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Editors’ Comments

Tom Janisse, MD, Editor-in-Chief
Promoting Physical Activity for Senior HMO Members

Last October, the National Institutes of Health (NIH) Institute on Aging and the National Health Care Financing Administration (HCFA) requested that Kaiser Permanente Northwest (KPNW) and KP Colorado participate with other health care experts from around the country with innovative managed care programs in a conference entitled, “How Managed Health Care Can Help Older Persons Live Well With Chronic Conditions.” John Scott, MD, KP Colorado, presented “Cooperative Care Clinics,” and representing KPNW, I presented the “HealthClub & SilverSneakers” program.

Brief History

In October 1996, KPNW contracted with Healthcare Dimensions, Inc (Arizona) to provide an exercise and fitness health club program for KP Senior Advantage Medicare members. The Health Plan has again approved the program for 1999. This no-charge, exercise and fitness program was approved primarily to enhance the attractiveness of KP to seniors at a time when Medicare premiums were poised to change in the market. KP Colorado also adopted this program in 1997, as did Group Health Cooperative in Seattle in October, 1998.

The program consists of free health club membership in any of 13 health clubs in the Northwest. At each site, a fitness coordinator leads a one hour “SilverSneakers” exercise program three times a week. Participants exercise to music by the Beach Boys, Fleetwood Mac, and Carly Simon, while sitting in a chair and standing behind it. At several points during the hour, their exercise steps approach line dancing. People attend, in part, because they meet others there and exercise in a group. An average-size class includes 40 seniors.

KPNW has 33,000 Medicare-eligible members with 7,000 enrolling in the exercise program. Oregon and national enrollees are approximately the same demographically, having 55% women and 45% men, with an average age of 72 years.

Exercise and Health

Physical inactivity is a major cause of premature mortality among Americans. Despite this fact, there is little evidence to support the effectiveness of provider-based interventions aimed at reducing inactivity. People who engage in regular aerobic activity have substantially better health.1,2 Further, people with lower health risks have less lifetime disability at any given age.3 HMOs have sought to reduce health care costs while maintaining or improving quality. However, in a 1996 study, the elderly and poor chronically ill patients had worse physical health outcomes in HMOs than in fee-for-service systems.4 Exercise programs can enhance health. If the program promotes social activity, this could be an added benefit, perhaps interdependent with exercise in producing enhanced physical and emotional well-being. It has been shown that socially active men were two to three times less likely to die within nine to 12 years than those of a similar age who were isolated. The risk for socially isolated women was one and a half to two times as great. Daily contact with people may help to prolong life5 and reduce health care needs.6 Exercise can also create antidepressive effects among older adults.7

Member Testimonials

While we await studies to demonstrate significant outcomes, members that participate have offered enthusiastic comments and personal experience of improved health. Several comments are cited so you can “hear” their voices. Of note, several describe improvement in symptoms that often require medical treatment. Thus, exercise benefits can compliment clinician treatment plans.

• “We, the undersigned, would like to express our appreciation to Kaiser Permanente for making this program available to us. We feel we have had good results healthwise and hope that the classes will be continued for additional benefits.” (11 signatures)
• “I have lost 15 pounds without making any change in eating habits. For some reason, a bad case of heartburn and leg cramps have disappeared.”
• “After the first year on this program, my cholesterol and blood pressure have gone down 20 points. Surely this is the best medicine that Kaiser Permanente could prescribe for any of its patients.”
• “In just one month, my triglycerides lowered considerably; also cholesterol and glucose were better. I like the increased sense of well-being.”
• “My arthritis is 100% better. This program is very good for all people, and everyone should take advantage of these classes.”
• “I feel so much better; I don’t take my pain medication anymore, and now I can work in my garden again. God bless you Kaiser Permanente.”
• “I stopped taking my pills for my back pain two weeks ago.”
• “I had a mild stroke four years ago. These classes have helped me with my coordination and strength.”
"My posture has improved; I can raise my arm above my head, and my balance also improved."

"I chipped my uppermost vertebrae years ago and couldn't move my head comfortably left, right, or back. Since going regularly to the SilverSneakers program, I can move my head comfortably. God bless the program and the instructors."

"Our general health has greatly improved, as evidenced by our ability to move better, sleep better, and generally enjoy better mental health. Alan has had problems with vertigo, and he now finds it much easier to maintain his balance. Your medical staff will not be seeing much of us healthy members."

"To the person who thought up this SilverSneakers idea. This is the best thing that KP has done for me since I joined."

"My patients love this program, and they are doing better medically. It is a great program we have added."

"I'm surprised how poor my fitness was."

"I have never felt better. I feel more fit and healthier and look forward to every session."

"I need this class as discipline."

"I'm having fun."

Center for Health Research Study

In January 1999, Mary Durham, PhD, KP’s Director, Center for Health Research, in collaboration with Ed Wagner, MD, of Group Health Cooperative, will evaluate the effectiveness of the HealthClub program. Their study is funded from the Centers for Disease Control and Prevention. The primary question is: “Do registrants report higher levels of physical activity, better health status, and fewer outpatient visits 24 months after registering than those who did not register?” Secondary questions address yearly incidence and prevalence of registrants and users, reduction in hospital days and lower health care costs, and the distance between the member's residence and the nearest health club. They argue that the way to determine whether seniors would benefit from exercise is not to compare those who choose it to those who don’t; rather, it is to compare outcomes for “exposed” and “unexposed” people, all of whom would have chosen a health club benefit if it had been offered. The study design is a nonrandomized controlled trial with an intent-to-treat design (that is, members will remain in the study whether or not they use the health clubs). The health club benefit is the intervention. The primary outcomes for this full evaluation include physical activity, health status (SF-36), and outpatient utilization. The secondary outcomes include variables related to use of the health club benefit (for example, incidence and prevalence of registration, prevalence of health club use) as well as hospital use and total health care costs.

Conclusion

Clinicians are now thinking beyond just diagnosing and treating conditions in their patients. They are considering how to motivate behavior change. Group activity can be a powerful tool to motivate change. So can having fun.

References

2. Ware JE Jr, Bayliss MS, Rogers WH, Kosinski M, Tarlov AR. Differences in 4-year health outcomes for elderly and poor, chronically ill patients treated in HMO and fee-for-service systems: results from the Medical Outcomes Study. JAMA 1996;276:1039-47.
Clinical Contributions
Arthur L. Klatsky, MD, Associate Editor

Alternative Medicine and Other Matters

Alternative Medicine is definitely a hot topic these days with prominent articles in lay magazines, newspapers, devotion of an entire issue of JAMA, discussion on television/radio, and more. Philip J. Tuso, MD's article in this issue, "The Herbal Medicine Pharmacy: What Kaiser Permanente Providers Need to Know," presents some material which is "alternative," although there is much in herbal therapy which is evidence-based and more that is on the borderline of such. Dr. Tuso points out the obvious need for clinicians to increase their knowledge about this area, including the risks and hazards of unproven or partially proven treatments. Appropriately, he clearly states that his article represents his own opinions. One suspects that, whether articulated or not, all clinicians have opinions—perhaps often highly subjective—about this topic.

There may be a lesson in the fact that "alternative medicine" is difficult to define and, thus, has so many synonyms. Since the words we use are important, it is appropriate to realize that some definitions and terms used in this controversial area carry implicit, emotionally charged overtones. Most of what we practice is variously called: traditional, conventional, official, standard, orthodox, mainstream, regular, Western, allopathic, scientific, evidence-based, or modern. Some synonyms for "alternative" are unconventional, complementary, unorthodox, naturopathic, irregular, unscientific, and not evidence-based.

One major problem in formulating these categorizations is the fact that the boundary is not clear; thus no term is fully satisfactory. It is easy to find instances of this fuzzy boundary in cardiology, this writer's own specialty. An excellent example is the role of antioxidant supplements in prevention of atherosclerotic vascular disease. In 1999, Vitamin E is probably "mainstream" therapy, while ubiquinone (coenzyme Q10) remains "alternative." Q10 could, of course, become "mainstream" in 2000 or 2001. Another cardiology example of therapeutic programs which straddle the "mainstream-alternative" dichotomy is the Ornish regime. This includes a severe, fat-restricted diet, for which there is solid evidence of benefit in prevention (and, possibly, reduction) of atherosclerosis. It also includes some components, such as meditation, yoga, and group psychotherapy, which many would still consider "alternative" for coronary disease care. Finally, as an example of a still widely used, but almost surely ineffective (and far from innocuous) "alternative" cardiologic "therapy," one could cite chelation therapy.

Another of this issue's articles, Vincent Felitti, MD's "Hemochromatosis: A Common, Rarely Diagnosed Disease," has also received recent prominent lay media attention. Newsweek (Nov. 16, 1998: p. 88), published an article entitled "The Iron Albatross," with, as a subheadline, "Never heard of hemochromatosis? Knowing something about it could save your life." In the article, an expert is quoted as calling the condition "the most unrecognized problem in American Medicine." To place a personal face on the disease, Dr. Felitti's authoritative review includes a personal account of the ravages of the disease by Graydon Funke, MD, a retired Kaiser Permanente (KP) physician. We are fortunate to have an accompanying Guest Editorial by David Baer, MD, another KP expert. Dr. Baer deals primarily with the issue of routine screening for the condition, a subject of his own research and of importance for Permanente Medicine.

We have a Perspective piece, with a Commentary by Paul Smith, MD, a KP Oakland surgeon. The Commentary is based on a 1944 (Vol. II: 1-11) Permanente Foundation Medical Bulletin article entitled "Perforated Peptic Ulcer," by Leo D. Nannini, MD, a surgeon who left KP practice. The past 55 years have seen a revolution in knowledge about etiology and medical treatment of peptic ulcer disease, with lesser changes in surgical management. Dr. Smith gives us a concise summary of the current status of his topic.

This issue also includes a brief report of a one-person clinical study by Robert Baker, MD, entitled "Incidence of Atopic Dermatitis and Eczema by Ethnic Group Seen Within a General Practice Clinic." Ethnic differences in disease risk have importance as guides for screening and pinpointing areas of needed public health efforts and, often, as clues leading to insight about pathogenesis of disease. As has been said before in this column, we hope to see more such brief clinical reports from KP physicians.
External Affairs
Scott Rasgon, MD, Associate Editor

In this issue’s External Affairs section, we take a glimpse at the history of Kaiser Permanente (KP). We are featuring three editorials about KP from 1952 and 1953, and it is striking how these same editorials—from the New England Journal of Medicine, and California Medicine—could have been written today. Some similar themes from these editorials are echoed by experts inside KP, and are included in our roundtable discussion about our current public image. Also, in keeping with our historical “look back,” M. Rudolph Brody, MD, has written an article on 50 years of CME that reviews the SCPMG’s long commitment to medical education.

Time has certainly brought change for KP; not only are we no longer perceived as communist, but today’s medical societies accept us as mainstream. Our commitment and rich history differentiate us from our competition. I hope you find these articles interesting and informative. I welcome your thoughts and comments.

Health Systems
Lee Jacobs, MD, Associate Editor

During the past year, the Permanente community has experienced probably more change than at any other time in our past. All this change underscores the importance of understanding and promoting the distinguishing characteristics of the “Permanente Physician,” as well as continuing to define the elements of “Permanente Medicine.” Since our inaugural edition, this has been the objective of the Health Systems section of the Journal—to present articles that help define the Permanente person and his or her practice of Permanente Medicine. This issue of The Permanente Journal takes us further down the road in our quest. These contributions to the Health Systems section include a description of the Northwest’s “Physician Advocate Resource” committee intended to help fellow physicians with emotional or substance abuse problems. The theme is—Permanente cares for its own. I believe that is especially valuable because the program seems to be easily transferred to other groups.

I’m certain that you will enjoy the Spevak, et al article on the Ohio Group’s Pain Clinic. A sound multidiscipline approach of a challenge that is all to frequently fragmented within health care systems. It seems to me that we frequently undervalue the integrated processes that are possible because of our group model structure.

The remaining articles provide us with additional information that helps in the understanding of the uniqueness of Permanente Medicine. Conrow’s and Formanek’s article on the Medical Directors’ Quality Review is a must read, if you want to understand just how Permanente is different from our competitors. We are clearly setting the standards for others to follow! Also, the Massimino, et al article on faculty development demonstrates how far out on the cutting-edge Permanente really is. Finally, Dr. Crosson describes the competitive world that we work in, and the components of Permanente Medicine that will take us to the next level of performance. I suggest that the Permanente community use Dr. Crosson’s comments to have a dialogue in their departments, offices or boards. Such a dialogue can reinforce our values and cause us to reconsider how we work.

As in the past, I would invite your comments on these articles.
Permanente Abstracts

We are pleased to highlight six abstracts authored by Kaiser Permanente (KP) clinicians and researchers. The abstracts are taken from articles published in leading scientific and medical research journals in recent months. Addressing the mounting interest in rigorously testing alternative therapies, Cherkin et al conducted a randomized clinical trial testing the effectiveness of chiropractic manipulation compared with physical therapy and provision of an educational booklet for patients experiencing low back pain. They found that for all outcomes, there were no significant differences between the physical therapy and chiropractic groups.

In another randomized clinical trial, Williams et al found that a touch-sensitive computer-based system for preventive services can contribute to an improvement in completion of screening mammography and clinical breast exams in women 50 years of age and older. This was particularly true of patients who had a health maintenance exam (HME) during the study year.

In this issue, Kaiser Permanente databases and registries demonstrate their value as resources for retrospective studies in several clinically important areas. Managed care has been criticized for early discharge of women who have uncomplicated vaginal deliveries, because this might be correlated with a higher risk of rehospitalization. In a retrospective cohort study, Meikle et al used the Colorado Kaiser Permanente Perinatal Database, administrative databases, billing records and inpatient charts to determine whether length of stay was correlated with rehospitalization or increased outpatient contacts for women after vaginal delivery. This study emphasized the importance of a flexible discharge policy managed by the attending physician.

Diabetes care is a focal area of research and implementation of disease management strategies in Kaiser Permanente. Brown et al used the KP Northwest Division's integrated laboratory information system and the KPNW Regional Diabetes Registry to examine the impact of the new American Diabetes Association criteria for diagnosis of type II diabetes. This study shows the value of having sensitive and specific databases for determining appropriate treatment, forecasting, and planning for increases in demand and ability to quickly contact and inform patients.

The national Vaccine Adverse Event Reporting System (VAERS) provided the passive surveillance data for a case series and Kaiser's Vaccine Safety Datalink (VSD), the computerized record linkage system to compare the postmarketing safety experience of two recombinant hepatitis B (HepB) vaccines licensed for infants and children in the US. The study, by Niu et al, revealed that more serious adverse events were reported in children who received a specific brand of recombinant HepB vaccine. This underscores the importance of using independent data sets (VSD) for postmarketing assessment of vaccine safety profiles.

Robbins et al compared the stage-specific prostate cancer survival of black and white male members and nonmembers of the KP San Francisco Bay region. Population-based cancer registry data show that black men with prostate cancer have poorer stage-specific survival outside of equal access health care systems. These findings support the hypothesis that tumor virulence is higher in blacks.

- Mary Durham, PhD, Associate Editor

A Comparison of Physical Therapy, Chiropractic Manipulation, and Provision of an Educational Booklet for the Treatment of Patients With Low Back Pain


**Background and Methods:** There are few data on the relative effectiveness and costs of treatments for low back pain. We randomly assigned 321 adults with low back pain that persisted for seven days after a primary care visit to the McKenzie method of physical therapy, chiropractic manipulation, or a minimal intervention (provision of an educational booklet). Patients with sciatica were excluded. Physical therapy or chiropractic manipulation was provided for one month (the number of visits was determined by the practitioner but was limited to a maximum of nine); patients were followed for a total of two years. The bothersomeness of symptoms was measured on an 11-point scale, and the level of dysfunction was measured on the 24-point Roland Disability Scale.

**Results:** After adjustment for baseline differences, the chiropractic group had less severe symptoms than the booklet group at four weeks (P=0.02), and there was a trend toward less severe symptoms in the physical therapy group (P=0.06). However, these differences were small and not significant after transformations of the data to adjust for their non-normal distribution. Differences in the extent of dysfunction among the groups were small and approached significance only at one year; with greater dysfunction in the booklet group than in the other two groups (P=0.05). For all outcomes, there were no significant differences between the physical therapy and chiropractic groups and no significant differences among the groups in the number of days of reduced activity or missed work or in recurrences of back pain. About 75 percent of the subjects in the therapy groups rated
their care as very good or excellent, compared with about 30 percent of the subjects in the booklet group (P<0.001). Over a two-year period, the mean costs of care were $437 for the physical-therapy group, $329 for the chiropractic group, and $153 for the booklet group.

**Conclusions:** For patients with low back pain, the McKenzie method of physical therapy and chiropractic manipulation had similar effects and costs, and patients receiving these treatments had only marginally better outcomes than those receiving the minimal intervention of an educational booklet. Whether the limited benefits of these treatments are worth the additional costs is open to question.

**A Patient-Initiated System for Preventive Health Care: A Randomized Trial in Community-Based Primary Care Practices**

Williams RB; Boles M; Johnson RE. Arch Fam Med 1998;7:338-45.

