about whether cancer could be prevented.

Ethnic-related differences were seen in a few areas.—Hawaiian women were more likely to agree (67% compared to 29% of Caucasians) that most women would be afraid to tell their partner about their cancer ($X^2(1)=7.1$, $p < .01$); since nearly equal proportions of Hawaiian and Caucasian women were unmarried (84% and 82% respectively), this difference does not derive from marital status and may reflect different cultural patterns of gender relationships. The Hawaiian women also were much more skeptical of what doctors say ($X^2(1)=12.2$, $p < .0005$).

Only one age-related difference was seen, with respect to the statement, "At my age, I don't need to worry about breast cancer." 41% of older women (aged 60 and above) agreed with this statement, compared to 9% of women 40-49 and 4% of women 50-59. This difference was significant ($X^2(2)=15.8$, $p < .0005$).

Perceptions of risk factors.—Table 4 presents findings for the participants' beliefs about breast cancer risk factors. Since findings were very similar across ethnic and age groups, the table presents data for the women as a whole. The risk factors included those which are known scientifically to increase breast cancer risk (e.g., early menses, late menopause) and to have no effect on risk (e.g., smoking cigarettes), as well as some for which a link is currently unclear (e.g., high fat diet, lack of exercise).

Table 4.—Beliefs About Breast Cancer Risk Factors by Ethnicity*

Potential risk Factor	Caucasian N (%)	Hawaiian N (%)	Other N (%)	Overall N (%)
Hawaiian ethnicity	7 (19)	4 (22)	5 (13)	16 (17)
Mother had breast cancer	27 (73)	12 (67)	22 (55)	61 (64)
Sister had breast cancer	21 (58)	10 (55)	15 (38)	46 (48)
Menstrual period began before age 13	8 (22)	1 (6)	2 (5)	11 (12)
Menstrual periods stopped after age 55	4 (11)	5 (28)	7 (18)	16 (17)
Having one's children after age 30	7 (19)	6 (35)	10 (25)	23 (24)
Breastfeeding one's children	4 (11)	2 (11)	2 (5)	9 (9)
Eating a diet high in fat	22 (61)	7 (41)	22 (55)	51 (55)
Lack of regular exercise	13 (36)	7 (41)	21 (52)	41 (43)
Using alcohol	16 (44)	5 (29)	21 (52)	42 (45)
Smoking cigarettes	23 (64)	11 (65)	29 (73)	63 (67)
Taking medications such as estrogens or birth control pills	26 (70)	7 (41)	17 (43)	50 (53)

*Table reflects numbers (%) of women who agreed that each factor "somewhat" or "very much" increases a woman's chances fo getting breast cancer on a 4-point scale (not at all, somewhat, very much, don't know).

It can be seen that there was a large amount of misinformation about cancer risk among the participants. The highest rated risk was smoking (endorsed by two-thirds of the women), a factor which had not been implicated in breast cancer development at the time of this study. Established risk factors such as being Hawaiian, early menstruation, late menopause, and having children at an older age were each recognized by fewer than one woman in four overall. Many women were aware that breast cancer in one's mother was a risk factor, and nearly half overall also knew that having a sister with breast cancer increased risk. A large proportion correctly stated that breast feeding did not increase breast cancer risk. The other factors all reflected a diversity of opinion (as many women agreeing as disagreeing or being unsure), which is appropriate since the scientific literature is equally unclear about whether these factors increase breast cancer risk.

Table 4.—Beliefs About Breast Cancer Risk Factors by Ethnicity*

Potential risk Factor	Caucasian N (%)	Hawaiian N (%)	Other N (%)	Overall N (%)
Hawaiian ethnicity	7 (19)	4 (22)	5 (13)	16 (17)
Mother had breast cancer	27 (73)	12 (67)	22 (55)	61 (64)
Sister had breast cancer	21 (58)	10 (55)	15 (38)	46 (48)
Menstrual period began before age 13	8 (22)	1 (6)	2 (5)	11 (12)
Menstrual periods stopped after age 55	4 (11)	5 (28)	7 (18)	16 (17)
Having one's children after age 30	7 (19)	6 (35)	10 (25)	23 (24)
Breastfeeding one's children	4 (11)	2 (11)	2 (5)	9 (9)
Eating a diet high in fat	22 (61)	7 (41)	22 (55)	51 (55)
Lack of regular exercise	13 (36)	7 (41)	21 (52)	41 (43)
Using alcohol	16 (44)	5 (29)	21 (52)	42 (45)
Smoking cigarettes	23 (64)	11 (65)	29 (73)	63 (67)
Taking medications such as estrogens or birth control pills	26 (70)	7 (41)	17 (43)	50 (53)

*Table reflects numbers (%) of women who agreed that each factor "somewhat" or "very much" increases a woman's chances fo getting breast cancer on a 4-point scale (not at all, somewhat, very much, don't know).

Table 5.—Perceived Personal Risk of Breast Cancer

	Likely N (%)	Unlikely N (%)	Don't Know N (%)
Ethnicity			
Caucasian	10 (28)	16 (44)	10 (28)
Hawaiian	8 (42)	4 (21)	7 (37)
Other	5 (12)	19 (45)	18 (43)
Age			
40 - 49	10 (39)	13 (39)	10 (30)
50 - 59	8 (32)	11 (44)	13 (37)
60 +	5 (13)	14 (37)	19 (50)
Overall	23 (24)	39 (40)	35 (36)

Personal risk of breast cancer.—The respondents were asked how likely they felt it was that they would be diagnosed with breast cancer at some point in their lives. Table 5 indicates the proportions of women who thought they were at high risk for breast cancer by ethnicity and age. It should be noted that considerable numbers of women in all groups responded "don't know": that is, they had not

Table 6.—Concerns About Mammography by Ethnicity*

Concern	Caucasian N (%)	Hawaiian N (%)	Other N (%)	Overall N (%)
I think it is going to hurt	17 (49)	3 (17)	10 (25)	30 (32)
I feel embarrassed about having a mammogram	10 (29)	3 (17)	11 (29)	24 (27)
I am worried that breast cancer will be found	18 (51)	12 (67)	17 (43)	47 (51)
I am concerned about getting too much radiation	10 (28)	7 (38)	17 (43)	24 (37)
I think this is a very good way to find breast cancer	32 (89)	16 (84)	30 (76)	78 (82)

*Table reflects numbers (%) of women who agreed "some" or "very much" on a 4-point scale of agreement (not at all, some, very much, don't know).