**Objective:** To test the effectiveness of a patient-initiated, touch-sensitive computer system (TSCS) for improving screening rates for cancers of the breast, cervix, colon and rectum, and oral cavity.

**Design:** One-year, randomized controlled trial with primary care practice as the unit of analysis.

**Setting:** Sixty primary care practices, randomly recruited from 329 nonteaching practices in a southeastern state.

**Subjects:** Random sample of the medical records of 50 male and female adult patients before intervention, and 50 adult patients after intervention in each practice, and a random sample of 507 TSCS users.

**Interventions:** Touch-sensitive computer system and a registered nurse who served as liaison to the study practices. The TSCS provided patient-specific preventive service recommendations and facilitated workflow to increase the completion of these interventions.

**Main Outcome Measures:** Average change, adjusted for health maintenance examination (HME) and use of the TSCS, in the proportion of eligible patients undergoing screening mammography, clinical breast examination, digital rectal examination, fecal occult blood test, flexible sigmoidoscopy, Pap smears, and oral cavity examination.

**Results:** We observed a significant increase in the completion of screening mammography (6.6%; P≤.05) and clinical breast examination (6.1%; P≤.01) in women 50 years of age and older, particularly for those who had an HME during the study year.

**Conclusions:** Patients who have HMEs are more likely to receive cancer screening; however, a computer-based system for preventive services can contribute to improvement in screening. Among those patients who did not have an HME, TSCS users had higher rates of breast cancer screening than nonusers.

**Rehospitalizations and Outpatient Contacts of Mothers and Neonates after Hospital Discharge after Vaginal Delivery**


**Objective:** Our purpose was to determine whether length of hospital stay after vaginal delivery as determined by the discharging physician is associated with rehospitalizations or increased outpatient contacts by mothers and neonates and to assess the impact of home health care visits.

**Study Design:** An inception cohort study of all rehospitalizations and outpatient contacts of mothers and neonates after vaginal delivery at St. Joseph Hospital, Denver, Colorado, was done from January 1, 1994, to September 30, 1995. All Kaiser Permanente mother-neonate pairs in which the delivery was vaginal (excluding those with multiple gestations or birthweight <2500 g) were included. Length of initial hospital stay was divided into three time periods: ≤24 hours, 25 to 48 hours, and >48 hours. The Colorado Kaiser Permanente Perinatal Database was used to identify perinatal and demographic factors that might have increased health care use. Additional information was sought in administrative databases, bill records, and inpatient charts. Mothers were followed up for 6 weeks and neonates for 28 days after delivery. Home care visits were provided to more than half the mothers and neonates by means of a standardized protocol. The main outcome measures were rehospitalizations and outpatient visits for mothers and neonates, controlling for home care visits.

**Results:** A total of 4323 mother-neonate pairs were identified. For mothers, a longer initial hospital stay (>48 hours) was significantly associated with both readmission (P < .01) and increased outpatient care use (P = .01) in the 6-week postpartum period. Thirty-five mothers (.81%) were rehospitalized by 6 weeks. Maternal factors associated with increased outpatient contacts were preeclampsia, preterm delivery, and instrument delivery. Sixty-seven neonates (1.55%) were readmitted to the hospital. Home care visits reduced the need for both readmissions and outpatient visits.

**Conclusions:** For mothers in this cohort, a longer initial hospital stay was significantly associated with hospital readmission and increased outpatient care in the postpartum period. Further analysis revealed that mothers with recognized potential and observed problems were rarely discharged in ≤24 hours. We did not find statisti-
cally significant problems among neonates that were related to the length of their initial hospital stay. Those neonates receiving home care were less likely to require hospital readmission and less likely to seek outpatient care. It is unlikely that a single discharge policy will be appropriate for all mothers and neonates.

Impact on a Population-Based Registry of Changing Diagnostic Thresholds for Diabetes


Background: In an effort to simplify the process of detecting type 2 diabetes and to better align the results of oral glucose tolerance testing (OGTT) with fasting plasma glucose (FPG) concentration, the American Diabetes Association recently proposed a new diagnostic threshold for type 2 diabetes: \[ a \] a confirmed fasting plasma glucose (FPG) \( \geq 126 \text{ mg/dL} \) or \[ b \] a confirmed nonfasting plasma glucose (non-FPG) \( \geq 200 \text{ mg/dL} \). Recent publications indicate that adopting the new diagnostic criterion would increase the number of persons with undiagnosed diabetes from 7.9% to 9.9% of adults aged 40-74 years if all undiagnosed members of a population were screened. We examined this question in the highly sensitive and specific databases of Kaiser Permanente Northwest Division’s Regional Diabetes Program.

Methods: In 1996, our diabetes registry contained 16,597 members with diabetes and at least one month of health plan eligibility (4.12% of total membership). A single integrated laboratory information system in use since 1993 recorded all outpatient and most inpatient laboratory test on health plan members.

Results: We identified 7,899 members who had either a confirmed FPG 126-140 mg/dL or a confirmed non-FPG \( > 200 \text{ mg/dL} \) between January 1, 1993 and December 31, 1996. Of this number, 6,081 were already in the diabetes registry. Of the remaining 1,818, 752 subsequently entered the registry by the end of 1996. Therefore, over the three year interval studied, adoption of the new ADA diagnostic threshold would have identified 1,066 members who would not otherwise have entered the diabetes registry by the end of 1996, increasing the registry size at the end of 1996 by 6.4%.

Discussion: Although we cannot precisely predict what will happen as the new ADA threshold achieves acceptance and as results in the 126-139 mg/dL range are followed up more aggressively, our analysis suggests that in a large, stable, integrated group-model HMO, lowering the diagnostic threshold for type 2 diabetes to FPG \( \geq 126 \text{ mg/dL} \) would increase the number of persons diagnosed with diabetes by approximately 6.4%.

Comparative Safety of Two Recombinant Hepatitis B Vaccines in Children: Data From the Vaccine Adverse Event Reporting System (VAERS) and Vaccine Safety Datalink (VSD)

Niu MT; Rhodes P; Salive M; Lively T; Davis DM; Black S; Shinefield H; Chen RT; Ellenberg SS. J Clin Epidemiol 1998 Jun;51(6):503-10.

Background: Preliminary review of data from the Vaccine Adverse Event Reporting System (VAERS), 1991-1994, revealed that more serious adverse events were reported in children who received a specific brand of recombinant hepatitis B (HepB) vaccine.

Objective: To compare the postmarketing safety experience of the two recombinant HepB vaccines licensed for use in infants and children in the United States.

Design: Review of a case series derived from passive surveillance data in the national VAERS. A retrospective cohort study using data from one health maintenance organization participating in Vaccine Safety Datalink (VSD), a computerized record linkage system.


Main Outcome Measures: VAERS reporting rates for each vaccine by manufacturer were calculated from the numbers of reported events occurring within 30 days of HepB vaccination and the number of doses distributed by the manufacturers. VSD event rates for each vaccine were calculated from the numbers of hospitalization or emergency room visits within 30 days of HepB vaccination and the number of vaccine doses administered to the cohort.

Results: In VAERS, higher rates of serious events (ie, life-threatening or resulting in hospitalization or permanent disability) were reported in children who received Vaccine A vs. Vaccine B (relative risk [RR]: 3.13-8.18, \( P<0.01 \)), particularly by those vaccinated in the private sector (RR: 3.13, \( P<0.01 \)) but not public sector (RR: 2.12, \( P=0.19 \)). Similar types of events were reported in recipients of both vaccines. In contrast, analysis of VSD data showed no significant difference in rates of hospitalization or ER visits in children who received either HepB vaccine (RR: 0.96-1.25, \( P>0.05 \)).

Conclusions: Our investigation reveals that it is unlikely there is a true difference between rates of
serious events temporally associated with the two HepB vaccines in children. This study demonstrates the dual roles played by VAERS and VSD in providing a more complete picture of the postmarketing safety profile of childhood vaccines and underscores the importance of using other analytic studies to evaluate findings from passive surveillance systems of adverse events.

**Race, Prostate Cancer Survival, and Membership in a Large Health Maintenance Organization**

**Background:** Population-based cancer registry data have shown that black men with prostate cancer have poorer stage-specific survival than white men, while studies in equal-access health care systems have not found racial differences in stage-specific survival. This study was designed to test the hypothesis that black men and white men with prostate cancer have equal stage-specific survival in equal-access health care systems.

**Methods:** We conducted a cohort study using cancer registry data from all incident cases of prostate cancer occurring in a five-county San Francisco Bay Area region. Incident cases occurred among members (5263 cases, from January 1973 through June 1995) and nonmembers (16,019 cases, from January 1973 through December 1992) of the Kaiser Permanente (KP) Medical Care Program, a large health maintenance organization. Death rate ratios (DRRs, black men versus white men) for KP members and nonmembers were computed for all stages combined (adjusting for age and stage) and for each stage (adjusting for age).

**Results:** Among KP members, adjusted DRRs comparing black men with white men were as follows: all stages combined, 1.28 (95% confidence interval [CI] = 1.14-1.44); local stage, 1.23 (95% CI = 1.01-1.51); regional stage, 1.30 (95% CI = 0.97-1.75); and distant stage, 1.27 (95% CI = 1.07-1.50). Corresponding DRRs for nonmembers were as follows: all stages combined, 1.22 (95% CI = 1.14-1.30); local stage, 1.24 (95% CI = 1.09-1.41); regional stage, 1.48 (95% CI = 1.29-1.68); and distant stage, 1.01 (95% CI = 0.91-1.12).

**Conclusions:** These results show poorer prostate cancer survival for black men compared with white men in an equal-access medical care setting. The findings are most consistent with the hypothesis of increased tumor virulence in blacks.

We are guests in our patients’ lives; and we are their hosts when they come to us. Why should they, or we, expect anything less than the graciousness expected by guests and from hosts at their very best. Service is quality.
Donald M. Berwick, MD
President and Chief Executive Officer
Institute of Healthcare Improvement
Hemochromatosis: A Common, Rarely Diagnosed Disease

Hemochromatosis is a common, preventable disease that is rarely diagnosed. About 30,000 homozygous cases exist nationwide within the entire KP Program, but probably fewer than 1000 are diagnosed: one case—diagnosed or not—is seen by each KP clinician every two weeks. Typically, the end organ damage caused by hemochromatosis is readily ascribed to other, even more common disease processes. When hemochromatosis becomes symptomatic, major therapeutic advantage is lost. Ideally, everyone should be screened once per lifetime by having serum iron levels and total-iron-binding capacity (TIBC) measured. Treatment has two goals: normalization of body iron load (through lifetime phlebotomy) and identification and treatment of the patient's affected relatives.

Introduction

Hemochromatosis is the most common, life-threatening genetic disorder in North America, yet most physicians have never personally diagnosed a case: all see an unrecognized case in their offices every two weeks. Hemochromatosis is important because of its prevalence, its serious nature, and even more so because it is totally preventable. Until recently, the disease was thought to be rare. The recent advent of genetic analysis has confirmed that homozygous hemochromatosis has a documented prevalence of 1:250 in the U.S. population. Thus, the average practicing physician sees a case every 10 working days. Most of those cases are presymptomatic when seen, but many are misdiagnosed as some other, more familiar condition which has the same initial appearance. Moreover, the gamut of clinical presentations is far more extensive than would be suggested by, for example, the classic triad of darkened skin, diabetes, and cirrhosis—which we all learned about and then never saw. Put differently, Kaiser Foundation Health Plan (KFHP) nationwide has identified hundreds among probably more than 30,000 members with homozygous hemochromatosis. It is now technologically possible to correct this disparity simply and inexpensively, to everyone's benefit.

Historical Background

Hemochromatosis was first described by Trousseau in 1865 and was given its current name in 1889 by von Recklinghausen, who established that iron caused the pigmented changes seen in the disease. The first study of published cases of hemochromatosis was organized by Sheldon in an extraordinary monograph which analyzed 311 of 345 cases collected from the world medical literature and concluded that hemochromatosis was not a complication of diabetes, cirrhosis, or copper excess, but a familial disorder in which "... the fundamental nature of the disease consists in a disorder of metabolism...[where]... the tissues have an abnormal avidity for iron." In 1950, Davis and Arrowsmith (cited by Edwars and Kushner) ingeniously proposed phlebotomy as a treatment for hemochromatosis. The next major advance came when autopsy studies showed a much higher prevalence of the disease than was being diagnosed clinically and led to population studies showing a homozygous prevalence of 3-10 cases per thousand, far greater than ever expected. Nonetheless, multiple supporting studies published in leading journals led to no change in clinical practice: hemochromatosis continues to be dismissed as a rare disease. By the end of the 1980s, however, researchers had shown that early treatment blocked phenotypic expression of the disease and thus that hemochromatosis should be diagnosed through screening. Saturation of TIBC became recognized as the best test; liver biopsy and ferritin measurements were shown to have major limitations. The next major advance came in 1996, when the gene for hereditary hemochromatosis was identified. A genetic probe was created almost immediately, and the population prevalence of homozygous hemochromatosis (1:250) was confirmed in multiple cities as well as specifically among KFHP members within the Kaiser Permanente Local Market Area in San Diego (KPSD), where the first permanent, ongoing, population-based hemochromatosis screening program in the nation was established.

Terminology Issues

Our expanding knowledge of hemochromatosis taxes conventional terminology and includes several concepts. Hemosiderosis is a histologic term that refers to tissue deposition of iron, regardless of mechanism or presence of clinical disease. Iron overload disease refers to any disorder involving iron overload, regardless of mechanism; moreover, iron overload disease may be focal (eg, Hallervorden-Spatz Disease, primary pulmonary hemosiderosis) or diffuse (eg, hemochromatosis). Hemochromatosis has been used to refer to the tissue damage produced by any systemic iron overload disease, including the transfusion iron overload seen in thalassemia, which obviously does not involve the HFE
gene. Because of this potential for confusion, the term hereditary hemochromatosis should be used to specify the systemic, genetically determined iron overload disease caused in humans by excessive intestinal iron absorption.

As is generally agreed, most patients homozygous for hemochromatosis become symptomatic, given sufficient time for excess iron to accumulate. Nonetheless, now that we can identify the HFE gene, a further distinction between the genotypic and phenotypic stages of hereditary hemochromatosis is important to prevent life insurance companies from automatically construing a diagnosis of “hemochromatosis” to necessarily imply serious organ damage. With early diagnosis and treatment, genotypic hereditary hemochromatosis need never progress to phenotypic expression. Early treatment is now well documented to prevent development of organ damage and allow normal life expectancy.7

Understanding all this, we must remember that the pathology of all iron overload diseases is the direct result of iron overload and is not related to the mechanism by which iron enters the body.

**Epidemiology**

Hemochromatosis is an autosomal-recessive disease which has a population prevalence of about 4 cases per thousand in Europe, and hence in our hemisphere. Therefore, one of every eight Americans is a heterozygous carrier.3 Fortunately, the heterozygous state is only infrequently symptomatic (exceptions are discussed later). Hemochromatosis is less common in black people of any ethnic origin and is rare in mainland Asian persons; the prevalence in people of Filipino origin approximates that of white people. Essentially nothing is known of the prevalence in other Pacific Islanders. Hispanic persons have the same prevalence as white persons not of Hispanic origin, but among Irish persons, the prevalence of the homozygous state is thought to be approximately 1:80, leading many researchers to hypothesize that the original mutation occurred in Ireland during ancient times and then spread to mainland Europe. In our Hemochromatosis Registry, the prevalence of Irish names is striking. The exact prevalence of some manifestations of hemochromatosis is still unsettled but is ethically unlikely to be investigated in humans by traditional statistical methods (ie, by comparing treated persons with an untreated homozygous control group).

In July 1997, a permanent Hemochromatosis Screening Program was established in the Health Appraisal Clinic of KPSCD Preventive Medicine Department to serve the 500,000 KPHP members who reside in KPSD. Each year, approximately 50,000 adult members receive once-in-a-lifetime screening for iron overload disease as they pass through this clinic. As a result of this screening, more than 200 patients are currently enrolled in our phlebotomy program. However, given that KPSCD probably has about 1900 members with hemochromatosis, this number is only a beginning. The number of Irish names in our Hemochromatosis Registry is notable, but even more remarkable is the diversity of origins reflected by names in the Registry. As expected in screening, many of the hemochromatosis patients identified are presymptomatic, an ideal situation when dealing with a disease whose phenotypic expression can be blocked by early treatment.