Table 7.—Concerns About Mammography by Age*

Concern	40-49 N (%)	50-59 N (%)	60+ N (%)	Overall N (%)
I think it is going to hurt	13 (39)	8 (37)	8 (18)	29 (32)
I feel embarrassed about having a mammogram	10 (31)	7 (32)	6 (16)	23 (25)
I am worried that breast cancer will be found	19 (58)	12 (55)	15 (41)	47 (51)
I am concerned about getting too much radiation	17 (52)	7 (32)	9 (24)	33 (36)
I think this is a very good way to find breast cancer	29 (88)	21 (88)	27 (73)	77 (84)

*Table reflects numbers (%) of women who agreed "some" or "very much" on a 4-point scale of agreement (not at all, some, very much, don't know).

been able to determine their personal risk for breast cancer. There was a trend toward significance by ethnicity, such that Hawaiian women were more likely to believe they had a likelihood of contracting breast cancer ($X^2(1) = 2.6$, $p = .11$). While older women (60 and older) tended to believe that they were unlikely to get breast cancer (reported by 74% of the women) compared to the younger women (of whom 57% believed breast cancer unlikely), this difference was not statistically significant.

Barriers to mammography.—The women were asked to identify the most important reason why women do not get mammograms. The most frequent response was "fear of mammograms," named by 26 respondents. 16 respondents cited not thinking a mammogram is needed, 11 high cost, 7 that the physician did not recommend a mammogram, and 6 the fear that it would hurt. A number of other responses were suggested by smaller numbers of women, and a considerable number (N=15) could not offer a reason.

The women also asked about a number of specific concerns they might have about getting a mammogram. Tables 6 and 7 summarizes the women's responses as linked with ethnicity and age, respectively. All of the mammography concerns were endorsed by a number of women, with the fear that cancer might be detected on the mammogram the most prevalent across all groups. Overall, the respondents were quite positive about the usefulness of mammograms in detecting breast cancer, with 73% or more in all groups agreeing that they were a good way to detect breast cancer.

With respect to ethnicity, Hawaiian women were particularly likely to report worry that the mammogram could indicate cancer; two thirds of these women endorsed this concern. In contrast, the Hawaiian women were less concerned about the painfulness of the procedure or feeling embarrassed. With respect to age, it is noteworthy that the older women (those 60 years and older) reported the lowest levels of concern in every area about which they were asked. Although nearly three-quarters of these women endorsed the value of mammograms, this was the lowest percentage in any group.

Discussion

Limitations.—Several limitations to this study should be mentioned. The sample size is small, especially in subgroups, and limits the statistical power to detect differences. Only patients who could understand English and were at least somewhat literate were included in the study; however, numerous patients speaking other languages (most frequently, Samoan, Tongan, and Korean) attended this clinic, as well as illiterate individuals. The findings cannot be extrapolated to these groups. The data were gathered from one clinic at a particular time and may not be applicable to other settings. Finally, all data are based on self-reports, which are subject to biases due to social desirability, limitations in memory, and so on. Participants were encouraged to be completely candid, and the large numbers of "don't know" responses in almost every question imply that they were not highly concerned about self-presentation; however, the limitations of self-reports must be acknowledged.

Use of mammography.—In Hawaii, the Behavioral Risk Factor Surveillance Survey (BRFSS), which is conducted annually by the State Department of Health through a contract with the Centers for Disease Control and Prevention, provides a state-specific estimate of mammography use. Data in this survey are collected from a representative sample of the population through telephone interviews. The most recent data indicate that 82% of respondents 45 and older report ever having had a mammogram.[13] The self-reported rates of mammography use in this sample (72 % of participants had had at least one mammogram) are reasonably close to what has been reported for the state as a whole, although the women in this study represented a group which had significantly lower income than the state average and a slightly different age group (40 and above). Thus, it appears that in Hawaii, low-income is not necessarily as great a barrier to receiving a mammogram as has been reported elsewhere in the country;[5] this may result from the widespread availability of health care insurance coverage in the state.

Knowledge and attitudes about breast cancer and mammography.—Most women reported positive attitudes towards breast cancer treatment and mammograms. However, the generally low levels of belief that cancer in general can be prevented, as well as little understanding of breast cancer risk factors, indicate areas where health education efforts are needed. Such efforts need to identify both factors which are not linked with cancer as well as those that are, in order to countermand the frequently-stated belief that "everything causes cancer." The most frequent reason women offered for why they do not get mammograms—a general fear of the procedure —may stem largely from a more basic fear of cancer. The question about women's mammography-related concerns also indicated that many respondents harbored worries that a mammogram would detect cancer. In order to address this barrier, health care personnel need to stress that the vast majority of screening mammograms in asymptomatic women do not indicate cancer or any abnormalities.

Subgroup differences.—Despite the small sample size, several

interesting subgroup differences emerged. The responses of the Hawaiian women differed from those of the Caucasian women in a number of respects. For one, they were more distrustful of physicians. Their lower levels of adherence to mammography guidelines may be partially due to distrust with the standard Western health care system. This finding is consistent with another article recently reported in the *Hawaii Medical Journal*[14] and indicates that health care providers need to make special efforts to communicate with Native Hawaiian patients. Innovative strategies to reach Native Hawaiians are needed as well, such as the approach used by Waianae Coast Comprehensive Health Center's mammography and Pap test screening project. This community-based project utilized lay health educators, natural social networks, and procedures and materials that incorporated Hawaiian cultural values.[15] Hawaiian women in the present study were also less likely to believe that male partners would be supportive, implying that educational efforts may be needed for family members as well as for the women themselves.

The Hawaiian women were markedly more concerned about the possibility of being diagnosed with breast cancer than were the Caucasian women, even though current Hawaii incidence figures indicate higher breast cancer rates for Caucasians. The Hawaiian women's perceptions may stem from the many reports of significant health problems in the Native Hawaiian community, as well as the significantly higher breast cancer mortality experienced by Native Hawaiian women. Such concern can potentially have a positive effect, if the women become mobilized to adhere to healthy lifestyles and recommended preventive care. On the other hand, if women perceive that they are destined to become ill, they may give up attempting to adopt and maintain healthful behaviors. Health care providers and educators need to convey a message that balances valid concerns with realistic hopes and positive, achievable actions.