**Biochemical Pathophysiology**

Only in recent decades has hemochromatosis been understood to be a hereditary disorder in which excess iron is absorbed from food. We now know that the basic pathophysiology of hemochromatosis lies in a defective gene controlling the intestine’s mucosal barrier to iron absorption. Although essential to enzymatic and metabolic processes, iron is highly toxic and irritative when an excessive amount is absorbed. The human body can not excrete excess iron; the amount which enters the body remains there permanently unless lost through skin desquamation, childbirth, menstruation, or other blood loss such as by donation or hemorrhage. Normally, iron absorption is tightly regulated by the intestinal mucosa to approximately 1.5 mg/day. In persons with hemochromatosis, this is approximately doubled. Ascorbic acid, citric acid, and low dietary phosphate further increase iron absorption. Conversely, iron absorption is inhibited by achlorhydria and by oxalates, tannates, phytates, and phosphates, all of which form insoluble iron complexes in the intestine. The practical implication of this is that the bioavailability of ingested iron varies greatly. Popeye’s spinach contains abundant iron but is only a metaphor for an iron source, because oxalates in spinach inhibit absorption of its iron. Overall, vegetable-derived iron has low bioavailability; the iron obtained from red meat has high bioavailability; white meat and seafood have less available iron than is absorbable from red meat. Given the high prevalence of vitamin C supplementation in the general population, we may suppose that the large minority of our population that is heterozygous for hemochromatosis runs some risk of seriously accelerated iron absorption. Indeed, vitamin C supplementation by heterozygotes is a confounding issue in screening.

At birth, no person with hemochromatosis has iron overload—only the genetic capacity for that process to begin after foods containing iron are ingested.
As iron loading progresses, iron is stored mainly in the liver within the complex protein, ferritin; each molecule of ferritin can bind as many as 4500 atoms of iron. Only a tiny fraction of the body’s ferritin circulates in plasma, but circulating ferritin levels have an approximate relation to total iron stores. The adult human body contains about 4 g of iron, of which 3 g are bound in hemoglobin, myoglobin, and enzyme systems; for example, each 500 mL of blood contains about 200 mg of iron. The additional 1 g of iron is stored in reserve. (Occasionally, over many decades, a patient may accumulate a total body iron load as high as 30 g—equivalent to an ounce of metallic iron—and thus set off airport metal detectors!) When excess amounts of iron are absorbed (as in hemochromatosis) or infused (as in repeated transfusion therapy for chronic hemolytic disorders), the excess iron ultimately is deposited in various organs, where the iron induces an inflammatory reaction that induces fibrotic damage to the organ. The basis for selective variability in organ deposition is unknown; however, a hereditary mechanism is possible, given that identical twins have identical patterns of iron deposition in organs. Only infrequently does the classic triad of darkened skin, cirrhosis, and diabetes develop; and the lungs, kidneys, and eyes are never damaged by the disease.

**Genetic Pathophysiology**

In 1996, investigators at Mercur Genetics Corporation (Menlo Park, California) identified the gene for hereditary hemochromatosis. This gene, HFE, lies on chromosome 6. Identifying HFE was difficult because its location permitted few crossovers, with their analytic advantages for genetic localization. HFE controls formation of an HLA-like glycoprotein that contains a β2-microglobulin-binding site. The importance of the protein lies in the fact that iron is normally bound to transferrin in the serum. As transferrin becomes saturated with iron, the iron is bound to transferrin molecules on the surface of cells and is internalized. Interestingly, HFE regulates the number of transferrin receptors on the cell membrane, which in turn allows for increased iron uptake. The fact that genetic testing is available for hemochromatosis has made it possible to identify individuals at risk for the disease and to offer them early intervention. Early intervention is key to preventing the complications of hemochromatosis. The earlier the diagnosis, the better the outcome.

<table>
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<tr>
<th>Age</th>
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<th>Physiological measures</th>
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of β2-microglobulin in iron metabolism is suggested by the iron accumulation that occurs in a mouse (the “β2-microglobulin knockout mouse”) in which the HFE gene site is functionally deleted.10

Techniques suitable for clinical genetic analysis were soon developed, and two clinically significant mutations were found in the HFE gene: one at the 845 nucleotide locus, causing substitution of tyrosine for cysteine in codon 282; and one at the 187 nucleotide locus, causing substitution of aspartic acid for histidine in codon 63. The mutations are therefore sometimes designated 282Y and 63HD, respectively, although the nucleotide-based notation which assigns the names 845A and 187G to these mutations is more appropriate terminology.11 The HFE mutations producing hemochromatosis evidently act by causing deficiency of the HFE protein, not by changing its characteristics.12 However, the mechanism by which HFE protein regulates iron absorption is not yet understood.

The location of a mutation within the HFE gene determines its clinical significance. For instance, homozygous mutation at the 845 locus has high penetrance when untreated—for instance, there is sufficient time for iron to be absorbed. Indeed, most cases of clinical hemochromatosis show homozygosity at the 845 locus. Conversely, abundant iron overload is unlikely in the 845 heterozygous state but is certainly possible in special circumstances (eg, high intake of ascorbic acid or alcohol or concurrent thalassemia minor). Iron overload is also unlikely, but possible, in the 187 homozygous mutation. The 187 heterozygous state has no clinical significance and should be considered normal. A double (compound) heterozygous state exists where one 845 and one 187 allele are mutated; clinical iron overload occurs in a small percentage of these cases of polymorphic mutation. The determinants of variable penetrance in humans are poorly understood but may include unrecognized polymorphism, increased absorption of other trace elements,12 and dietary factors.13

These sophisticated technologies should not mislead us into thinking that genetic analysis supersedes traditional chemical forms of laboratory diagnosis in individual cases. Although genetic abnormalities can be prognostically helpful, the gene currently identified leads to confirmation of hereditary hemochromatosis in only about 85% of proven cases. Although not yet found in preliminary investigations, additional mutations can also be expected to cause hemochromatosis. Moreover, the variable penetrance of polymorphic mutations within the HFE gene indicates a degree of clinical complexity not yet appreciated. Genetic analysis can predict the statistical likelihood of iron overload disease developing over time and

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**Case Example: One Physician's Own Medical History**

The diagnosis of clinically active hemochromatosis is easily overlooked, as illustrated by Dr. Graydon Funke, a disability-retired pediatrician from Southern California Permanente Medical Group (SCPMG) in Harbor City, California. Hoping to stimulate other physicians to be screened for this disease, Dr. Funke describes his own case:

I am now 68 years old. I had no major medical problems for the first 35 years of my life. I then developed some pain and swelling of the metacarpophalangeal joints of the index and middle fingers of both hands. I was diagnosed with gout and had uric acid levels between 6 and 11 mg/dL, and several joint taps were said to show the presence of uric acid crystals. Wrists, fingers, and toes were affected, but never a large joint. Allopurinol has prevented all acute attacks in the last 10 of the 15 years I’ve taken it. I was quite physically active for most of my life. By age 45, however, arthritic symptoms developed in my ankles, hands, back, and neck. I gradually became easily fatigued. I consulted with several internists and orthopedists, none of whom suggested a specific diagnosis. A brief trial of cortisone during a bike trip gave me much relief.

Once at age 59, while I was skiing, severe hip pain developed suddenly; the next year, I had a total left hip replacement. No one was certain whether I had arthritis alone or also had aseptic necrosis. Chronic atrial fibrillation developed a week after surgery, and attempts at cardioversion were never successful.

I became depressed, and my joint symptoms progressed to where I had to accept disability retirement at age 60. We moved to San Luis Obispo, and last year, at age 67, I came under the care of a local rheumatologist, Dr. Barry Eibschutz, who saw my rheumatic knuckles and said at the first visit, “I think you have hemochromatosis.” My serum ferritin level was 2250 ng/mL. I had seen six internists, five rheumatologists, three orthopedists, two physiatrists, and one psychiatrist, but no practitioner—including myself—even considered hemochromatosis.

MRI scan of my liver showed the increased density typical of iron overload. Results of my liver function tests were normal, and I chose not to have liver biopsy. I have now had 40 weekly phlebotomies of 500 mL that have reduced my serum ferritin level to 20 ng/mL. Diabetes had been developing, but my blood sugar levels are now becoming normal, perhaps owing to removal of the excess iron. My depression and fatigue have greatly improved with phlebotomy, although the arthritis has not.

In retrospect, my family history is interesting. My mother’s skin darkened in her later years, and she had arthritis in her wrists. She died of congestive heart failure at age 83. My father died at age 69 of a blood dyscrasia and liver problem and had a terminal pulmonary embolism. I have no siblings.

I urge all of you reading this to get a simple blood test to rule out this common condition. It could save you a lot of pain and grief—and possibly your life. I also want to see our Medical Group start testing children for this condition. Such testing would certainly be cost-effective, given my experience.
can help to explain clinical situations that previously were confusing. Thus, genetic analysis—an extraordinary scientific accomplishment—contributes to clinical understanding but does not supersede it. Finding cases—non genetic analysis—is the goal and is still best accomplished by testing for saturation of TIBC.

**Clinical Features**

Its broad clinical spectrum is part of the reason why hemochromatosis is so infrequently diagnosed. Each of its manifestations has other, more common explanations. Indeed, to cardiologists, hemochromatosis is unexplained cardiomegaly; to orthopedists, it is a need for hip replacement; to gynecologists, it is infertility; to urologists, impotence; and to family practitioners, the disease is identified as fatigue with depression. The situation is reminiscent of a fable: three blind men each try to identify an elephant by feeling a different part of the creature, thereby missing its essence. Dr. Funke’s case illustrates this point. Notwithstanding the need to understand hemochromatosis in its totality, for purposes of discussion the diverse clinical features of this disease are conveniently grouped by organ system affected.

**Musculoskeletal**

Unlike the description of the “classic triad,” arthralgia is the most common symptom of hemochromatosis. However, nothing is distinctive about this symptom. Arthritis is common and often misdiagnosed as seronegative rheumatoid arthritis. A pattern of arthritis involving the metacarpophalangeal and proximal interphalangeal joints of the second and third fingers suggests hemochromatosis. However, its appearance can be indistinguishable from osteoarthritis, gout, or pseudogout. In addition, because iron overload disease underlies many cases of chondrocalcinosis, a radiographic finding of chondrocalcinosis should prompt evaluation for hemochromatosis. Occasionally, joint cartilage is rust-colored, but this finding is not specifically diagnostic. Many persons having joint replacement, particularly at younger ages, have hemochromatosis that remains unrecognized. The KPSD orthopedics department is currently collaborating with our clinic in an effort to determine the prevalence of hemochromatosis appearing initially as arthritis requiring joint replacement.

Typically, phlebotomy does not improve the arthritic symptoms of hemochromatosis; they sometimes worsen despite phlebotomy, illustrating the importance of diagnosing and treating hemochromatosis in its presymptomatic stage. However, Cutler has described great improvement of arthritic symptoms from use of deferoxamine. Many agree that arthritic symptoms can be reliably prevented if phlebotomy is done before their onset. However, much remains to be learned about the arthritis of hemochromatosis: Crosby pointed out that arthritis was not described as a complication of this disease before 1962. Moreover, the detailed monograph by Sheldon reported no cases of arthritis among 311 untreated, advanced cases of hemochromatosis, although joints were examined grossly and microscopically. The implications of this are unclear but suggest that some other factor, possibly dietary, may help to explain the current prevalence of arthritis in hemochromatosis. The videotape, “Hemochromatosis in Orthopedics and Rheumatology,” illustrates the experience of four KPSD members who have hemochromatosis with extensive skeletal involvement.

**Gastrointestinal**

Although hemochromatosis is typically conceived as a hepatic disorder, the classic triad of cirrhosis with darkened skin and diabetes actually defines an uncommon combination found only in advanced disease; the diagnosis of hemochromatosis is thus usually overlooked. Hepatomegaly is common in hemochromatosis, but transaminase values are frequently normal in uncomplicated disease, particularly if the patient’s medical history does not include alcoholism or hepatitis B or C. Indeed, as Dr. Funke’s case illustrates, normal liver enzyme levels do not preclude the need to consider hemochromatosis as a possible diagnosis.

In hereditary hemochromatosis, iron accumulates distinctively in perportal hepatocytes. By contrast, in secondary hemochromatosis (eg, resulting from transfusional iron overload or thalassemia), macrophages process out large numbers of red blood cells, and iron is deposited in the reticuloendothelial macrophages (which, in the liver, are termed Kupffer cells). Those cases of alcoholic cirrhosis in which minor deposits of iron are found in the hepatocytes could be due to the confounding influence of a coincident heterogeneous state for hemochromatosis. When other processes like alcoholism or chronic hepatitis are present with hemochromatosis, the threshold for cirrhosis is lowered.

Once viewed as the standard procedure for diagnosing hemochromatosis, liver biopsy is increasingly being seen as unsuitable for this purpose because its results are frequently normal at early stages of the disease.
half of liver biopsies done in presymptomatic cases have shown normal results. Even in symptomatic cases, about 8% of liver biopsies do not produce diagnostic results (ie, grade 3 or 4 when Perl's stain is used). Thus, liver biopsy results and their derivative measures (eg, the Hepatic Iron Index) are often misleadingly normal at precisely the stages of hemochromatosis where therapeutic opportunity is greatest.

The same logic applies to use of magnetic resonance imaging (MRI) and magnetic susceptometry (SQUID) to evaluate liver iron stores because these techniques also show normal stores of iron in the liver early in the disease. No matter how sophisticated the approach, any diagnostic technique focused on liver iron stores is limited in diagnosis of advanced cases only; worse yet, early cases will predictably be missed. On the other hand, because hepatoma is a potential outcome of untreated hemochromatosis, those who favor liver biopsy argue that it has a role in demonstrating cirrhosis with its implications for development of hepatocellular carcinoma. Others see little purpose in attempting this prediction.

Splenomegaly occurs in hemochromatosis and should suggest that disease as a possible diagnosis. Abdominal pain is common in hemochromatosis; the pain is often located low in the abdomen, suggesting mechanisms other than simple stretching of Glisson's capsule. Chronic diarrhea also occurs commonly in hemochromatosis and has an episodic quality that is easily confused with irritable bowel syndrome.

Endocrine

The endocrine manifestations of iron overload are all disorders of hypofunction. Excess iron deposited selectively in the pituitary gland causes gonadal failure (hypogonadotrophic hypogonadism): impotence and bilateral testicular atrophy occur in men, whereas menstrual irregularity, infertility, and premature menopause occur in women. Both sexes commonly manifest loss of axillary, pubic, and limb hair. Secondary osteoporosis can also be expected. Hypothyroidism is more common in iron overload disease than in the general population and results from end organ fibrosis and thyroid autoantibodies. By contrast, hyperthyroidism has sometimes provided false evidence of hemochromatosis by causing elevated iron saturation and serum ferritin levels. Iron overload disease has rarely been reported to cause hypoparathyroidism and adrenal failure.

If deposited in the pancreas, excess iron induces diabetes mellitus. Conflicting reports on the prevalence of iron overload disease in diabetes probably reflect the stage at which hemochromatosis was diagnosed: late (ie, because suggested by clinical appearance) or early (eg, through screening). Neither Type 1 nor Type 2 diabetes characterizes the diabetes mellitus seen in hemochromatosis; multiple causative mechanisms seem possible, perhaps depending on the stage of the disease. Early treatment of hemochromatosis has been shown to reverse some cases of diabetes. In addition, treatment with deferoxamine greatly improved glycemic control in some cases of hyperferritinemic diabetes. Hemochromatosis should be treated early to prevent diabetes, and all diabetic patients should be screened once for underlying iron overload disease.

Cardiac

Both the conduction and the pumping systems of the heart can be damaged by iron overload. Cardiomegaly, bradycardia, arrhythmia, and congestive heart failure result. Cardiomyopathy of hemochromatosis may be either dilated or restrictive and is usually alleviated greatly by phlebotomy. Iron overload is therefore an important diagnosis to consider for all patients who have cardiomyopathy, congestive heart failure, atrial fibrillation, or nonathletic bradycardia. When hemochromatosis manifests in adolescence, as it occasionally does, the heart is the organ most affected—and cardiac death from arrhythmia or congestive heart failure is the typical outcome. Such an adolescent case with cardiac death is illustrated in our videotape, "Hemochromatosis at Autopsy: A Mother's Story." What portion of cases of "idiopathic cardiomyopathy" actually represent undiagnosed hemochromatosis is yet to be determined. Cardiomyopathy and arrhythmia are well-documented outcomes of iron overload, but a currently contested hypothesis proposes that elevated iron stores are related to coronary artery disease in heterozygotes.

Hematologic

Contrary to popular expectation, anemia can result from iron overload. This point is important to remember lest a patient's anemia lead the physician to avoid diagnostic consideration of hemochromatosis. Indeed, many cases of iron overload disease are worsened by repeated prescription of ferrous sulfate for nonresponsive forms of anemia caused by unrecognized hemochromatosis. In this anemia, which typically resolves as iron is removed from the patient, excess iron causes toxic suppression of marrow function. We recently treated a middle-aged KPSD member whose hematocrit level rose from 32 to 43 as 40 units of blood were removed! Marrow iron stores correlate poorly with total body iron and may be low in presence of major iron overload; marrow examination is therefore not diagnostically helpful.

"Cardiomyopathy of hemochromatosis may be either dilated or restrictive and is usually alleviated greatly by phlebotomy."