The older women presented, if anything, the opposite picture. Older women were more likely to believe that they did not need to be concerned about breast cancer at their age and that they were unlikely to be diagnosed with breast cancer during their lifetime. Other studies have also reported lower levels of perceived breast cancer risk in elderly women.[16-18] The older women were also less concerned about all aspects of mammography, including the possibility that cancer would be detected. Their lower levels of concern run directly counter to breast cancer incidence, which rises with age. This fact may get lost in mass media coverage of breast cancer, which often focuses on younger women in the public eye. These findings strongly suggest that efforts aimed at breast cancer education for older women are needed. Several programs designed to enhance breast screening in older women have been reported: strategies targeting individuals (e.g., telephone counseling and letters), the health care system (e.g., using a nurse practitioner to encourage mammography) and environmental barriers (e.g., reduced-price screening, mobile vans) have all been successful in increasing mammography utilization.[19] However, little research has been directed at older impoverished minority women like many of the participants in this study. These women are multiply disadvantaged and their needs warrant particular attention, especially since their numbers will increase in the future.

Implications

This study documented considerable need for breast cancer education and screening among attendees at an urban primary care clinic. It also indicated that screening programs must be sensitive to individual patient characteristics, such as ethnicity and age. The clinic attendees were interested and willing to participate in the study, and future activities could profitably utilize the clinic as a setting for health education.

Observations

For many low-income, minority women, such clinics may be their predominant and perhaps only contact with the health care system. A number of approaches have been used to promote screening in primary care settings; the most frequently-used interventions include physician reminder systems (e.g., chart tags, computerized reminders, checklists) and patient reminders (e.g., postcards, telephone calls).[20]

Although only a few studies to date have utilized social support and social network interventions,[19] such approaches hold considerable promise. The Waianae project mentioned earlier represents one such program.[15] Another example is the "Tell A Friend" program, in which women contacted their friends to encourage them to obtain a mammogram. This program was particularly effective among lower income participants.[21] The "Witness" program, based in Arkansas, recruits participants to cancer screening using community women from the target population who have obtained screening and can share their experience, rather than health care professionals. The similarity between the person providing the health education (the "Witness") and the target audience has proved successful in convincing minority, low-income women to obtain cancer screening.[22] Interventions using models such as these could be adapted to the clinic setting. They may be particularly appropriate for women like the participants in the present study, given the importance of social ties in Native Hawaiian and other cultures, as well as feelings of discomfort and alienation towards the modern Western health care system in many minority and low-income individuals.[14] Future researchers and program planners need to build on these ideas.

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A New, Standardized Approach to Fracture Risk Interpretation

Richard D. Wasnich MD

Screening for osteoporosis has been hampered by the absence of a standard approach to the interpretation of bone density and other risk factors. A consensus conference of international experts has now recommended a report which is based upon two concepts: (1) comparison of an individual's bone density to the mean value for 30 year old women, and (2) estimation of Remaining Lifetime Fracture Probability (RLFP), based upon current age and bone density, life expectancy, future bone loss, and other risk factors. This model is dynamic and can be perfected as new risk factors become established. It also allows for estimation of therapeutic impact, and thus improves and individualizes clinical decision making.

Despite the substantial body of evidence linking bone density to future fracture risk, few successful osteoporosis screening programs have been implemented. This can be attributed to two obstacles:

1. The dearth of treatment options
2. The absence of a standardized interpretation of bone density and fracture risk

With the availability of the bisphosphonate class of drugs, and the future potential of estrogen analogues, the first obstacle has been overcome. However, the second obstacle remains. A woman having spinal bone density measured in Honolulu might receive an entirely different report and interpretation if her hip bone density were measured in New York. There has been no consensus regarding which levels of bone density should be considered "treatment thresholds."

To address this important issue, a Consensus Conference of international experts convened in Chantilly, Virginia in April, 1994.[1] In order to understand the conclusions of the consensus panel, some background is helpful.

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Bone mass (or density) is clinically useful for one reason; it is a strong risk factor for osteoporotic fractures. It could also be argued that bone density measurements are clinically useless unless they influence the management of individual patients. The greatest, potential application of bone density is in patients *without* fractures, but who are *at risk* for fractures. Since such patients have no symptoms, and since there are usually no signs or other risk factors that can successfully identify individual patients who are at risk, there is a great clinical need for a practical way in which to identify such patients. Otherwise pharmacologic agents, including estrogen and especially anti-resorptive drugs, cannot be selectively prescribed for those with the greatest need.

If bone density measurements are to successfully fulfill this need, then they must indicate to the physician how to manage the individual patient. If the patient is a 50-year-old woman, for example, the question to be answered is: Should this patient receive pharmacologic agents, or is only life-style advice required?

Bone density is the only known risk factor which has the potential to answer this question. However a report stating that a patient has a *normal* spine BMD of 1.0 gm/cm^2 does not answer the referring physician's question. Thus there is a need to develop a consensus on how to provide a *useful, clinical* interpretation of bone mass measurements.

Etiologic Risk Factors Versus Clinical Risk Indicators

In order to understand the clinical use of bone density, it is helpful to discuss risk factors in general. Risk factors have two possible uses:

1. To search for disease etiology.
2. To clinically identify individuals at greatest risk of disease.

An example of an etiologic risk factor is smoking (for lung cancer). In addition to explaining etiology, there are obvious public health implications. On the other hand, smoking does not *diagnose* lung cancer, even though it may raise the clinical suspicion.

There are some risk factors that are sufficiently strong that they might be termed *clinical risk indicators*.[1] The relationship of blood pressure to cardiovascular and stroke risk is sufficiently strong that the blood pressure measurement itself becomes an indication for treatment. However, hypertension is not the only risk factor for stroke. Likewise, bone mass is not the only risk factor for fracture.

The problem is this: How can these fracture risk data be applied to clinical practice? It is certainly not intuitively apparent to the clinician what a lumbar spine bone density of 1.0 gm/cm^2 means for a 50-year-old patient. A variety of different interpretations have been employed in the past. Before discussing each of these, the consensus panel first discussed the requirements that an interpretation should fulfill:

1. It should convey the fact that peak bone mass is as relevant as is bone loss in determining lifetime fracture risk.

Table 1.—The influence of age, initial BMD, and treatment upon future fracture possiblility (NFP=number of fractures prevented; CFP=cost per fracture prevented).

Initial BMD	Initial Age	RLFP (untreated)	90% Reduction in Loss Rate NFP	CFP
510	50	0.46	0.38	17700
	80	0.07	0.03	62050
360	50	2.50	1.98	3400
	80	0.49	0.19	9650
290	50	5.00	3.75	1800
	80	1.11	0.39	4500

2. It should illustrate how the individual compares to healthy, young individuals of the same sex. For this purpose, the mean bone density of healthy, 30-year-old women is considered the standard of reference.
3. It should be intuitively apparent to both physician and patient.
4. It should provide an indication of absolute fracture risk.
5. It should estimate cumulative fracture risk over the patient's (estimated) remaining lifetime.
6. It should give the physician an objective basis upon which to make therapeutic decisions. It should address this question: "Will this patient benefit from pharmacologic treatment?"
7. It should also provide an estimate of therapeutic impact upon fracture probability.
8. It should be adaptable to include risk factors other than bone mass.
9. It should be sufficiently generic that various measurement techniques and sites can be employed.
10. Since there are data indicating that density measurements at various skeletal sites may contain independent predictive value for fractures, our interpretation should be able to incorporate all available information. Thus if two bone density measurements are available, both should be used, rather than arbitrarily discarding one value in favor of another.

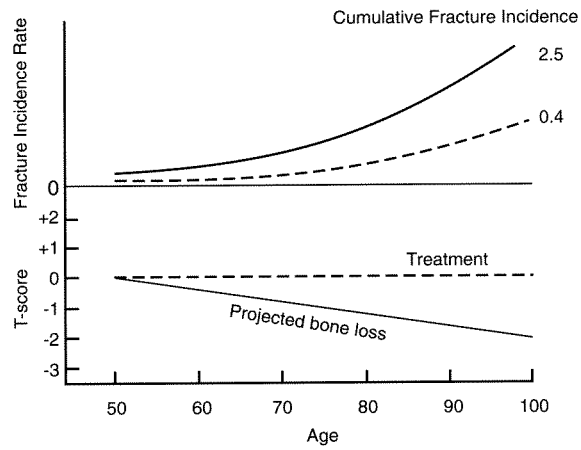
Based upon these criteria, the consensus panel agreed upon the following approach to fracture risk interpretation (Fig 1).

Based upon prior recommendations of the World Health Organization, bone density values between - 1.0 and -2.5SD are considered osteopenic, and bone density values more than -2.5SD are osteoporotic. If the patient also has a history of nonviolent fracture, she is classified as having *severe osteoporosis*. Although these classifications provide a useful cross-sectional description, they are insufficient for clinical decision making because they ignore age (and therefore future years of bone loss and risk exposure).

Therefore the consensus panel adopted the concept of Remaining Lifetime Fracture Probability (RLFP). Although the mathematical modeling involved is complex, the concept is simple, as illustrated in Fig 2. For purposes of discussion, assume that we are evaluating a 50-year-old female, (Pt. "A" in Fig. 2). Her current bone density is 0.95 SD below the mean for 30-year-olds; thus she has a *T-score* of -0.95. Based upon life tables, we estimate that her life expectancy is an additional 32 years. We will assume that, on average, she will lose bone density at the rate of 1.5% per year over 32 years; if serial bone density measurements are available, this figure can be appropriately adjusted for the individual.

Based upon data from published studies relating fracture rates to levels of bone mass/density, a fracture incidence rate can be assigned to each age and bone density value. For example, our 50-year-old patient with an initial heel value of 360 mg/cm^2 has a 0.5% probability of a fracture (at any skeletal site) during the next year.

Fig 1.—Each age and BMD level is associated with a fracture incidence rate; the cumulative total of these rates represents cumulative fracture incidence (Remaining Lifetime Fracture Probability).



Each subsequent year, this rate increases as bone density declines. RLFP is nothing more than the sum of all these rates over an estimated remaining lifetime of 32 years. Thus this patient has an estimated RLFP of 2.7, meaning that, on average, women like her will experience 2.7 fractures in their remaining lifetime. This number is, of course, associated with an error; some such individuals will have more, and some will have fewer, fractures. Figure 2 also illustrates why bone density alone is not sufficient to make clinical decisions. Patient B, who is 75 years old, has a T-score very similar to Patient A, at-1.1. According to WHO guidelines, she is *osteopenic,* whereas Patient A is *normal.* However Patient B has an RLFP of only 0.5 (because of her shorter life expectancy), and a treatment that stops bone loss would only lower her RLFP to 0.3. Patient A, on the other hand, has an RLFP of 2.7, which could be substantially lowered to 0.3 with treatment. Thus the "normal" patient will receive much more benefit from pharmacologic treatment than will the older, "osteopenic" patient.

Although many fracture risk factors appear to be mediated via bone mass, not all fracture risk factors are expressed, or mediated, via bone mass. Falls, previous fractures, and perhaps age are independently associated with fracture risk. Nevertheless, bone mass is the most *clinically* useful of these indicators, for several reasons. Although falls in the elderly have shown an association with fracture, independent of bone mass, most fractures still occur in patients with low bone mass. Also, the decision to preserve bone mass should occur at much earlier ages, when the tendency to fall is not yet apparent. Finally, preservation of bone mass is likely to prevent many fractures even if falls cannot be completely eliminated. Age has also been associated with fracture risk, but of course age itself is not modifiable. In any case, age is probably serving as a surrogate for some other age-related factor.

Bone density is clinically useful because it represents a composite and cumulative index of many other risk factors, both past and present, including both genetic and life-style influences. Bone mass frequently is a measurable expression of unknown, or unmeasurable, risk factors. For example, adolescent nutrition and physical activity may exert a strong influence upon attainment of peak bone mass, but it may be difficult, or impossible, to retrospectively estimate in a 50-year-old patient.

It is not the purpose of this paper to review the data relating bone mass to fracture risk. A number of studies have now shown that

fracture risk increases progressively, and approximately exponentially, with decreasing levels of bone mass or density.[3-5] Thus women with bone mass equal to the mean, one standard deviation (SD) below the mean, and two SDs below the mean, have two, four, and eight times greater risk, as compared to women with bone mass one SD above the mean.