"The endocrine manifestations of iron overload are all disorders of hypofunction."
**Dermatologic**

Skin changes (classically described as bronzing) are most readily recognized as axillary tanning, which occurs at a relatively late stage in the disease. Two mechanisms are involved: 1) iron stimulates melanin, producing a tan color; and 2) direct iron deposition adds a greyish hue. Loss of body hair (already described here as an endocrine process) is another dermatologic effect. An uncommon blistering lesion of areas exposed to sunlight, porphyria cutanea tarda, is associated with underlying iron overload as well as with chronic hepatitis C. Porphyria cutanea tarda responds well to treatment of the underlying iron overload. All patients with porphyria cutanea tarda should be tested for hemochromatosis, and all patients with hemochromatosis should be examined for presence of photosensitive, vesiculating dermatitis.

**Neuropsychiatric**

The biomedical literature contains little discussion of nervous system effects caused by systemic iron overload disease. However, clinical depression that is out of character for the individual occasionally occurs and is reversed by phlebotomy. Mild dementia not confounded by coincident alcoholism or liver failure may develop rapidly and is reversed by phlebotomy. Profound fatigue, too, may develop suddenly and is reversed by phlebotomy. The brain in hemochromatosis contains a large amount of iron, and a prominent neuropeptide-like distribution pattern of transferrin receptors in the brain suggests that transferrin may have a neuromodulating function. Deafness is well known to be associated with hemochromatosis. Less clear is whether peripheral neuropathy, in the absence of diabetes, and tinnitus are also associated with hemochromatosis.

**Infection and Malignancy**

Hemochromatosis lowers the threshold for development of chronic active viral hepatitis, whose coincidence with iron overload disease is distinctly higher than expected. Any patient with this condition should therefore be screened for hemochromatosis. In addition, reduction of iron levels in chronic hepatitis C might improve the effectiveness of interferon treatment. Patients with Vibrio vulnificus, Listeria monocytogenes, and Yersinia infections should also be screened for hemochromatosis because iron overload predisposes patients to infection by these organisms. Hepatoma, too, is well known to have higher prevalence in hemochromatosis.

**Comparison of Diagnostic Methods**

**Saturation of TIBC**

Currently, hemochromatosis is most reliably diagnosed by "transferrin saturation" testing, which costs only about $2 per test and is required only once per lifetime. The test, which indicates whether excess iron is being absorbed, gives reliable results for patients aged ≥1 year but not for neonates. For both sexes, excess iron absorption is suggested by >50% saturation in randomly drawn specimens. Some researchers have recommended a threshold of 55% saturation for men, but 8% of our homozygous male patients with hemochromatosis would have received misdiagnoses if the higher value had been selected as the diagnostic. To assure a reliable conclusion free of confounding influences, any initial test showing elevated iron levels should be repeated after the patient has fasted overnight and consumed no vitamin or mineral supplements for at least 24 hours; vitamin C (ascorbic acid) supplementation is particularly responsible for raising serum iron levels (especially in heterozygotes) because it increases intestinal absorption and releases iron from ferritin. Moreover, diurnal transferrin saturation levels vary: fasting morning specimens have higher saturation. Our experience with tens of thousands of randomly drawn specimens shows that 2.5% of KPSD members have saturation ≥50% at initial random testing, whereas the rate of abnormal results drops to 0.4% for patients who are retested after they have fasted overnight and ingested no dietary supplements for at least 24 hours. Fasting saturation values persistently >62% are highly likely to indicate hemochromatosis. Illness, infection, and other factors can alter serum iron levels or TIBC, but these alterations balance each other, causing transferrin saturation to remain relatively unaffected.

**Serum Ferritin Level**

Measurement of serum ferritin level gives useful—though imperfect—estimates of total body load but is not as useful as serum iron saturation for screening hemochromatosis. For instance, serum ferritin levels remain normal in all patients at the early stages of hemochromatosis, whereas serum ferritin levels are commonly elevated in alcoholism and in unrecognized chronic hepatitis—conditions which routine testing has shown to be more common than we may think. Infrequently, serum ferritin level is normal in symptomatic iron overload disease, possibly indicating increased density of iron packing in the ferritin latticework.

**Liver Biopsy and Other Tests**

In addition to being expensive, not without risk, and likely to cause some patients to reject diagnostic testing (and thus to evade treatment), liver biopsy is clearly problematic as a diagnostic tool in hemochromatosis: it can detect iron overload and
organ damage only to the extent that an affected patient has had sufficient time to absorb excess iron; liver biopsy can thus diagnose only advanced cases. This limitation of liver biopsy—a limitation that makes negative results nondiagnostic—is shared by computed tomography (CT) scanning, MRI, and magnetic susceptometry. For the same reason, too, biopsy (or autopsy) of organs other than liver—skin, atrophic testis, gastric mucosa, and even myocardium—may be nondiagnostic for hemochromatosis that has not yet progressed to phenotypic expression in that organ.

Clinical diagnosis of hemochromatosis must be distinguished from population diagnosis because they are not equally efficient or cost-effective. Clinical diagnosis of hemochromatosis requires each practitioner to be constantly vigilant as well as familiar with a range of possible presentations, yet is certain at best to identify only patients whose disease is already beyond full preventive treatment. In contrast, population diagnosis can identify many presymptomatic cases and requires only a simple, inexpensive, one-time test given to large numbers of persons, most of whom will prove normal. Overall, the contrast between the approaches is similar to the difference between diagnosing a case of tetanus and immunizing patients with tetanus toxoid.

Confirming the Diagnosis

The diagnosis of hemochromatosis can be confirmed by any of several methods, but some are more reliable and practical than others:

- Quantitative demonstration of body iron overload by phlebotomy or chelation,
- Biopsy or autopsy demonstration of tissue iron overload,
- HLA typing identical to a proven case in a close relative,
- Genetic analysis demonstrating homozygous presence of the HFE gene.

Testing the patient’s response to quantitative phlebotomy is simple, inexpensive, safe, and highly effective. Given the fact that an adult body has about 1 g of storage iron and that a pint (500 mL) of blood contains 200-250 mg of iron, weekly phlebotomy of 500 mL will normally induce iron depletion anemia within four to five weeks. In an iron-overloaded individual, anemia will not occur for many months, the exact time depending on the total body load of accumulated iron. An additional advantage of this approach is that it also affects treatment.

A different quantitative test sometimes used to confirm the diagnosis is measurement of the urinary iron removed after a single subcutaneous injection of 0.5 g of the chelating agent, deferoxamine. However, this approach should not be considered reliable in teenagers or children who have high serum iron saturation but low serum ferritin levels, because major iron overload has not yet occurred in these patients. The only tool for confirming the diagnosis in these patients is genetic analysis, understanding its limited (85%) sensitivity.

Family HLA Typing

HLA testing of close relatives was formerly used in family screening because all family members with hemochromatosis have the same tissue type (the hemochromatosis gene is tightly linked to the locus of HLA genes). However, HLA testing is expensive, now unnecessary for diagnosis, and has been replaced by genetic analysis.

Genetic Analysis

In families where the proband is genetically abnormal for the currently recognized gene, genetic analysis can identify individuals who are homozygous for the HFE gene. Genetic analysis is desirable as an adjunct but not absolutely necessary for diagnosis or treatment. It does have significant practical value in convincing doubtful physicians that their patients have hemochromatosis. It is currently not an appropriate screening test, although it is being so used by some who do not understand its limitations.

Treatment

Because the essence of hemochromatosis is iron overload, the goal of treatment is to normalize the total body load of iron—usually by weekly phlebotomy in 500 mL amounts until iron levels are normalized. More extensive phlebotomy—removal of two units of blood per week—may be needed by patients who are urgently symptomatic when diagnosed, and this treatment is well tolerated by most such patients. However, phlebotomy is optimally started in advance of symptoms because phlebotomy can block phenotypic expression only in the early, presymptomatic stages of hemochromatosis. (This limitation clearly indicates the need for early diagnosis through screening.) It is as wrong to delay treatment until symptoms occur as it would be to delay treatment of hypertension until stroke or cardiomegaly supervened. To normalize total body iron loads, symptomatic hemochromatosis patients often need removal of 20-80 pints of blood, depending on how far the disease has progressed when diagnosed. Treatment outcome is monitored by periodic serum ferritin measurement. At KPSD, we use a computerized Hemochromatosis Registry (the computer program is available with manual for the cost of copying) to track the progress of all treated cases.
Liver transplantation is the treatment of last resort for hemochromatosis.

Diagnosis of hereditary hemochromatosis has two beneficiaries: the patient and the patient's not-yet-diagnosed relatives.

Phlebotomy is done at the blood donor center, which was developed and is operated by the pathology department; this arrangement is more efficient than adding these cases to the already busy nurses clinics. Unfortunately, this blood is not used for transfusion in the United States; it has safely been transfused in Sweden for three decades.

Whether the total body iron load should be reduced to upper or lower limits of normal and whether iron saturation should also be managed are not known. Our practice at KPSD has been to use the lower limits (ie, serum ferritin level of 20 ng/mL; iron saturation of 20%) as approximate goals. After total body iron load has been reduced to normal levels, phlebotomy is done every two to four months for the remainder of that patient’s life to prevent reaccumulation of excess iron. Excessive phlebotomy (which can create serious iron deficiency) is easily avoided by determining a hematocrit level below which blood will not be drawn.

For all patients with hemochromatosis, we immunize against hepatitis A and B because these pose a threat to the liver, which is probably already damaged; affected patients should also greatly limit alcohol consumption for similar reasons: we also advise these patients against eating raw shellfish because of the increased risk from Vibrio vulnificus in this setting. We advise patients against taking iron supplements and vitamin C because they increase the iron load that must then be removed. Special diets are generally not needed (because the essence of the disease is excessive absorption of iron from ordinary food sources) but have not been carefully studied. Substitution of tea for coffee with meals has the logical advantage of forming insoluble iron tannates in the intestine. Particularly in view of animal studies, we may anticipate an important role for dietary intervention in pediatric cases, especially as increasing numbers of presymptomatic homozygous children are diagnosed through screening.

Deferoxamine may be given daily by intravenous or subcutaneous infusion to treat iron overload from transfusion when intractable anemia does not respond to erythropoietin therapy (ie, where phlebotomy is not appropriate) but is cumbersome, relatively inefficient, and expensive. Under uncommon circumstances, however, it may be the best available approach. Daily intramuscular or subcutaneous injection is also possible, although still less efficient.

Liver transplantation is of course the treatment of last resort for hemochromatosis. Surprisingly, transplanted hemochromatosis cases are not routinely de-ironed before or afterwards. In a similar vein, most explanted livers are never iron stained. Livers containing hepatomas have not been routinely iron stained, including in our organization. But, whereas liver transplantation is currently the final treatment for hemochromatosis, the discovery of the HFE gene makes it realistic that someday gene therapy may be the first treatment. This would make diagnosis at a pre-symptomatic stage, preferably in childhood, all the more appropriate. The fact that the genetic defect manifests itself at intestinal level expectedly will make in vivo gene delivery at easier task.

Education

Education of each patient is particularly important, given the present unfamiliarity of most physicians with hemochromatosis, and the consequent dismissive attitude sometimes taken toward its possible diagnosis. We therefore provide informational materials to newly diagnosed patients for their own protection. Included is a gift videotape in which patients describe the range of their presentations. We also sell each patient a book about iron overload diseases. Useful information is also available on the Internet, both for physicians and for patients.

Family Screening

Diagnosis of hereditary hemochromatosis has two beneficiaries: the patient and the patient’s not-yet-diagnosed relatives. Family screening is therefore important, especially given the hemochromatosis gene frequency, which predicts a 1:8 chance that a homozygote will pair with a heterozygote: half the children of this pair will be homozygotes. The concept of the Index Case has an important application: at KPSD, affected patients’ children and other primary relatives are screened through transferrin saturation testing. We give authorization letters to affected patients for their relatives to take to local clinical laboratories to have appropriate tests done. This important step is conceptually simple but is too often avoided by relatives who are reluctant to contemplate the possibility of a hereditary disorder.

Discussion

Theory vs. Practice

Having discussed the theoretical aspects of disease development, diagnosis, and treatment, we might wonder: what actually happens to people who have hemochromatosis? Most cases are never diagnosed, and some patients with unrecognized disease die prematurely. The few diagnosed cases are often of patients who start treatment but who almost never continue it for their entire lifetime. Virtually none of these patients have their entire fami-
lies screened. Centralized diagnosis, centralized treatment, and institution of a Hemochromatosis Registry have been valuable, easy steps for our organization and provide our KPSD members a service that is infrequently approached elsewhere in the country in quality, usefulness, and cost-effectiveness. In the next few years, as clinicians see more cases of hemochromatosis, its diagnosis will be considered more frequently and more of our estimated 29,000 unidentified cases will be found and given phlebotomy by their own physicians. Screening programs such as the one initiated at KPSD ultimately will identify most cases among our members. We can expect about 40 cases of hemochromatosis in our partner physicians nationwide; Dr. Funke is only the first affected partner identified. Might you be the next? If so, will you be symptomatic or presymptomatic when diagnosed?

Clinical and Economic Benefits of Screening

In 1995, the costs related to hemochromatosis at KPSD were informally studied by a Centers for Disease Control and Prevention (CDC) medical economist who concluded that it costs us $1,100 to diagnose a case. The analysis supposed that neither liver biopsy nor genetic analysis was used as a diagnostic method. Lifetime treatment cost was calculated at $4,400 per patient. In contrast, taking the probability of various outcomes into account, the mean lifetime cost of caring for an undiagnosed case of hemochromatosis was estimated at $46,000.

Even though treating a presymptomatic case of homozygous hemochromatosis prevents all manifestations of iron overload disease (ie, blocks phenotypic expression of the genotype) and presymptomatic cases can be diagnosed only through screening, change will be difficult—especially because most physicians are taught that hemochromatosis is dismissably rare, and multiple recent articles to the contrary have not yet altered this widespread belief. Accordingly, a current argument concerns whether population screening should take place. In 1996, the College of American Pathologists issued a detailed analysis supporting their formal recommendation for universal screening in the U.S. population aged ≥20 years. Adams et al came to a similar conclusion in their detailed cost analysis of screening for hemochromatosis. After a divided meeting, which a news article erroneously reported as supporting screening, the CDC decided to delay decision until “more factual information” was available. This scenario recalls Benjamin Franklin’s comment about how long a useful truth may be known to exist before it is generally known and practiced.

Given the documented prevalence of 1:250 for the homozygous state in European and North American populations, each Permanente physician’s panel probably includes approximately 10 cases. In the ever-increasing KPSD cohort of cases who are homozygous for hemochromatosis at the 845-nucleotide locus, one third are aged ≥65 years and hence have had sufficient time for iron overload to become symptomatic. Of these patients, only 10% have no signs or symptoms attributable to iron overload disease. Thus, most of our members with homozygous hemochromatosis have become symptomatic over time. This conclusion is consonant with the long-term study by Powell et al of 50 homozygotes, of whom 47 accumulated excess iron to the point of overload over sufficient time.

A powerful argument can therefore be made for universal, once-in-a-lifetime screening: Only screening can lead to treatment that prevents phenotypic expression of the genotype. Still uncertain, however, is the age at which screening should be done. If neonatal screening were instituted, genetic analysis would be the only possible tool, and 15% of cases would thereby be missed; if screening were carried out in middle age, the few rapidly fatal adolescent cases would be missed. A reasonable compromise might be to screen patients at age 18 years and designate transferrin saturation of >50% as highly suspect. Were our organization to do this, we would improve the lives of our patients, benefit ourselves economically, and help the nation by setting a trend that urgently needs to be set.

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References
42. Hemochromatosis and iron overload [videocassette] San Diego, CA: Southern California Permanente Medical Group, Department of Preventive Medicine; 1997.
Screening for Hemochromatosis: An Important Opportunity

Commentary by David Baer, MD, FACP
Kaiser Permanente, Oakland

There is abundant justification for the current explosion of interest in hereditary hemochromatosis. Population surveys have confirmed repeatedly that roughly one in 250 individuals of Northern European descent has evidence of an increased propensity to absorb dietary iron (commonly termed hereditary hemochromatosis) and deposit it in vulnerable organs such as the liver, pancreas, heart, and pituitary gland. Furthermore, retrospective reviews strongly suggest that the initiation of phlebotomy therapy before the onset of organ injury can largely prevent adverse outcomes for patients with this condition. An exciting recent development has been the demonstration that a single point mutation (termed C282Y) of the newly cloned HFE gene is responsible for 85 to 90% of cases of hereditary hemochromatosis. The cloning of the HFE gene responsible for 85% to 90% of cases of hereditary hemochromatosis (termed C282Y) of the newly cloned HFE gene is the demonstration that a single point mutation of the newly cloned HFE gene is responsible for 85% to 90% of cases of hereditary hemochromatosis.

The uncertainty surrounding the penetrance of this genetic condition is illustrated by examining our own experience at the Oakland Kaiser Permanente Medical Center. In 1989, we screened 4000 consecutive men for hemochromatosis using the transferrin saturation test. The study population consisted of consecutive men over age 30 who took a routine multiphasic health examination. We concluded, on the basis of liver biopsy results, that 8 of the 4000 had hemochromatosis. Since 7 of the 8 came from among the 2000 white patients in our study sample, we confirmed the prevalence of the disease that had been described by others. However, of the 8 patients we identified, 1 had arthritis but the other 7 were entirely asymptomatic.