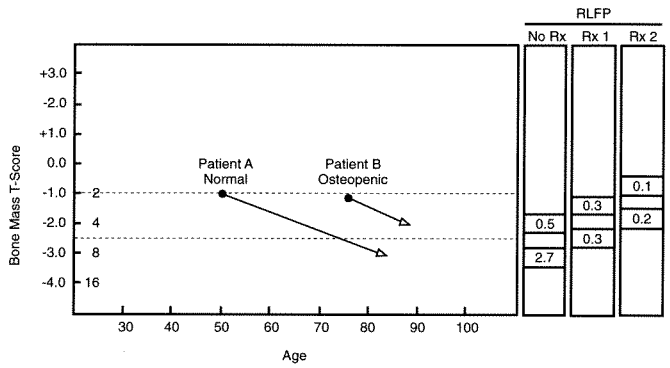
RLFP thus addresses the need for a *cumulative* estimate of *absolute* fracture risk. It can also be applied to any bone density measurement for which fracture incidence data are available. However, the real advantage of the RLFP concept is the ability to estimate the impact of therapeutic intervention. Although knowing that this patient might experience fractures is more useful than knowing that her BMD is *normal*, it still does not tell the clinician what he or she most needs to know. Namely, can this risk be significantly lowered if pharmacologic treatment is prescribed? For example, if an anti-resorptive drug is prescribed, what is the impact upon fracture probability?

For the 50-year-old, an hypothetical, anti-resorptive drug that stops bone loss would reduce her RLFP from 2.7 to 0.3 (potentially preventing two fractures). However the 75-year-old, even if she achieves the same prevention of bone loss, only reduces her RLFP from 0.5 to 0.3 (preventing only 0.2 fractures). Because she has fewer years of future bone loss and risk exposure, there is less opportunity to reduce bone loss and fracture risk. Therefore, the older women may receive greater benefit from non-pharmacologic measures, such as calcium and Vitamin D supplementation, physical activity regimens, and possibly measures to reduce the risk of falls. The new treatments now becoming available are considerably more efficacious. The average patient might gain 8-10% bone density in the first three years of treatment, which translates into a 50% reduction in fracture risk. Thus treatment of older patients, like the 75 year-old mentioned above, becomes cost-effective, particularly if the treatment has a good safety profile.

A final, potential use of the RLFP model is to estimate cost-effectiveness of various treatment programs, shown in Table 1. If the cost of estrogen replacement is $225 per year, and treatment continues indefinitely, *the cost per fracture-prevented* can be estimated. Surprisingly, these estimates suggest that pharmacologic treatments to reduce bone loss may be cost-effective even for women in their 70's, particularly for those at high fracture risk. Also new treatments that are either more potent, or which have a longer duration of action, could substantially improve the cost-effectiveness of treating the older woman. Although the reported bone mass increases from anti-resorptive agents typically plateau after 2-3 years of treatment, women who maintain such an increase might have a much greater therapeutic benefit. For example, if the 50-year-old woman described above, with an initial bone density of 360 mg/cm^2 and an RLFP of 2.7, experiences a 8% gain in bone density which is subsequently maintained, it could translate into a new RLFP of 0.2.

In conclusion, a standardized approach to bone density and fracture risk interpretation is now available. Its use is expected to facilitate improved clinical decision-making, and to allow for individualized decisions for each patient.

Fig 2.—Standardized approach to bone density and fracture risk interpretation recommended by the Consensus Panel (1). Two patients with similar bone density, but different fracture probabilities. The y-axis compares the measured value to the average for 30 year old women. The arrow extends to mean life expectancy, and shows expected future bone loss. The younger patient has more future bone loss and risk exposure than the older patient, and may therefore receive greater therapeutic benefit. Treatment I assumes complete prevention of bone loss. Treatment 2 assumes a 10% increase in bone density.



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Council Highlights

July 13, 1996
Roger Kimura MD, Secretary

The meeting was called to order by Dr Carl Lehman, President at 1:00 pm.

Those present were J. Spangler, President-elect, R. Kimura, Secretary; L. Howard, Treasurer; AMA Delegate: C. Kam AMA Alternate Delegate: A. Kunimoto; Speaker: H.K.W. Chinn; County Presidents: E. Bade, Hawaii; M. Joshi, Maui; T. Crane, Kauai; Councilors: T. Au, D. Canete, P. Chinn, W. Dang, Jr., P. Demare, M. Shirasu, K. Thorburn, W. Young, J. Betwee, P. Kim, C. Kadooka, A. Bairos; Past Presidents: W. Chang, A. Don, J. McDonnell; Medical Student Section: J. Ing, Young Physician Section: C. Goto; HMA Alliance Members: C. Gutteling, C. Lehman, V. Lau, S. Robinson, and J. Chuang.

HMA Staff: J. Won, N. Jones, B. Kendro, J. Asato, and L. Tong, Recording Secretary, A. Rogness.

Minutes: The minutes of the June 7, 1996 meeting were approved as circulated.

- Dr Lehman reported: 1) He attended the AMA Annual meeting which was well attended and very informative. Dr Holschuh did a wonderful job presenting HMA's resolutions. There were over 195 resolutions and 85 reports. The HMA officers met with AMA's Strategic Planner, Bruce Balfe on two occasions. Mr. Balfe will come to Hawaii in August and meet with a group of physicians from HMA to help analyze and assist HMA on its short-term and long-term plans; 2) the Gang of Six met this week and discussed legislative issues; 3) he is Chair of the Medical-Legal Committee on the Hawaii Health Council who is considering the presentation of a two-hour course on alternative dispute resolution in health care sometime in November; 4) he attended the HPPA meeting July 12; Dr Don reported that since HMA will not be able to fund the project, PMAG will also not fund it. There is still interest from the members and they are looking at the resources that HMA has (Peer Review, etc.) currently in order to set up an MSO with minimal funding.
- Mrs Gutteling of the HMA Alliance reported that they cherish the social functions they have been involved in with the HMA and thanked Dr Lehman for his support. The Alliance has made an impact through health care and advocacy programs. The Alliance will meet with the HMA Executive Committee to discuss some concerns they have about social functions and their role in the HMA. Mrs Lehman attended the AMA meeting in Chicago as an Alliance Delegate and stated it was a very positive meeting. Suggestions were given on increasing membership and having a Domestic Abuse shelter shower. Another suggestion was to sell bags or boxes promoting antiviolence at shopping malls, etc. Mrs. Lehman thanked the HMA for the opportunity to attend the AMA meeting.