All 8 were referred for phlebotomy therapy. Thus, our experience did not address the question: how many of these would have ever developed symptomatic disease had they gone undiscovered and continued to absorb iron for the rest of their lives? A normal individual will shut off the absorption of dietary iron after the accumulation of one or two grams of storage iron so that iron deficiency will develop after only 5 or 10 phlebotomies. (Each unit of phlebotomized blood contains about 200 mg of iron.) Our patient with arthritis was 39 years old and required over 80 phlebotomies to deplete his iron stores, implying that his total body iron load was over 16 grams. However, a 66-year-old man and a 48-year-old man, both asymptomatic, each had ≤ 4 grams of total body iron and a 63-year-old man had 6.5 grams. What would have happened to these patients had they not been discovered and referred for phlebotomy? Felitti reports that 90% of patients with hemochromatosis over the age of 65, diagnosed in the KPSC screening program, had signs or symptoms of iron overload. This is an important and original observation, but it remains to be confirmed by others.

In contrast are the observations of Willis et al who studied the medical records of the Norfolk and Norwich Hospital in Norwich, England, an area with a population of 500,000. They concluded that less than 10% of affected individuals with hemochromatosis will ever manifest symptomatic disease. Is the penetrance only 10% or is it as great as 90%? Does it matter? One could argue that a once-in-a-lifetime hemochromatosis screen could be justified even if only 10% of individuals with this common, inherited condition were to have potentially preventable tragic outcomes like Dr. Funke.

Another issue is the possibility of genetic discrimination. Might patients labeled with a genetic condition be refused health or life insurance or even employment opportunities? This concern over discrimi-
nation based on genetic diagnoses has taken a prominent place in our national debate. With this potential “adverse effect” in mind, ought we to seek specific consent before testing a patient for hemochromatosis, or should such a test be regarded as similar to a fasting glucose or serum cholesterol test?

If a consensus could be achieved over the need to introduce universal screening for hemochromatosis, important decisions would still have to be made regarding the optimal method of screening. Should HFE mutational analysis, in either a confirmatory role or even perhaps as a primary screen, be part of the screening approach? Do we know enough about iron overload in African Americans, Hispanics, or other non-Northern European groups to justify designing a screening program that will look at these persons? Do we know how to screen for iron overload in these patients even if we wanted to? What is the optimal way to handle patients incidentally found to have possible iron deficiency during a screen for iron overload? There is much to learn about all of these important questions.

What about the costs associated with a screening program? Dr. Felitti’s estimates are based on several very favorable assumptions that need to be confirmed in other settings over time. Will others be able to operate with the same efficiencies that his centralized, preventive health program in San Diego has been able to achieve? If his estimates of penetrance are too high, perhaps his calculation of cost savings may be too optimistic.

The expenses of any screening program would be greatly reduced and the overall social benefit would be increased if patients with hemochromatosis could donate their blood for therapeutic use. The expenses of any screening program would be greatly reduced and the overall social benefit would be increased if patients with hemochromatosis could donate their blood for therapeutic use.

References
Acute perforations of peptic ulcers continue as one of the real emergencies of surgery which require immediate attention and prompt operation.

Incidence

During the past fourteen months 31 patients with perforated peptic ulcers were treated at the Permanente Foundation Hospital. As indicated in Table 1, 28 patients (90.4 percent of this group) were treated surgically, with no fatalities. Three patients (9.6 percent) were treated non-operatively, with two deaths and a resultant mortality of 66.6 percent. Although our series is relatively small, several factors are revealed which may account for the absence of operative mortality.

For comparison, Table 2 lists several reported series of perforated peptic ulcers and their respective operative mortality incidence. The operative mortality rate as shown in the large series collected by DeBakey of 23.4 percent can be considered as an average. The low mortality rate in the 51 cases presented by Graham is in a group of cases that were operated within an average of seven hours from the time of perforation, and in which a simple operative procedure was used. As will be shown later, this time interval is probably the most important single controllable factor which can reduce the operative mortality incidence in acute perforated peptic ulcers.

During the year from September 1, 1942, to September 1, 1943, there were 22 patients with acute perforated peptic ulcers among the 3516 admissions to this hospital; that is an incidence of one patient with peptic ulcer perforation for every 160 hospital admissions. During the same interval there was an average of 57,940 members of the Health Plan. This indicates an incidence of one patient with a perforated peptic ulcer to every 2633 members (or of worker population) per year.

The incidence per hospital admission of patients with perforated peptic ulcers in this group of cases is considerably higher than that of other series presented in Table 3. It is suggested that the possible increased strain placed on the men due to anxiety, poorer eating habits, irregular and abnormal working hours, which are a result of the war, may at least account for part of the increased incidence. It was shown during the famine in Russia that the incidence of ulcer perforation was increased ten-fold. In two series reported by Riley and Stewart and Winsor, there has been noted an increase in the number of peptic ulcer perforations in London since the onset of the war. Chamberlin and Wallace reported an increased incidence of relapses in patients with peptic ulcers while in the Army.

All of the patients in this series were males; one was a Negro, the remainder were Caucasian. Large series show the incidence in females to be 7 percent in comparison to 93 percent in men.

Fifty-five percent of the patients with perforated peptic ulcers were between 40 and 60 years of age; 90 percent were between 30 and 60 years of age. The patients in our series definitely fall into an older age group, which have an associated higher mortality rate. A large series of 4137 case histories with perforation collected by DeBakey had a fairly constant mortality rate of 15 to 19 percent in patients up to 40 years of age, and then showed a definite increase of 10 to 15 percent mortality for each additional decade up to 70 years of age.

Two-thirds of the patients in this series were married. One-half were moderate or heavy drinkers of alcoholic beverages, one-fourth maintained very irregular eating habits, and one-half of the patients admitted to this hospital; that is an incidence of one patient with perforated peptic ulcer to every 2633 members (or of worker population) per year.

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Table 1. Analysis of operated and non-operated cases

<table>
<thead>
<tr>
<th></th>
<th>Number of cases</th>
<th>Percent of cases</th>
<th>Number of deaths</th>
<th>Percent mortality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operated</td>
<td>28</td>
<td>90.4</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Non-operated</td>
<td>3</td>
<td>9.6</td>
<td>2</td>
<td>66.6</td>
</tr>
<tr>
<td>Total</td>
<td>31</td>
<td>100.0</td>
<td>2</td>
<td>6.4</td>
</tr>
</tbody>
</table>

Table 2. Operative mortality statistics in perforated peptic ulcers

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of cases</th>
<th>Percent mortality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ross and Lefortieux (Canada)</td>
<td>1924-38</td>
<td>228</td>
</tr>
<tr>
<td>Harrison-Cooper (Vanderbilt Univ. Hosp.)</td>
<td>1925-40</td>
<td>57</td>
</tr>
<tr>
<td>R. R. Graham (Toronto)</td>
<td>1929-35</td>
<td>51</td>
</tr>
<tr>
<td>Thompson (Los Angeles)</td>
<td>1921-34</td>
<td>424</td>
</tr>
<tr>
<td>Henry (Detroit)</td>
<td>1939-42</td>
<td>179</td>
</tr>
<tr>
<td>Sallick (United States series)</td>
<td>1934</td>
<td>74</td>
</tr>
<tr>
<td>Sallick (European series)</td>
<td>1934</td>
<td>3121</td>
</tr>
<tr>
<td>Elason (collected series)</td>
<td>1940</td>
<td>1940</td>
</tr>
<tr>
<td>DeBakey (charity hospital)</td>
<td>1940</td>
<td>209</td>
</tr>
<tr>
<td>DeBakey (collected series)</td>
<td>1940</td>
<td>15340</td>
</tr>
<tr>
<td>Permanente Foundation Hospital</td>
<td>1942-43</td>
<td>28</td>
</tr>
</tbody>
</table>

From the Department of Surgery, Permanente Foundation Hospital, Oakland, California
The interval from time of perforation to time of operation is probably the most important controllable single factor which can diminish the mortality in perforated peptic ulcers.

Table 3. Incidence of perforated peptic ulcers per hospital admissions

<table>
<thead>
<tr>
<th></th>
<th>Number of patients</th>
<th>Hospital admissions</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barber and Madden (yearly average, 5 years)</td>
<td>15</td>
<td>3821</td>
<td>1:210</td>
</tr>
<tr>
<td>Berson (New York) (total) (highest)</td>
<td>154</td>
<td>132115</td>
<td>1:858</td>
</tr>
<tr>
<td>(lowest)</td>
<td>5125</td>
<td>1:400</td>
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</tr>
<tr>
<td>8684</td>
<td>1:2070</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DeBakey (charity hospital) (10 years)</td>
<td>211</td>
<td>544801</td>
<td>1:2582</td>
</tr>
<tr>
<td>DeBakey (collected series)</td>
<td>1290</td>
<td>1479445</td>
<td>1:1264</td>
</tr>
<tr>
<td>Permanente Foundation Hospital (1 year)</td>
<td>22</td>
<td>3516</td>
<td>1:160</td>
</tr>
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</table>

Table 4. Incidence of peptic ulcer perforations according to age of patient

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>Operated patients</th>
<th>Non-operated patients</th>
<th>Percent of cases</th>
<th>Number of deaths</th>
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</thead>
<tbody>
<tr>
<td>20-30</td>
<td>2</td>
<td>31</td>
<td>6.4</td>
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<tr>
<td>30-40</td>
<td>11</td>
<td>86</td>
<td>35.5</td>
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<tr>
<td>40-50</td>
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<td>50-60</td>
<td>6</td>
<td>26</td>
<td>25.8</td>
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<tr>
<td>60-70</td>
<td>0</td>
<td>16</td>
<td>3.2</td>
<td>1</td>
</tr>
</tbody>
</table>

Symptomatology and Diagnostic Procedures

As to previous ulcer symptoms of the 28 operated patients, 18 percent manifested no symptoms up to the time of perforation, 28 percent had mild symptoms for the previous few hours or few days; the remaining 54 percent showed moderate or severe symptoms for from three months to fifteen years previous to the time of perforation.

The onset of the initial acute symptoms in every case was very sudden with either a stabbing, tearing, or “doubling-up” epigastical pain. Only three patients, who were seen seven and one-half hours, nine, and twelve hours following the onset of severe symptoms were fairly comfortable when admitted. About 25 percent of the patients complained of severe shoulder or neck pain. Except in two instances, the almost pathognomonic “board-like” abdomen was invariably present. Vomiting occurred in one-half of the patients; markedly diminished or absent peristalsis was present in all.

The admittance temperature varied from 97.2 to 100 degrees (F), the majority averaging 98.6 degrees (F). Except in two patients, the admittance pulse rate was under 100 per minute. The respiratory rate on admission varied from 20 to 26 per minute. The blood pressure was within normal range in all but one patient with hypertensive heart disease.

The laboratory studies on admittance revealed the hemoglobin to vary from 62 percent to 114 percent; in two-thirds of the patients the hemoglobin was above 90 percent. The leukocyte count varied from 15,000 to 25,000 cells per cubic millimeter in 60 percent of the patients; the highest was 32,200 and the lowest 5000 cells per cubic millimeter. The percent neutrophil count was above 80% in 64 percent of the patients and was between 50 and 70% in 19 percent of the patients; the highest was 94 percent neutrophils and the lowest 57 percent. The percent stab cell count was below 10% in one-fourth of the patients, and between 20 and 40 percent in one-half of the patients; the lowest was 2 percent and the highest was 43 percent. Of interest are two patients whose leukocyte count changed from 12,900 to 16,850 cells per cubic millimeter, and from 5000 to 22,000 cells per cubic millimeter in a two-hour period.

Surgical Management

The interval from time of perforation to time of operation is probably the most important controllable single factor which can diminish the mortality in perforated peptic ulcers. Sixty percent of our patients were operated within six hours of the time of perforation (Table 5), and 94 percent were operated...
within twelve hours from the time of perforation. An analysis of the relationship between mortality rate and the interval between the time of ulcer perforation and time of surgery is shown in Table 5.

A study of Table 6 reveals that the mortality incidence doubles for every six-hour period from the time of perforation to the time of surgery; after twenty-four hours the mortality rate is maintained at the high rate of over 60 percent. Prompt diagnosis and immediate surgery is indicated.

At surgery the perforation was found to be in the duodenum in 18 patients. Ten patients had gastric ulcer perforations, which were demonstrated to be in the pylorus in three patients, in the prepyloric region in two patients, and in the fundus in five patients. The ratio of duodenal to gastric ulcer perforations of 2:1 is similar or slightly lower to that reported in most series of perforated gastroduodenal ulcers. All perforation sites were anterior in location. In two-thirds of the patients the size of the perforation was from 1 to 3 millimeters in diameter. The diameter of the area of surrounding induration varied from 1 to 3 centimeters. In only one-fourth of the patients was there a small quantity of gastroduodenal contents free in the peritoneal cavity.

Spinal anesthesia seems to be the favored anesthetic by the majority of surgeons for patients with perforated peptic ulcers and was used in all but two of the operated patients in this series.

A simple closure of the site of perforation was performed in all of the patients. In 23 patients the site of perforation was closed with Lembert sutures, and omentum was fixed to the suture line. In five patients the perforation was not closed, and omentum only was placed over the site of perforation and held with interrupted sutures. Cotton sutures No. 40 were used throughout in the majority of instances. In all except two patients, sulfonamides were used intraperitoneally. Ten grams of sulfathiazole were distributed intraperitoneally, and five grams were placed in the abdominal wound. No drains were used in the peritoneal cavity or wound.

We feel that a simple procedure should be the one of choice for an emergency operation, and not an extensive radical operative procedure as is favored by many European surgeons. Extensive procedures should be reserved specifically for well-trained gastric surgeons, and then only in selected patients. Our follow-up studies, and those of other series, indicate that good results are obtained with simple procedures.

Graham in his series of 51 patients with a low mortality incidence of 1.9 percent does not close the site of perforation but merely sutures omentum over the defect. We have used a similar technique in our last five patients with excellent results. Several of these have had follow-up gastro-intestinal series and show the usual deformity found in the patients in which the perforation was closed with Lembert sutures. This technique should be favored in pyloric and duodenal perforations with marked surrounding induration.

Smears and cultures were taken of the peritoneal contents of seven patients at the time of surgery. Almost one-half of the cultures were positive, and all were taken within nine hours from the time of perforation (see Table 7).

According to series collected by DeBakery, Graham, and Henry, it would seem that during the first six to twelve hours the peritoneal cultures will frequently be sterile, whereas after twelve hours they will probably be positive. When positive cultures were obtained, their series indicated that the mortality rate greatly increased.

**Postoperative Management**

The main factors in the postoperative treatment consisted of the immediate installation of a Wangensteen type of suction, and the administration of intravenous fluids fortified with vitamins. This was continued for two to three days or until there was less than 150 cubic centimeters of gastric residue after four hours trial without gastric suction. The following routine was then followed: on date of removal of the indwelling tube, the patient was given 1 ounce of water every hour; the day following he was given 2 ounces of water every hour in the morning, and 3 ounces in the afternoon; to this on the following day was added a coddled egg in the morning, and a baked potato in the afternoon; and finally on the next postoperative day he was fed six small feedings a day of a gastro-enterostomy diet which consisted mainly of soft solids, rather than liquids.

<table>
<thead>
<tr>
<th>Table 5. Interval from time of perforation to time of operation</th>
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</thead>
<tbody>
<tr>
<td></td>
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<tr>
<td>0-3</td>
</tr>
<tr>
<td>3-6</td>
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<tr>
<td>6-0</td>
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<tr>
<td>6-9</td>
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<tr>
<td>9-12</td>
</tr>
<tr>
<td>6-12</td>
</tr>
<tr>
<td>12-15</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>
clinical contributions

During the time the gastric suction was functioning, 2.5 grams of sodium sulfadiazine were given intravenously three times per day. Following removal of the gastric suction, 2 grams of sulfadiazine were administered orally every six hours until the patient's temperature had remained at normal for one to two days. The blood sulfadiazine concentration was usually maintained at from 10 to 14 milligrams per hundred cubic centimeters.

The average highest temperature was 101 degrees (F) to 102 degrees (F). A normal temperature was usually maintained after the sixth to tenth postoperative day. The average highest pulse rate was 116 to 130 per minute and was usually maintained at normal values after the eighth to tenth postoperative day. The average highest respiratory rate was 30 per minute, and the normal rate was usually maintained after the fifth to seventh postoperative day.

The majority of patients were dismissed from the hospital on the fourteenth postoperative day. One remained in the hospital thirty-five days due to a subphrenic abscess. Wound infections developed in four patients, one of which remained in the hospital twenty-five days; the other three had only slight purulent drainage and were dismissed on the fourteenth postoperative day. Postoperative atelectasis occurred in two patients, bronchopneumonia in two patients, and an exacerbation of hyperthyroidism occurred in one patient. Pulmonary complications and peritonitis should be recognized early and guarded against as they account for 75 percent of the causes of death and 60 percent of the complications. The average highest temperature was 101 degrees (F) to 102 degrees (F). A normal temperature was usually maintained at 116 to 130 per minute and was usually maintained at normal values after the eighth to tenth postoperative day. The average highest pulse rate was 116 to 130 per minute and was usually maintained at normal values after the eighth to tenth postoperative day. The average highest respiratory rate was 30 per minute and was usually maintained at normal values after the eighth to tenth postoperative day.

During the interval from discharge to follow-up the patients were maintained on a diet of bland nourishment, and were advised against the ingestion of alcohol and the smoking of tobacco. After dismissal the patients were maintained on a diet of bland nourishment for six months. The ingestion of alcohol and the smoking of tobacco were advised against.

Follow-up Studies

Only one of 25 patients, who have been followed for one to twelve months postoperatively, has had a recurrence of any ulcer symptoms.

In 19 patients upper gastro-intestinal roentgenologic studies were performed after a postoperative interval varying from two to twelve months. Seven patients were examined two to six months postoperatively, and 12 patients were studied six to twelve months postoperatively. All of these patients showed a deformity of the duodenal cap, suggesting old submucosal fibrosis.

Table 6. Mortality rate according to interval from time of perforation to time of surgery

<table>
<thead>
<tr>
<th>Time interval</th>
<th>Number of cases</th>
<th>Number of cases</th>
<th>Percent mortality</th>
<th>Number of cases</th>
<th>Percent mortality</th>
<th>Number of cases</th>
<th>Percent mortality</th>
<th>Number of cases</th>
<th>Percent mortality</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-6 hours</td>
<td>86</td>
<td>35</td>
<td>0.0</td>
<td>39</td>
<td>18.0</td>
<td>9</td>
<td>33.3</td>
<td>1</td>
<td>0.0</td>
</tr>
<tr>
<td>7-12 hours</td>
<td>146</td>
<td>57</td>
<td>5.2</td>
<td>48</td>
<td>74.2</td>
<td>10</td>
<td>70.0</td>
<td>47</td>
<td>65.0</td>
</tr>
<tr>
<td>13-18 hours</td>
<td>425</td>
<td>130</td>
<td>21.5</td>
<td>168</td>
<td>22.0</td>
<td>30</td>
<td>70.0</td>
<td>47</td>
<td>65.0</td>
</tr>
<tr>
<td>19-24 hours</td>
<td>167</td>
<td>48</td>
<td>29.1</td>
<td>152</td>
<td>21.7</td>
<td>10</td>
<td>60.0</td>
<td>6</td>
<td>75.0</td>
</tr>
<tr>
<td>24-48 hours</td>
<td>329</td>
<td>163</td>
<td>23.9</td>
<td>2999</td>
<td>10.5</td>
<td>1830</td>
<td>21.4</td>
<td>179</td>
<td>38.5</td>
</tr>
<tr>
<td>Over 48 hours</td>
<td>28</td>
<td>18</td>
<td>0.0</td>
<td>8</td>
<td>0.0</td>
<td>2</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>
nal ulcer. In none were there roentgenographic signs of activity of the ulcer. All had a normal gastric emptying time of within four hours. Two patients manifested a marked duodenal narrowing; in one a duodenal perforation had been repaired three months previously, and in the other a pyloric perforation had been repaired eleven months previously. Each of two patients, one four months and the other twelve months postoperatively, showed a pre-pyloric and duodenal roentgenographic deformity. Other series have reported similar findings.

In 13 patients gastric analyses were performed from two to twelve months postoperatively. Using the figures presented by Gradwohl as the normal, free gastric acidity ranges from 40 to 70 degrees. The following are noted in Table 9: of the 11 patients with duodenal perforations, 8 were normal, 2 low, and 1 was high in free gastric acidity; in regards to total acidity, 7 were normal, 3 low, and 1 was high. One patient with a duodenal ulcer had a complete absence of free acid and a very low total acidity.

The patients with pyloric and prepyloric perforations showed normal gastric acidity.

Non-operative Patients

Of the three patients who were not operated upon, two were admitted to the hospital in severe shock, and contemplation of surgery was impossible. The ulcer in one had been perforated for eleven hours, and the patient expired eight hours following admittance. The ulcer in the other had been perforated seventy-two hours, and the patient expired twelve hours following admittance. The ulcer in the third non-operative case had been perforated sixteen hours previous to admittance. The symptoms were subsiding, the clinical findings were only moderately severe, roentgenograms showed the presence of pneumoperitoneum, and the patient was quite comfortable. It was concluded that the perforation was well walled off by omentum, and he was voluntarily treated non-operatively. Sulfadiazine and other postoperative treatment previously mentioned was carried out, and an uneventful recovery was made by the patient.

Conclusions

A prompt correct diagnosis and immediate surgery is of prime importance in a patient with a perforated peptic ulcer. The mortality rate increases with the length of interval between the time of ulcer perforation and time of surgery. Roentgenographic studies in the upright and left lateral decubitus position should be performed to demonstrate a pneumoperitoneum.

A simple operative procedure should be used, preferably only the fixation of omentum without any attempt to close the site of perforation in patients with perforated pyloric and duodenal ulcers. Sulfathiazole should be used intraperitoneally and in the abdominal wound at the time of surgery, and sulfadiazine should be given intravenously following surgery. Sulfadiazine may also be of value if given intravenously before surgery.

Every attempt should be made to prevent complications, especially peritonitis and pulmonary conditions which together account for about 75 percent of deaths in perforated peptic ulcers.

Non-operative treatment should be rendered in perforated peptic ulcers only (1) when the patient shows definite signs of improvement both symptom-
At clinically and clinically, and there is a definite “walling off” of the ulceration, or (2) when the patient’s condition is too poor to permit operation.

We believe that our absence of operative mortality can be accounted for by the observation of the above controllable factors in patients with perforated peptic ulcers. The recurrence of symptoms in patients operated upon for perforated peptic ulcers was infrequent. Gastric acidity rapidly returned to normal following operation. Follow-up gastro-intestinal roentgenograms showed a persistent deformity at the site of perforation suggesting scarring or a chronic gastroduodenal ulceration.

Summary
A review of 31 patients with perforated peptic ulcer treated at the Permanente Foundation Hospital revealed the following:

1. The operative mortality rate was zero percent in 28 operated patients.
2. The non-operative mortality rate was 66.6 percent in three patients treated without surgery.
3. The incidence of perforated peptic ulcer is 1 for every 160 hospital admissions. The incidence in the general worker population is 1 for every 2633 persons per year.
4. All of the perforations occurred in males.
5. Fifty-five percent of the patients were between 40 and 60 years of age; 90 percent were between 30 and 60 years of age.
6. Eighteen percent of the patients had no symptoms previous to the time of perforation.
7. Roentgenography revealed the presence of a pneumoperitoneum in two-thirds of patients.
8. Of the 28 patients with perforated peptic ulcers proven by surgery, 26 were diagnosed as such preoperatively.
9. Sixty percent of the patients were operated upon within six hours of the time of perforation, and 94 percent were operated upon within twelve hours of the time of perforation.
10. Perforations of the duodenum were twice as frequent as those of the stomach.
11. A simple closure of the site of perforation was performed in every patient.
12. Sulfathiazole was used intraperitoneally and in the abdominal wound during surgery, and sulfadiazine intravenously following surgery.
13. Ten postoperative complications occurred.
14. Only one of the operated patients had a recurrence of ulcer symptoms.

Table 9. Postoperative gastric analyses

<table>
<thead>
<tr>
<th>Site of perforation</th>
<th>Months post-operative</th>
<th>Gastric acidity (degrees)</th>
<th>Fasting</th>
<th>60 minutes after alcohol meal</th>
<th>60 minutes after histamine</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Free</td>
<td>Total</td>
<td>Free</td>
</tr>
<tr>
<td>Duodenum</td>
<td>2</td>
<td>0</td>
<td>13</td>
<td>15</td>
<td>26</td>
</tr>
<tr>
<td>Duodenum</td>
<td>2</td>
<td>38</td>
<td>50</td>
<td>98</td>
<td>110</td>
</tr>
<tr>
<td>Duodenum</td>
<td>4</td>
<td>0</td>
<td>5</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>Duodenum</td>
<td>6</td>
<td>25</td>
<td>38</td>
<td>30</td>
<td>43</td>
</tr>
<tr>
<td>Duodenum</td>
<td>6</td>
<td>0</td>
<td>8</td>
<td>18</td>
<td>30</td>
</tr>
<tr>
<td>Duodenum</td>
<td>6</td>
<td>0</td>
<td>9</td>
<td>7</td>
<td>23</td>
</tr>
<tr>
<td>Duodenum</td>
<td>9</td>
<td>70</td>
<td>83</td>
<td>75</td>
<td>83</td>
</tr>
<tr>
<td>Duodenum</td>
<td>9</td>
<td>17</td>
<td>36</td>
<td>11</td>
<td>27</td>
</tr>
<tr>
<td>Duodenum</td>
<td>11</td>
<td>42</td>
<td>58</td>
<td>52</td>
<td>68</td>
</tr>
<tr>
<td>Duodenum</td>
<td>12</td>
<td>0</td>
<td>10</td>
<td>4</td>
<td>15</td>
</tr>
<tr>
<td>Duodenum</td>
<td>12</td>
<td>0</td>
<td>16</td>
<td>34</td>
<td>49</td>
</tr>
<tr>
<td>Pylorus</td>
<td>3</td>
<td>7</td>
<td>20</td>
<td>29</td>
<td>54</td>
</tr>
<tr>
<td>Prepylorus</td>
<td>11</td>
<td>0</td>
<td>8</td>
<td>41</td>
<td>51</td>
</tr>
</tbody>
</table>

Bibliography
Perforated Peptic Ulcer
Commentary by Paul Smith, MD; Kaiser Permanente, Oakland

Despite the decline in peptic ulcer disease in this country and Western Europe over the past 30 years, the incidence of its complications remains much the same. The decline started before the advent of Histamine #2 Receptor Antagonists (H2RA). The incidence of perforation remains in the range of 5% to 10%, and the associated mortality is still approximately 10%.

Perforation constitutes a serious surgical emergency. Although some have advocated nonoperative therapy, urgent operative intervention after adequate resuscitation is the appropriate treatment for all but a few carefully selected patients. Of all aspects of surgical management, time from onset of perforation to time of operation remains the most important.

In Nannini's study from over 50 years ago, at the Permanente Foundation Hospital, Oakland, 31 patients were treated for perforated gastroduodenal ulcer: 28 patients were treated operatively with no mortality, and 2 deaths occurred among 3 patients treated nonoperatively. Of the 28 patients, Nannini described 10 as having gastric ulcer. According to current definition, an ulcer within 3 cm proximal to the pylorus behaves as a duodenal ulcer and should be treated as such; by this definition, Nannini, in fact, treated 23 duodenal ulcers and 5 gastric ulcers.

Because of the small numbers, the mortality rate in Nannini's series should not be compared to the larger studies, either of his era or our own. Nevertheless, Nannini's paper has much to teach us to this day. Clinical presentation and diagnosis are much the same. Based on his careful analysis, Nannini's chief observation that early surgery saves lives is astute. Table 2 shows relative mortality in perforated peptic ulcer as reported in several contemporaneous studies. Table 6 shows that the timing of operation is related to mortality.

The vastly superior intensive care given today and the availability of antibiotics have in no way changed the objective: early treatment within the timeframes suggested by Nannini.

The vast area of major change in management in this country between the 40s and today is the role of definitive surgery. Before definitive surgery is undertaken, three criteria should be satisfied: The patient should be able to tolerate the procedure with no added risk; the procedure should add excellent protection against recurrent ulceration; and undesirable long-term sequelae should be minimal. Many surgeons would add to this list the criterion that the ulcer must be chronic.

Long-term follow-up after simple closure has shown a recurrent ulcer rate of almost 80%. Griffin and Ornan have confirmed that simple closure carries with it a very high chance of poor long-term outcome: In this study of 122 patients, 48% either suffered death from complications of recurrent ulcer, required further surgery for ulcer disease, or required ongoing medical treatment for recurrent ulcer.

These studies were published before the advent of H2RA, and we might wonder whether simple closure combined with a lifetime use of H2RA would be effective therapy. This possibility has been examined and presents two problems. First, compliance with long-term drug therapy is variable; second, such treatment is considerably more costly than effective definitive surgery. The role of definitive surgery has been studied extensively, and I shall brief try to place it in perspective.

Three procedures are practiced most commonly: truncal vagotomy with pyloroplasty, proximal gastric...
vagotomy with patch omentoplasty, and truncal vagotomy with distal gastrectomy. Proximal gastric vagotomy is also known as parietal cell vagotomy and as highly selective vagotomy. The surgical literature of the past two decades is replete with excellent studies showing that these procedures meet all the aforementioned criteria for definitive surgery. Selecting the appropriate definitive operation is beyond the scope of the article, and readers may refer to any of many excellent studies to help form an opinion.

Perforation of an acute ulcer, as opposed to a chronic ulcer, is widely believed to be best treated by simple closure and in this situation, definitive surgery is considered too aggressive. However, at laparotomy, to conclude that perforation has occurred in an acute ulcer is subjective. It is certainly appropriate to practice simple closure of a perforated duodenal ulcer that "looks acute," in a patient who denies previous symptoms and who has not been taking nonsteroidal anti-inflammatory agents (NSAIDS).

However, Boey et al8 have shown that after 5 years of follow-up, perforated ulcers, both acute and chronic, which were treated by simple closure, in fact have a recurrence rate of approximately 50%. This certainly gives credence to the use of definitive surgery for acute ulcer perforation.

Today, the question of safely performing a definitive surgical procedure for perforation has more to do with surgical experience and skill than anything else. A good gastric surgeon using good judgment can perform definitive surgery whose mortality rate is less than 2%. In contrast, few surgical residents graduating from programs in this country today—and indeed, in the past 15 years—have been adequately trained in elective ulcer surgery. The cohort of surgeons competent to perform this surgery is diminishing yearly.

To this reviewer, the correct conclusion regarding perforated duodenal ulcer seems clear: Definitive surgery is safe and effective, when done by a well-trained gastric surgeon, but use of the Graham patch remains the standard of care today as it was for Nannini 50 years ago.

Compared with duodenal ulcer, gastric ulcer is less common and has a higher rate of mortality when perforation occurs. One study showed a mortality rate of 29% among 128 patients treated with simple closure and 11% among 53 patients treated with gastrectomy. All 10 patients who were treated medically—and who were presumably the sickest patients—died. The mortality rate was 53% among patients who were in preoperative shock. The same predictive factors apply to definitive surgery, and in general, Billroth I gastrectomy is the preferable operation. If definitive surgery is not done, excision of the ulcer to rule out malignancy is strongly recommended.

This brief review of perforated gastroduodenal ulcer disease gives a short historical perspective and reasonable options for surgical management today. Reviewing Dr. Nannini's paper I am reminded of the words of Isaac Newton: "If I have seen further ... it is by standing upon the shoulders of Giants."

Acknowledgment: Michael Udkow, MD, Division of Gastroenterology, Department of Internal Medicine, Kaiser Permanente Medical Center, Oakland reviewed the manuscript.

References
Incidence of Atopic Dermatitis and Eczema by Ethnic Group Seen Within a General Pediatric Practice

Background: Genetics is believed to be a factor in the pathogenesis of atopic dermatitis and eczema. Few reports have described the prevalence of atopic dermatitis and eczema by ethnic group.

Objective: Our objective was to explore, by ethnicity, the prevalence of atopic dermatitis and eczema within a large, general pediatric practice.

Methods: From a database of all patients entering the practice, were diagnoses determined according to standard published criteria. Diagnoses were retrospectively reviewed for all patients whose ethnicity was recorded in the database.

Results: Prevalence of atopic dermatitis was 3.2% in the overall population. This varied as follows: 3.7% among blacks, 8.5% among Filipinos, 2.0% among Hispanics, 2.8% among whites (not Hispanic), 3.2% among mixed races, and 5.6% among other Asians. The Filipinos had a higher prevalence of atopic dermatitis and eczema (p < 0.01 vs. all others).

Conclusion: In this study, Filipino patients appeared to be at much higher risk for development of atopic dermatitis. In contrast, considerable ethnic variation occurs in the prevalence of atopic dermatitis and eczema in the general population.

Atopic dermatitis and eczema are commonly seen in general pediatric practice. As many as 39% of all skin disorders in children aged <5 years are diagnosed as eczema. Review of the biomedical literature in English suggests important genetic influences on the genesis of atopic dermatitis and eczema. British authors particularly have noted a high incidence of eczema in patients of Jamaican heritage.

Because few studies have attempted to establish the prevalence of pediatric atopic dermatitis and eczema, we sought to do so by reviewing the medical records of patients seen in a general pediatric practice.

Materials and Methods

The Kaiser Permanente (KP) pediatric practice chosen for the study is located in a suburban area of San Diego and serves a predominantly middle-income population. Approximately 45% of the community is Hispanic (predominantly Mexican), 27% is white (not of Hispanic origin), 10% Filipino, 13% black; other ethnic designations represent 5% of the community.

A computerized database using Filemaker Pro (Claris Corporation, Santa Clara, California) is maintained to track patients seen within the practice. We retrospectively reviewed the records in this database for the keywords “atopic dermatitis” and “eczema.” All patients had been seen by a single observer (the author), a general pediatrician.