For Action

The following actions were taken by the Council—

- Approved the Finance and Executive Committee recommendations for allocating funds as follows:

$5000 to meet the request of the HCMS for a reduction in its contract for services with HMA.

$3,500 to fund the original 1996 budget allotment for the HMA Alliance.

$5,000 be restored to the salaries budget line item for a receptionist.

$2,500 be added to the Retirement budget line item.

$4,000 be restored to the meetings budget item for meals with rules for the meals.

- Approved Dr Walter Shim's request to attend the next Council meeting to discuss some ideas that would be beneficial to the HMA and the Symphony. Council asked the HCMS Membership Committee to consider a recommendation for honorary membership for Dr Wong.
- Asked the Executive Committee to look into the focus of the HMSA Managed Care Conference.
- Asked Drs Andrew Don and Frederick C. Holschuh to remain on the QUEST Advisory Board as HMA's representatives.
- Approved the Annual Meeting Committee recommendation to hold the 1997 Annual meeting at the Hilton Waikoloa Village, Island of Hawaii from October 23-26/97.
- Approved the Memberships Benefits Committee recommendations of the FOLI Program and UNUM Long Term Care Insurance Program as benefits for HMA members. Requested the Benefits Committee to obtain more information on the Physician Fund benefit as follows: 1) contact other insurance companies in various states who have participated in this program and find out how it is working; 2) look at HMA's liability, if any.
- Directed a letter be sent to Dr Chris Gulbrandsen, Dean, Medical School, requesting support for resident's coverage to allow attendance at the HMA Annual Meeting.

Component Society Reports

Honolulu.—Dr W. Dang, Jr. reported that the HCMS Nominating Committee is seeking names for the elections in October; will revise the bylaws; and has adopted a revised budget similar to that of the HMA.

West Hawaii.—No report.

Hawaii.—Dr Bade reported that their County had regular monthly meetings. The Alliance has been promoting the children's books by Dr Matsuura to raise funds for the AMA-ERF.

Maui.—Dr Joshi reported that Maui County will be having meetings on health care fraud with speaker Kurt Butler and on the Tamoxifin Studies.

Kauai.—Dr Crane reported that their County had a meeting on the West side of the island in an attempt to recruit more members from that area.

For Information

CIVS.—Mr Won reported that the HMA should be making appointments with the hospitals next week to market the CIVS.

Tobacco Task Force.—The committee will be contacting Commander Todd of Tripler to assist in curbing the sale of cigarrettes to the military who resell them at a higher rates to the public. The committee is considering legislation which will require people who look under 30 to show an I.D. when buying cigarettes the same as for alcohol purchases.

HMA/AMA Mutual Help Discussion.—David Cloud of the AMA met with the HMA Executive Committee regarding developing a mutual working relationship between the AMA and HMA. The AMA can help state associations with staff support/their expertise and state associations can help the AMA with things state associations are better at doing.

AMA Fraud & Abuse Win.—Dr Lehman reported that the language of HR 3103 has been changed and that physicians would have to be knowingly and intentionally abusing the system in order for it to be a crime.

Council Meetings.—Council meetings will continue to be held on Fridays until the Annual Meeting. The next meeting is scheduled for August 2 and the following meeting will be held on September 13 (budget session)

The meeting was adjourned at 3:20 p.m.

News and Notes Henry N. Yokoyama MD

Life in These Parts

Genetic Cause for Hip Problems

A Five year UH study of hip replacement rates in Hawaii reveals that osteoporosis of hips is genetic with Caucasians highest and Japanese lowest.

Caucasians	12.8
Chinese	5.1
Koreans	4.2
Filipinos	2.7
Afro-Americans	2.4
Hispanics	2.2
Japanese	1.9

The study was begun by **Calvin Oishi, Franklin** Hoagland (UCSF orthopedics chief) and coauthored by **Philip Ross and Larry Gordon.** Included in the study were 754 patients (or approximately 90% of total hips in Hawaii) between 1985 and 1989.

Assisted Suicide

St. Francis Medical Center recently sponsored an International Bioethics Conference. **Alexander Capron** co-director of USC's Pacific Center for Health Policy and Ethics, feels that physicians continue treatment because of "an enormous and totally goundless fear of lawsuits." **Albert Jansen**, chairman Dept. of Medical History and Ethics, University of Washington Medical School said, "The issue is 2,000 years old. Today the point is to give people the right, based on autonomy and freedom, to end their own lives." **Christine Mitchell** (leading nurse in bioethics) with Children's Hospital and Harvard Medical School said, "Euthanasia is being reexamined because prolonged life has resulted in more suffering and undignified death."

S.Y. Tan, chairman of St. Francis hospital's Ethics committee reported that 2,500 Hawaii physicians were surveyed on euthanasia. "The first 500 responses indicated few physicians favored assisted suicide. The majority would respect wishes to withdraw treatment and allow natural death. A minority would go further and approve physician involvement. Even a smaller percent would do it themselves." S.Y. Tan says, "The medical profession sometimes ignores patients' wishes regarding treatment at the end of their lives. The unwillingness to listen comes from equating death with clinical death so they treat patients at all costs. It's war against disease and disease something to defeat and to conquer."

Elected, Appointed and Honored

Ruth Matsuura, Hilo pediatrician for more than 22 years was recently awarded the Hawaii County Medical Society Physician of the Year Award. Ruth is most noted as an effective and articulate advocate for prevention of child abuse.

Cardiologist **Danelo Canete** was appointed in January as the new medical director of the Heart Center at St. Francis Medical Center.

Physician Moves

Nephrologist-Internist **Hesun Hau** joined the partnership of Richard Shim, Aaron Nada and David Ono with offices at 1520 Liliha Street, Suite 302, and branch offices at Kailua Professional Bldg. I, Pali Momi Medical Center, Suite 420, St. Francis Medical Center-West on the Big Island, Kauai and Maui.