Definitions

All diagnoses of eczema and atopic dermatitis were made using the definitions suggested by Sweet and Sampson.

As defined by Sweet, eczema is “an irritating papular eruption, focal or diffuse, which may become exudative, crusted, scaly, or lichenified and which may be expected at some stage to show spongiosis with superficial vasodilatation and lymphocytic infiltration, no matter where on the body it occurs or what may have contributed to its cause.”

All patients diagnosed as having atopic dermatitis met Sampson’s three major criteria for atopic dermatitis: family history of atopic disease; typical facial or extensor eczematous or lichenified dermatitis; and evidence of pruritus. These patients also met Sampson’s three minor criteria for atopic dermatitis: of postauricular fissures; chronic scaling of the scalp; and xerosis, ichthyosis, or hyperlinear palms.

The observer consistently applied Sweet’s and Sampson’s criteria to all patients treated during the enrollment period, 1996-98.

Statistical Analysis

A chi-squared test was used to calculate a p value of <0.01 for the hypothesis that the Filipino population had a higher prevalence of atopic dermatitis and eczema than all others.

Results

Ethnic data were available for 5912 patients in the study population. Ethnicity was designated as white (not of Hispanic origin), Hispanic, black, Filipino, other Asian, or mixed race (Table 1).

The prevalence of atopic dermatitis was determined to be 3.2% in the overall study population (Table 2). 3.7% of whom were black, 8.5% Filipino, 2.0% Hispanic, 2.8% white (not of Hispanic origin), 3.2% mixed race, and 5.6% other Asian origin.

Discussion

Prevalence of these diseases by ethnic group showed marked variation, ranging from a high of 8.5% (in Filipino patients) to a low of 2.0% (in Hispanic patients.
Ethnic differences have been described by British authors, and Williams et al. described a prevalence of 16.3% in black children of Caribbean origin and 8.7% in white (not of Hispanic origin) children. Palacios et al. postulated polygenic inheritance, and also cited a 13.6% prevalence in white (not of Hispanic origin) and a 10.5% prevalence in black patients attending a dermatology and allergy clinic. Discussions between this author (R.B.B.) and US Navy physicians who served in the Philippines support our observation that a high prevalence of atopic dermatitis and eczema is commonly seen in the Philippines.

The data are possibly flawed inasmuch as all ages are grouped into one data set. Atopic dermatitis is known to have a peak incidence in early infancy and then to abate in children younger than 5 years. The data probably underrepresent the prevalence in that age group because patients aged up to 18 years may enter the practice.

Because this study was conducted by only one physician in a limited geographic area, we cannot assume that the population studied typically represents the overall Filipino population in the United States or in the Philippines; the actual prevalence of atopic dermatitis and eczema probably varies considerably by geographic area. Moreover, the population served by our pediatric clinic is not ethnically representative of the overall US population. In particular, although we observed a higher prevalence of eczema and atopic dermatitis among patients of "other Asian" origin, this group included too many subsets for separate analysis (ie, Japanese, Korean, Chinese, Lao, Vietnamese, Cambodian, and other ethnic groups were included).

In advising their patients, physicians serving populations known to be at high risk for atopic dermatitis and eczema should find the information presented here useful.

Acknowledgment: Girma Wolde-Tsadik, PhD, and Janis Yao, MS, provided statistical assistance.

References
The Herbal Medicine Pharmacy: What Kaiser Permanente Providers Need to Know

Consumer use of herbal remedies in the United States is growing rapidly. As a result, many patients seen for routine or urgent care evaluation take herbal medication but might not inform their physician of this intake. Federal agencies do not evaluate herbal products and the Dietary Supplement Health and Education Act of 1994 defines herbal medications as dietary supplements. Patients may thus be misled into believing that herbal medicines are safe and effective. Although some herbal products have been anecdotally described as effective—and thus may be useful in treating some medical conditions for which traditional forms of therapy are contraindicated—many herbal products are toxic and should not be consumed.

This paper reviews several herbal and nutrient supplements that are most commonly used by consumers in the US. Physicians should determine whether their patients are taking herbal medicines and then carefully review the side effects of these substances so that patients can be alerted to potential problems.

Background

In November 1997, the American Botanical Council released the first English translation of the German Commission E Monographs on Medical Plants for Human Use,1 a modern authoritative guide to over 300 biomedical remedies. Defining herbal medicines as dietary supplements, the 1994 Dietary Supplement Health and Education (DSHE) Act2 expanded Americans' access to herbal remedies, and in 1996, Americans spent more than $2 billion on herbal remedies.3 A recent statistical survey estimated that one third of all Americans use some form of alternative medicine.4

Many herbs may be useful as supplements and work well with many of the treatments used by physicians. However, not all physicians have necessarily kept up with recent advances and publications on this issue. In addition, many consumers who hear about the purported benefits of herbs from television, the Internet, or other sources, try these herbs before seeing the doctor. This sequence of events may fail to provide patients with the information they need for using herbal products safely.

This paper focuses on the herbs most commonly used in the community and discusses some herbs which may cause serious side effects and thus should be used with extreme caution. Information presented in this paper represents the result of literature review and should be used at reader's discretion. It must be remembered that herbal supplements today can be marketed with suggested dosages and are not subject to mandatory premarket scrutiny by any US governmental agency as to safety and efficacy. Most herbs are not manufactured in a standardized fashion and are not approved by the US Food and Drug Administration (FDA). Companies that market herbal remedies that have not been evaluated by the FDA are required by law to state this fact on package inserts along with the cautionary note that the products are not intended to cure or prevent any disease. The following sources of information are available to physicians:

1. National Institutes of Health (NIH) Office of Alternative Medicine (1-888-644-6226)
2. FDA consumer hotline (1-800-FDA-4010)
3. FDA: Adverse reactions to herbal medications (request by calling 1-800-FDA-1088)
4. Review of Natural Products. St. Louis, MO: Facts and Comparisons. [updated monthly]

Some Herbs may be Harmful under Certain Conditions

The top-selling herbs in the United States are echinacea, ginseng, gingko, saw palmetto, garlic, evening primrose oil, St. John’s wort, kava-kava, feverfew, and milk thistle.5 These have been found to be relatively safe, but some carry warnings and should be used only with caution by patients who are pregnant or nursing as well as by those with a history of hypertension. Herbs whose use requires caution include ma huang, chaparral, comfrey, yohimbe, lobelia, and germander. The FDA suggests that these herbs may cause serious adverse reactions.6 7 Ma huang (also known as ephedra or ephedrine) has had recent fame by being marketed with St. John’s wort as “herbal fen-phen.” Because this herb may cause high blood pressure, rapid heart rate, nerve and muscle damage, stroke, and memory loss, its use is not recommended. Chaparral is a desert shrub that has been marketed as a dietary antioxidant supplement. However, this herb has been associated with severe liver toxicity and should not be used.8 9 Comfrey is popular in some health stores as a remedy for cancer and ulcers. Like chaparral, comfrey has been associated with liver toxicity.9 Yohimbe...
taken by male patients to relieve impotency or achieve an erection is also available in prescription form. However, yohimbine has been associated with kidney failure, seizures, and even death, so patients should avoid yohimbine unless they take it under the direct supervision of a physician. Yohimbine is contraindicated in pregnant women or individuals with a history of renal insufficiency. Lobelia (also known as Indian tobacco) can produce sensations similar to those experienced with nicotine and has been associated with swelling of the lower extremities, tachycardia, hypotension, and coma. Germander, like ma huang, has also been marketed for weight control. The main side effect associated with this herb is liver toxicity.

As shown above, many herbs used medicinally can have serious, life-threatening side effects. Of particular concern are those that may cause irreversible liver failure, which can result in death. For these reasons, I recommend that physicians review carefully with their patients the possible side effects of herbs before advising their use. In general, herbs should not be prescribed to patients who are (or are planning to become) pregnant, nursing mothers, infants, or who have any documented allergies to plants.

**Beneficial Herbs That Can Complement Medical Treatment**

Echinacea (Echinacea angustifolia, Echinacea purpurea) has been evaluated extensively, and many patients use this herb to prevent colds and other infections because it appears to boost the immune system and has shown activity against viruses, bacteria, and fungi. However, having heard that a major problem facing our medical establishment is the number of bacteria that have become resistant to antibiotics, some patients try echinacea themselves as first-line therapy for respiratory tract infections because they want to avoid long-term exposure to antibiotics. Without receiving available medical advice, these patients may thus be unaware of the side effects associated with Echinacea. These side effects may include fever, chills, nausea, and vomiting. Because of its potential to stimulate the immune system, Echinacea should not be used by patients with a history of multiple sclerosis, AIDS, tuberculosis, or other autoimmune diseases, and no patient should take this herb for longer than 6-8 weeks.

Saw palmetto (Serenoa repens) has been widely used in Germany to treat benign prostatic hypertrophy. Extracts of this herb containing fatty acids and sterols may have antiandrogenic activity. Saw palmetto is relatively safe and has few side effects. Nonetheless, patients taking this herb should schedule routine appointments with their health care provider to allow appropriate long-term management of symptoms associated with prostate enlargement and to follow clinical guidelines for screening prostate cancer.

Ginseng, taken primarily to increase stamina and endurance, is relatively safe and may help in treating hypertension. Nonetheless, blood pressure should be monitored during its use.

Ginkgo biloba, too, is an interesting herb: The ginkgo is the sole survivor of the family Ginkgoaceae and can be dated back almost 200 million years. The herb Ginkgo biloba is used by many patients to manage tinnitus and to prevent age-related memory loss. It is the most widely prescribed phytomedicine worldwide. This wide popularity arises from studies which suggest that Ginkgo biloba can slow the deteriorating effects of dementia. High concentrations of the herb’s active ingredients enter the brain’s circulation and apparently improve blood supply to nerve cells. Side effects associated with use of Ginkgo biloba include dyspepsia, headache, and allergic skin reactions. In addition, because of its anticoagulant properties, use of this herb should be discontinued before surgery. Spontaneous bilateral subdural hematoma has been reported in patients taking ginkgo biloba for prolonged periods of time.

Garlic (Allium sativum) has been used by patients because of reports suggesting that it has antibacterial, antifungal, anticoagulant, lipid-lowering, and vasodilative properties. Combined, the latter three properties may improve circulation to the heart and brain by preventing formation of blood clots, closure of blood vessels, and cholesterol deposits. For this reason, garlic should be avoided before elective surgery.

Like other herbs, evening primrose oil has multiple beneficial properties. It is a good source of gamma linoleic acid (GLA), which promotes prostaglandin formation (helpful in reducing painful inflammation in arthritis).

Glucosamine sulfate is a chemical which naturally occurs in the body but may be deficient in some arthritic joints. It is therefore used by many patients to treat osteoarthritis. The main function of glucosamine sulfate is to stimulate production of glycosaminoglycans, a major structural component of cartilage. Some studies have shown that glucosamine sulfate helps to relieve pain and inflammation in osteoarthritis. The mechanism is not well known but may involve providing the natural substances needed to allow arthritic joints to heal.

Feverfew (Tanacetum parthenium) is an herb that may be useful for treating migraine headaches. The plant contains a compound called parthenolide, which is thought to prevent secretion of neurochemicals associated with vascular headache. Feverfew has been associated with mouth ulceration and contact dermatitis and is contraindicated in pregnancy.

Herbs which have important activity in the gastrointestinal tract include milk thistle (Silybum marianum), chamomile (active against pyrosis and intestinal spasms), and ginger (Zingiber officinale) (used to treat nausea and motion sickness). Milk thistle has been used for centuries to treat liver disease, but gastroenterologists are today noting many patients taking this herb. Milk thistle may be very helpful in treating various liver conditions and in protecting the liver from injury after exposure to toxins such as alcohol, chemical solvents, and poisonous mushrooms. Peppermint is an herb that has been used to treat symptoms of irritable bowel syndrome as well as spasm of the common bile duct. Oils of peppermint—often used in chewing gum—may relax smooth muscles that prevent physiologic spasm of the common bile duct and the lower esophageal sphincter. For this reason, patients should avoid products containing peppermint oil extract or peppermint oil if they have a history of gastroesophageal reflux disease or gallstones.

In Europe, many different herbs are used to manage anxiety and depression. Some of the most popular and safest include kava-kava for treating anxiety and St. John’s wort for treating depression. When compared with other antidepressant agents in controlled studies, St. John’s wort was found to effectively treat mild forms of depression at a third the cost with only a third as many side effects as standard treatment. Because this herb is pharmacologically similar to...
monooamine oxidase inhibitors, hypertensive patients who use St. John’s wort should avoid foods that contain tyramine and other medications (eg, sympathetic amines and serotoninergic agents) that may react with monooamine oxidase inhibitors.34,35

Some women take herbs such as black cohosh to manage menopausal symptoms (hot flushes and mood swings). Black cohosh appears to have a mechanism of action similar to that of estrogen in that it prevents hormones from reaching the brain to cause menopausal symptoms.36 The herb is safe and may represent an alternative option for women who refuse estrogen replacement therapy or in whom it is contraindicated.

Synthesis and Recommendations

Herbal remedies are commonly used by millions of Americans.37,38 Patients frequently ask their physicians about herbal remedies in the belief that certain herbs may be beneficial in treating acute and chronic diseases. The placebo effect is probably high with these natural products.

To consumers, herbal preparations may also represent a cost-effective natural alternative to some traditional medicines. Unlike Germany, however, where botanical medicines are approved by the government and physicians are given strict guidelines for prescribing these herbal medicines, herbal preparations are not well regulated in the US. Physicians should be aware of the potential toxicity of these herbal medicines. The table following this article summarizes the top-selling medicinal herbs in this country in a format that outlines many of the important issues discussed. ♦

References


The information in this article was presented at the annual meeting of the Prevention and Self Care Symposium, Universal City, California, December 1, 1998.
### Clinical Contributions

Some studies have shown that glucosamine sulfate helps to relieve pain and inflammation in osteoarthritis.\(^{25,26}\) Ginseng, taken primarily to increase stamina and endurance, is relatively safe and may help in treating hypertension. Nonetheless, blood pressure should be monitored during its use. Moreover, blood thinning substances can increase the bleeding risk of patients taking anticoagulant or NSAIDS. Treatment of age-related malfunctions including general dementia and Alzheimer’s Disease. Anti-oxidant that prevents cells from damage. Improves cerebral circulation by preventing blood platelet adhesion and subsequent blood clots (anticoagulant). Supportive treatment for toxic liver damage and chronic inflammation of the liver. May protect the outer receptor sites of liver cells, preventing toxins from getting into the cells and causing genomic injury. Rare side effects include gastrointestinal upset and diarrhea.

### Table 1. Integrated Medicine Herbal Pharmacy

<table>
<thead>
<tr>
<th>Substance</th>
<th>Botany</th>
<th>Medicinal use</th>
<th>Consumer information</th>
<th>Dosage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glucosamine sulfate(^{25,26,30,34})</td>
<td>Substance classified as an amino sugar and made by cartilage cells in the body. This nutrient is important in production of glycosaminoglycans</td>
<td>Nontraditional analgesic agent for treatment of osteoarthritis</td>
<td>Rare side effects. Avoid buying this product in combination with other nutrients that may interfere with intestinal absorption</td>
<td>500 mg three times per day</td>
</tr>
<tr>
<td>Echinacea(^{14,41,42})</td>
<td>Active lipophilic component isolated from the leaves of Echinacea purpurea and Echinacea angustifolia</td>
<td>Supportive therapy for chronic respiratory tract infections (immune system stimulator)</td>
<td>No known drug interactions. Side effects include stomach upset and diarrhea. Contraindicated in autoimmune diseases (systemic lupus erythematosus and systemic illnesses (tuberculosis, AIDS, atopy, plant allergies and multiple sclerosis)</td>
<td>0.75 to 1.5 ml, two to five times daily. Do not take for periods greater than 8 weeks</td>
</tr>
<tr>
<td>Saw palmetto(^{5,43})</td>
<td>Active component isolated from berries of the plant Serenoa repens</td>
<td>Reduces symptoms of an enlarged prostate (difficulty with urination)</td>
<td>Mild gastrointestinal upset. Do not self-prescribe since symptoms of an enlarged prostate may mimic cancer</td>
<td>160 mg lipophilic saw palmetto extracts two times per day</td>
</tr>
<tr>
<td>Ginkgo(^{16,21})</td>
<td>Active component is ginkgoloid, which is derived from leaves of the Maidenhair tree, Ginkgo biloba</td>
<td>Treatment of age-related malfunctions including general dementia and Alzheimer’s Disease. Anti-oxidant that prevents cells from damage. Improves cerebral circulation by preventing blood platelet adhesion and subsequent blood clots (anticoagulant)</td>
<td>Use with caution in patients taking anticoagulant or NSAIDS. Mild, reversible side effects (nausea, headaches, and dizziness). Consult a physician if memory loss is persistent and progressive</td>
<td>60 to 80 mg of dried extract three times per day</td>
</tr>
<tr>
<td>Milk thistle(^{70})</td>
<td>Active component (silymarin) isolated from flower seeds of Silybum marianum</td>
<td>Supportive treatment for toxic liver damage and chronic inflammation of the liver: May protect the outer receptor sites of liver cells, preventing toxins from getting into the cells and causing genomic injury</td>
<td>Rare side effects include gastrointestinal upset and diarrhea</td>
<td>200 to 400 mg (70% silymarin) three times per day</td>
</tr>
</tbody>
</table>
Table 1 (cont.)