General surgeon **Francis Oda** retired as of January 1. **Benjamin Tom and Mari Nakashizuka** assumed his practice.

General surgeon **Gene Robinson** opened his offices at Kapiolani Medical Center POB, Suite 904 and KMC at Pali Momi, Suite 140.

Cardiac surgeon **Richard Mamiya** retired from his surgical practice to devote full time to his new endeavor.

Cardiologist **Kazuo Misumi** joined the Cardiology Associates Inc. (Masahori Mori, William Dang Jr., and Samuel Dacanay) with offices at KMC Pali Momi, Suite 200, Queen's POB II, Suite 409, Wahiawa General hospital, Kilani Clinic and St. Francis-West Medical Plaza.

Opthalmologist **Anthony Martyak** joined Straub Quality Care and will be available at Straub's Pali Momi, Kailua and Hawaii Kai offices. Pediatrician **Richard Ho** retired effective March 1 and **Darrell Natori** assumed his practice at 1380 Lusitana Street, Suite 501.

Pediatric surgeon **Y.C. Huang** opened his office at 615 Piikoi St., Ph. No. 4 and St. Francis West Medical Bldg., Suite 208.

Dermatologist **Randall Nita** closed his office at Kuakini Medical Plaza and transferred his records to Jan Mitsunaga at Queens POB II.

Kristi Adachi, otolaryngologist and head and neck surgeon opened her office at Kapiolani Medical Center, Pali Momi Medical Office, Suite 482.

Neurosurgeon **William Won** retired effective April 30. His medical records will be transferred to Maxwell Urata at Kuakini Medical Plaza and to William Obana at Queens POB I.

Conference Notes

Controlling Lipids in Type II

Lecture by VP Daniel Rader from the University of Pennsylvania Medical School, at QMC-UH, February 16, 1996.

Background

Scandinavian survival study
- 42% less CAD mortality
- 32% less total mortality

West of Scotland Coronary Prevention Study (Provastatin 40 mg/d in patients with elevated cholesterol and no MI):
- 36% less non-fatal MI
- No rise in non-cardiovascular deaths
- 22% less total mortality

General Discussion

- Lipid lowering changes the plaque itself i.e. treatment modifies the lesion.
- Diabetics have macrovascular lesions because of elevated chylomicrons, LDL, triglyceride and low HDL.

* *Metformin*
- Synergistic with sulfonureas
- Lowers triglyceride
- Side effects: diarrhea, and lactic acidosis
- Avoid use in serum creatinine over 1.4 and liver dysfunction.

Treatment based on LDL levels

	Level	Goal
c̄ CHD	≥ 130	< 100
c̄ 2 risk factors	≥ 190	< 160

Diabetic Dyslipidemia
- Bile Acids—raise Triglyceride
- Niacin—not good for DM esp Type II
- "Statins"—first line therapy for Type II
  - Mevacor
  - * Provastatin (**drugs of choice*)
  - * Zocor (Simvastatin)
  - Les Col

Triglyceride Levels
- Normal—less than 200
- Moderately high—200 to 400
- High—400 to 1000
- Very High—over 1000

Treatment of Triglyceridemia
- Diet and physical activity
- Drug Therapy
  - Fibrous Acid—
  - Lopid and Fenofibrate (available in Europe)
  - Nicotinic Acid
  - Fish Oils
  - Metformin esp in NIDDM

* Lopid (Gemfibrozil)
- Stimulates hydrolysis of triglycerides but raises LDL and total cholesterol. Therefore combination with "Statins" indicated.

Combination Therapy
- Lopid with Mevacor

May raise CPK (myopathy); severe myopathy e.g. CPK over 10,000 can cause acute renal failure.

* Incidence of myopathy with Mevacor
Lopid with Mevacor 5%, Niacin with Mevacor 2% and Cyclosporin with Mevacor 30%.
- Lopid with Provastatin

No cases of myopathy, low incidence adverse effects, lowers total cholesterol, lowers LDL, lovers triglyceride, and raises HDL.

* Niacin—How to start Niacin
100mg tid (q 2 to 3 days); 200 mg tid; 500 mg tid (after a month); 1000 mg tid. No control studies available; No long term hepatotoxicity

* Estrogen—First line therapy for postmenopausal women with hypercholesterolemia. Avoid in women with triglycerides over 500 (ERT raises triglycerides)

* Fish Oils)1 cap = 1 gm) Dose 3 gms tid (9 gms/d)

➤ *Continued from Page 135*

counterchecks, systems monitor and backup, and automatic alerts will go far in reducing systematic errors in the hospital and clinics. But most importantly, to learn from our mistakes, we need to identify and tabulate them. This will not happen in an atmosphere of fear; the reporting method must therefore educate, not punish; restore, not denigrate. Our fault-based malpractice system must be replaced by a no-fault model which focuses on just compensation and improvement in healthcare standards. And yes, the profession should encourage its senior members and its clinical teachers to share their adverse experiences with their junior colleagues. It is an effective way of saying: We all make mistakes—let's learn from them to benefit our patients.

I now approach the end of my presentation, and I would like to lead you out of the unsettling darkness of physician error into the warm sunshine of Medicine's healing mission. Notwithstanding our human foibles, and in the face of the current assault of bottom-line healthcare, let us pause to remember:

That our is a profession that saves lives, not, say, an industry that profits from creating weapons of war and destruction.

That doctors consistently improve health, unlike too many politicians who falsely promise to improve society, and

That we always comfort those we cannot cure, even as some members of that other learned profession confer undeserved confor through mocked justice.

Welcome to the noble world of doctoring, class of 1996. May I wish you and your patients good communication and good health.

Reference

1. "Should Doctors Help End Lives?" —Letters and Commentary. The Honolulu Star-Bulletin, Sunday, December 17, 1995, pg B-3.

Classified Notices

To place a classified notice:

HMA members.—Please send a signed and typewritten ad to the HMA office. As a benefit of membership, HMA members may place a complimentary one-time classified ad in *HMJ* as space is available.

Nonmembers.—Please call 536-7702 for a nonmember form. Rates are $1.50 a word with a minimum of 20 words or $30. Not commissionable. Payment must accompany written order.

Services

The Pacific Center for Dermatology and Phototherapy is now receiving referrals for dermatology consultations and/or phototherapy. Lois Y. Matsuoka, MD., FAAD, FACP, (former faculty mem., Jefferson Med. College.) Ala Moana bldg., Suite 911, 1441 Kapiolani Blvd., Honolulu, HI 96814. (808) 941-5506.

For Sale

Auto For Sale.—Acura NSX '92 for sale, A/C, Red/Black, automatic, one owner, 17,000 mi, asking price $43,000, Call 545-1607.

For Sale.—1983 Nihon Kohden EEG machine. Model 4217, Asking price $1,000. Call Adrienne at 537-2211 ext. 105.

Position Available

Position Available.—Hawaii-licensed physician for Blood Bank on Saturdays, 7 am to 2 pm. Must be on-site to respond to potential allergic reactions or emergencies, answer medical questions. Insurance provided. Call Dr Julia Frohlich, 845-9966.

Office Space

Office Space.—Exceptional practice opportunity in beautifully designed new medical office near Queens. Rates as low as $500 per month/$10.00 per hour. Free patient parking. Please call Deborah at 532-0517 for more information.

Office Space.—Ala Moana Bldg, Oral Surgery office, Adaptable for MD, 680 sq ft. Three treatment rooms/recovery, opposite lab/x-ray, any reasonable cash offer. Call 949-8187.

Kuakini Medical Plaza.—Office for sale. 1078 sq ft; leasehold condominium, eight rooms including two offices, two exam rooms, bathroom/shower, built-in cabinets, shelves, and work desks. Corner unit with panoramic mountain view. Phone: (808) 536-7809.

The Weathervane

Outrageous.

Kusserow lives! In an unbelievable criminal indictment, Hilo ophthalmologist, *John Zelko MD* is being prosecuted by the state Attorney General's office for "criminal solicitation to commit first degree promotion of a harmful drug." The actual alleged crime—writing a prescription for *Fastin*, a schedule four diet medication. In these days when pot, ice, PCP, heroin, and designer drugs are marketed casually on the streets of Chinatown, Waikiki and Lahaina, one can only wonder what malicious line of thinking produced this egregious and destructive action against a 75-year-old physician who has given over thirty years of medical practice to the people of Hilo. This case smells remarkably like the work done by *Richard Kusserow* some years ago when he drove at least one doctor to suicide with his malicious and erroneous accusations of fraud against innocent doctors. Is this sort of desperate act necessary in order to justify the existence of a drug enforcement agency? What gives here? Is it any wonder that physicians become paranoid?

Politicians don't break agreements, they just make a new set of promises.

Laws which require health plans to allow into their networks any providers willing to accept the plans, terms and payment rates are called "any willing provider" laws. In 1995, Arkansas enacted a broad AWP law, which was supported by all provider organizations in the state. However, similar bills were defeated in Colorado, Florida, Georgia, Hawaii, Louisiana, Mississippi, Nevada, Rhode Island, Tennessee, Utah, Virginia and West Virginia. It is hardly likely we will get such legislation by the big bullies at HMSA and Kaiser that control medical expenditures in our little state.

Everything put together sooner or later falls apart.

In response to the Rand Report that concluded that a large surplus of eye care providers exists, the Association of University Professors of Ophthalmology (AUPO) recommended that medical schools cut the number of ophthalmic residencies from 454 to just 200—a huge 56% reduction. If this recommendation and similar ones for some other specialties should come about, the next generation of physicians will obviously be dominated by generalists. The times they are a-changin'.

The second half of the 20th century is a complete flop.

The degree of ignorance out there in our "sophisticated" culture is mind boggling. According to a recent Harris poll, 44% believe that optometrists are MDs, 35% believe that psychologists are MDs, 30% think that chiropractors are MDs, and a whopping 63% call podiatrists MDs. This issue of ignorance must be addressed through our AMA, state and medical specialty associations. When respondents were informed as to the true definition of MD, 97% did not want optometrists to perform laser surgery on their eyes. Is it any wonder that we have perverse laws which threaten quality health care, when one recognizes that many of these same people are elected to public office?

Faith is that quality which enables us to believe that what we are doing is useful.

The June meeting of the AMA House of Delegates dealt with numerous resolutions regarding the use of the excimer and other lasers by nonmedical practitioners. The frightening Idaho situation in which the Board of Optometry has decided to redefine the practice of medicine, has precipitated a lawsuit joining together the AAO, the Idaho Medical Association and the Idaho Society of Ophthalmology. Additionally, the AMA House came out strongly against renegade Dr Jack Kevorkian and the concept of doctor-assisted-suicide. Again, stress was made upon the difference between removal of life support systems, and actively helping a patient to kill him/herself.

The need of exercise is a modern superstition, invented by people who eat too much and have nothing to think about.

According to a recent energy expenditure study conducted at the University of Wisconsin, comparing stair stepper, treadmill, rowing machine, cycling ergometer, and cross-country skiing simulator, the treadmill proved to be the optimal indoor exercise machine for enhancing energy expenditure.

Science is truth: don't be misled by facts.

In these days of world travel, think strongly about your air carrier and the places you plan to visit. The FAA has a list of those countries that do not meet international aviation safety standards. Substandard means that the country's air traffic control system, supply and maintenance of emergency equipment, and aircraft inspection do not meet safety guidelines. Therefore, fly with caution to Belize, Dominican Republic, Gambia, Ghana, Haiti, Honduras, Nicaragua, Paraguay, Uruguay, Swaziland, Zimbabwe, and Zaire. Oh yes, have a nice trip.

Be frank and explicit with your attorney, it's his role to confuse the issue afterwards.

Cleveland orthopedist *Harry Figgie III MD*, has proved once again that altering records after the fact can cause great trouble and expense. At the trial, the doctor admitted that he had *amended* the record because it "did not reflect accurately the discussion." Not only did the doctor lose the malpractice case with damages at $3.25 million, but the Ohio Supreme Court set a punitive award at $1 million. Doctors are told repeatedly that if you alter the record, and you're caught (as will likely happen), you will lose the jury and the trial. If you feel you must add or correct the chart later, draw a line neatly through the erroneous part so the original are legible, then initial and date the change.

Addenda

- The *Sharper Image* now has a seat cushion which will stay warm for up to eight hours after five minutes in the microwave, named *Lava Buns*.
- Bob Dole is Gerald Ford without the pizazz.