<table>
<thead>
<tr>
<th>Herb</th>
<th>Active component</th>
<th>Treatment of</th>
<th>Rare side effects include pruritus,</th>
<th>Placebo effect is probably high with these natural products.</th>
</tr>
</thead>
<tbody>
<tr>
<td>St. John's Wort&lt;sup&gt;55-56&lt;/sup&gt;</td>
<td>Active component (hypericin) isolated from parts of Hypericum perforatum dried above the ground</td>
<td>Treatment of mild depression. Monoamine oxidase and serotonin re-uptake inhibitor</td>
<td>Do not use with foods containing tyramine, alcohol beverages, narcotics, and amphetamines. Consult a physician before use since symptoms may mimic bipolar disorder or hypothyroidism.</td>
<td>300 mg of extract containing 0.3% hypericin, 3 times per day</td>
</tr>
<tr>
<td>Feverfew&lt;sup&gt;22-30&lt;/sup&gt;</td>
<td>Active component (parthenolide) isolated from dry leaves of Tanacetum parthenium</td>
<td>Prophylaxis and treatment of inflammatory conditions and migraine headaches. Parthenolide may block the release of serotonin and inhibits the production of inflammatory substances</td>
<td>Side effects include gastrointestinal upset and mouth sores. Do not use with NSAIDs, pregnancy and lactation, atopy or allergies to ragweed and yarrow. Stopping abruptly may cause withdrawal. Discuss abnormal symptoms with a physician.</td>
<td>0.2 - 0.6 mg (0.2 percent parthenolide)</td>
</tr>
<tr>
<td>Kava-kava&lt;sup&gt;44,45&lt;/sup&gt;</td>
<td>Active component (kavalactones) isolated from dried root of Piper methysticum</td>
<td>Treatment of mild anxiety</td>
<td>Rare side effects. Contraindicated during pregnancy and lactation. Monitor for sign of toxicity (drowsiness and lethargy)</td>
<td>100 mg (70% kavalactones) 3 times per day</td>
</tr>
<tr>
<td>Ginger&lt;sup&gt;46,47&lt;/sup&gt;</td>
<td>Active component isolated from dried root of Zingiber officinale</td>
<td>Prophylaxis of nausea and vomiting associated with motion sickness</td>
<td>Rare side effects. Anti-coagulant properties but anti-thrombotic activity not confirmed in humans. Contraindicated in pregnancy and lactation or history of gallstones</td>
<td>1-2 g of dried root</td>
</tr>
<tr>
<td>Garlic&lt;sup&gt;23,24&lt;/sup&gt;</td>
<td>Active component (alliin) isolated from bulb of Allium sativum</td>
<td>Cholesterol-lowering agent. Prevents platelet aggregation and enhances fibrinolysis</td>
<td>Large doses can be toxic if taken with other blood-thinning medication. Contraindicated in pregnancy and lactation.</td>
<td>2-4 g dried bulb, 3 times per day</td>
</tr>
</tbody>
</table>

* eg, AIDS, multiple sclerosis
** Nature's Way, Inc., Raisin Rack, Westerville, Ohio

"In Europe, many different herbs are used to manage anxiety and depression. Patients frequently ask their physicians about their use and benefits in treating acute and chronic diseases. The belief that certain herbs may be beneficial in herbal remedies about the efficacy and safety of these natural products."
"Suns" by Alexander Kleider, MD
Dr. Kleider is a neurosurgeon with Southern California Permanente Medical Group.
This photograph is a multiple exposure, taken at Bathurst Inlet, on Canada's arctic coast. It shows both sunset and sunrise.
Outreach to Physicians With Problems: A Four-Year Experience

In 1991, a physician satisfaction survey indicated that 13% to 19% of Northwest Permanente physicians had symptoms of burnout. However, the Medical Group’s hospital-based Impaired Physician Committee was seeing only about two clients per year. Most of these clients had advanced substance abuse disorders, confirming the presence of a great unmet need for counseling.

In 1993, therefore, Northwest Permanente established an internal employee assistance program, the Physician Advocate Resource (PAR), a confidential counseling program by and for physicians that was designed to overcome their general reticence to seek mental health care. The present study examined the caseload of the PAR during a four-year period to characterize the ongoing need for such a physician counseling program in a large, group-model HMO.

During the study period, July 1993 through June 1997, the PAR saw 229 new clients, of whom approximately 70% were physicians and 22% were family members of physicians. The most frequent initial complaints (in 45% of clients) were stress, anxiety, and depression, equally divided between job-related and non-job-related causes; 24% of clients had marital or other family problems as their primary complaint. Most clients (58%) were self-referred to PAR. Physician clients were referred most frequently by general internists and the least frequently by surgical departments. Physician clients were a mean 44.7 years of age and had worked a mean 9.2 years at the Medical Group. Male and female physicians were referred with equal frequency.

In-house counseling programs should be available for physicians, whose general reticence to seek help can be overcome if the program is confidential, physician-focused, and conducted in a supportive environment.

Introduction

In 1983, Northwest Permanente, the physician group associated with the Kaiser Permanente (KP) Northwest Division, developed a special committee to help physicians having psychoemotional problems and substance abuse problems. Service on this committee was a hospital staff function, and it operated as the Impaired Physician Committee, a format that had gained popularity at the time. The committee consisted of a chairman and four physician volunteers who offered support to peers with psychoemotional problems. When indicated, referrals were made for appropriate treatment.

Regular meetings were held before or after work to educate committee members and to discuss cases. Committee members were highly dedicated, but the committee’s work faltered because of limited time for travel and meetings. Overriding clinical obligations of committee members also interfered. In its seven years of existence, the committee saw only 17 physician clients among a mean Medical Group population of 426 physicians. Eleven of these 17 clients had alcohol problems that were evident to peers. None of the 17 were self-referred.

This small yield of cases (about two per year) might have indicated that our physicians had few psychoemotional problems. However, results of a representative survey conducted among the 526 physicians in our Medical Group in 1991 (response rate of survey, 85%) suggested otherwise.1 The survey found that 13% of our physicians could be considered “burned out” as measured by the Tedium Index, a well-established measure of burnout.2 The survey also included questions asking whether the respondents believed themselves to be burned out. In response, 19% of physicians perceived they were “burned out” or “burning out.”

Clearly, our committee was not meeting the emotional needs of our physicians, particularly in the area of work-related stress and burnout. However, to meet these needs, we would have to overcome a characteristic common among physicians: reticence to seek help. Self-sacrifice and “noble” stoicism appear to be norms of medical culture—norms which deny real needs and disallow healthy self-interest.3 We were determined to create an environment that recognized physicians’ needs and encouraged physicians to seek necessary help. Our resource would be proactive, strictly confidential, and physician-focused.

Designing a Solution: The Physician Advocate Resource

With these criteria in mind, the Physician Advocate Resource (PAR) was established in June 1993 as an...
The Permanente Journal / Winter 1999 / Volume 3 No. 1

entity by and for physicians. To support this goal, the PAR functions within the Medical Group directly instead of being part of the broader hospital administration. Moreover, the PAR is not a volunteer effort that depends on time donated by busy practitioners; instead, it consists of salaried employees of the Medical Group. A critically important feature of the PAR is that one of the four PAR employees (0.5 FTE) is a therapist with a master’s degree and experience in counseling physicians, employee assistance, treatment of mental and substance abuse disorders, and family therapy. Other staff includes a part-time physician-director experienced in addiction medicine and a part-time psychiatrist acting as assistant director. The two physicians chosen were long-time Medical Group members who are experienced in treating physicians, and these qualifications engender trust. The PAR clinicians share an on-call schedule and are accessible by pager, phone, and electronic mail. They are supported by a half-time confidential secretary.

The PAR is thus an employee assistance program whose function is to reach out to physicians, educate them, evaluate those in need of help, and refer them to identified competent counselors or programs.

Administration of the PAR

From an organizational standpoint, the PAR was given particular legitimacy by being incorporated as a part of the Physician Health Committee, a standing committee of the Medical Group’s Board of Directors; this structure established mental health as a component of physician well-being as well as a legitimate concern of the Medical Group. It tacitly gave permission to ask for help. To address the potential conflict of interest created by the PAR being both part of the employer structure and acting as therapist, the PAR from its inception has been understood by the Northwest Permanente Board of Directors to represent physician clients primarily.

To maintain confidentiality, the PAR office and its records are situated away from main clinical and patient flow areas. PAR records are privileged and confidential by Oregon and Washington law under peer-review privilege statutes* in addition to other privileges which may be available, including psychotherapist-patient privilege, physician-patient privilege, or clinical social worker-patient privilege. PAR records are available only to PAR staff.

Initiating the PAR

Armed with additional legitimacy, confidentiality, and staff for the PAR, we initiated an outreach effort in June 1993 by issuing a letter of introduction describing the PAR and including a questionnaire seeking physicians’ input, concerns, and needs. To get the message to the entire family, the letter was sent to physicians’ homes and was addressed to “John [or Jane] Doe, MD and family.” Other outreach efforts included presentations at departmental and staff meetings and at individual orientation meetings with new physicians.

Response to the PAR

Within two weeks of the initial mailing, the PAR added 11 clients to its caseload. Referrals to the PAR continued at a brisk rate during the subsequent four years, beginning in June 1993 (Table 1). During this period, physicians comprised about 70% of referrals; 22% were members of physicians’ families (Table 1). Physicians seeking PAR services were aged a mean 44.7 years and had been employed by Northwest

<table>
<thead>
<tr>
<th>Category of client referred</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>All years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physicians</td>
<td>33 (67)</td>
<td>33 (72)</td>
<td>49 (72)</td>
<td>42 (63)</td>
<td>157 (69)</td>
</tr>
<tr>
<td>Physicians’ family members</td>
<td>11 (23)</td>
<td>7 (15)</td>
<td>14 (21)</td>
<td>19 (29)</td>
<td>51 (22)</td>
</tr>
<tr>
<td>Other</td>
<td>5 (10)</td>
<td>6 (13)</td>
<td>5 (7)</td>
<td>5 (8)</td>
<td>21 (9)</td>
</tr>
<tr>
<td>All</td>
<td>49 (100)</td>
<td>46 (100)</td>
<td>68 (100)</td>
<td>66 (100)</td>
<td>229 (100)</td>
</tr>
</tbody>
</table>

* including self-referrals.

---

*The PAR is thus an employee assistance program whose function is to reach out to physicians, educate them, evaluate those in need of help, and refer them to identified competent counselors or programs.
Permanent for a mean 9.24 years. The percentage of women physicians seeking PAR services did not differ substantially from the percentage of male physicians seeking these services.

**Reasons for Referral to PAR**

Reasons for referral to PAR included mostly stress, anxiety, and depression; of clients seen for these complaints, half perceived their symptoms to be job-related (Table 2). Marital and family issues were the next most frequent complaint; combined with the anxiety/stress/depression category, these accounted for almost 70% of cases (Table 2). The “Other” category included inquiries (eg, about insurance coverage, sources of outside therapy, and extent of confidentiality) or requests from physician administrators for advice regarding difficult physicians. Because evaluation by the PAR was brief, we did not categorize all cases according to the DSM-IV. Moreover, definite diagnosis was often made after referral to outside resources. We sampled the diagnoses of a clinical psychologist, to whom we referred 18 clients between 1995 and 1997. These clients were referred for “talk therapy” but required neither substance abuse therapy nor pharmacotherapy. The cases were predominantly categorized by the therapist as Adjustment Disorder (DSM IV 309.0) with or without anxiety and depression.

The counselor suggested that the categorization might be more straightforward if it identified problems as Marital (8 cases), Family (3 cases), Work (6 cases), or Other (1 case).

**Sources of Referral to PAR**

We have been especially pleased that most clients seen in the four years were self-referred (Table 3), and we have noted an increasing trend toward self-referral (70% of clients seen in the fourth year were self-referred). We believe this indicates an increasing confidence in acceptance of the PAR and a departure from the physicians’ traditional reluctance to seek help. Administrative referrals originate from department chiefs, usually as a response to excessive patient complaints or to unacceptable physician behavior. The PAR’s role in these cases is to identify treatable conditions and to recommend therapy that might preclude the need for disciplinary measures. Physicians named in liability cases were referred by the Region’s Medical-Legal Department to the PAR for evaluation and stress counseling as needed. Other sources of referral were other health care professionals such as primary care practitioners and mental health practitioners. Family members and physician peers also make referrals, although these are few.

**Table 2.** Type of problem or other reason prompting visit of 229 clients seen at PAR from July 1993 through June 1997

<table>
<thead>
<tr>
<th>Problem or reason</th>
<th>No. (%) of clients with complaint</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marital/family</td>
<td>55 (24)</td>
</tr>
<tr>
<td>Job-related emotional*</td>
<td>53 (23)</td>
</tr>
<tr>
<td>Non-job-related emotional*</td>
<td>50 (22)</td>
</tr>
<tr>
<td>Administrative</td>
<td>16 (7)</td>
</tr>
<tr>
<td>Alcohol-drug</td>
<td>14 (6)</td>
</tr>
<tr>
<td>Medical/legal</td>
<td>11 (5)</td>
</tr>
<tr>
<td>Other</td>
<td>30 (13)</td>
</tr>
</tbody>
</table>

* includes stress, anxiety, depression, or a combination of these

**Table 3. Sources of referral to PAR for 229 clients seen during four-year period, July 1993 through June 1997**

<table>
<thead>
<tr>
<th>Source of referral</th>
<th>No. (%) of clients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self</td>
<td>134 (58)</td>
</tr>
<tr>
<td>Family</td>
<td>27 (12)</td>
</tr>
<tr>
<td>Professional</td>
<td>22 (10)</td>
</tr>
<tr>
<td>Administration</td>
<td>18 (8)</td>
</tr>
<tr>
<td>Peer</td>
<td>16 (7)</td>
</tr>
<tr>
<td>Medical/legal</td>
<td>12 (5)</td>
</tr>
</tbody>
</table>

**Specialty of Physicians Referred to PAR**

Primary care physicians (ie, those in pediatrics, general internal medicine, family practice, and obstetrics and gynecology) accounted for the largest proportion of physicians referred to PAR, compared with physicians from other departments and based on total department population at risk (Table 4). The high numbers of physicians from the general internal medicine department is consistent with that department’s high scores on burnout measures as reported in the 1991 physician survey. Least represented among those seeking PAR service were members of the surgery and surgical specialty departments (neurology, orthopedics, head and neck surgery, urology, ophthalmology). Indeed, members of surgical specialties scored lowest on the 1991 Tedium Index.

“Marital and family issues were the next most frequent complaint; combined with the anxiety/stress/depression category, these accounted for almost 70% of cases (Table 2).”
Effectiveness of Monitoring and Other Follow-up Activities

During the four-year period, many of our 229 clients were distressed, but only 13 had impairment that necessitated cessation of practice. Among these 13, impairment was caused by untreated alcohol and drug problems (6 clients), medical reasons (4 clients), or mental health problems (3 clients). The PAR acted as intermediary between therapists and the Medical Group by assuring that treatment would continue and by coordinating an appropriate return-to-work date. For some clients, PAR physicians prescribed and monitored use of psychoactive drugs. Of the 13 clients designated as impaired, six returned to work; seven remained permanently disabled. Coordination with the health professionals programs of the licensing bodies in Oregon or Washington has been a positive part of PAR’s monitoring of clients impaired by dependence on alcohol or drugs.

Discussion

Despite the myth of invincibility—believed by patients and physicians alike—physicians do have human problems that require therapy. Some evidence suggests that the need among physicians might be especially great, given the nature of medical practice and the perfectionistic characteristics of those who choose a career in medicine. Practice in a health maintenance organization may inherently carry a potential for burnout by permitting less physician autonomy than in other milieus, but stress and burnout are found in diverse medical settings. The number of clients seen at the PAR suggests that this newly available service is addressing a previously unmet need. However, the number of physicians who sought care outside the PAR during and before its four-year existence period is unknown. The need for the service may have recently become considerably more urgent because of the enormous recent changes in medical care delivery systems.

The large number of marital and family problems seen in this study population is similar to the number observed by others. With this phenomenon in mind, future therapeutic and preventive efforts should focus on empowering physicians in their work environment and on strengthening their marital and family relationships.

Conclusions

The PAR filled an important need in the Medical Group by making counseling services available, particularly during this era of stress in medical practice. Whereas anxiety, depression, and burnout were the conditions most frequently noted at intake, our experience showed that physicians’ traditional reticence to seek help can be overcome by outreach and by providing a confidential, physician-focused service. This observation is supported by the predominance of self-referral among the physician clients served by the PAR.

The number of physician clients varied greatly among departments. The reasons are unclear but...
could include circumstances of practice, differences in personality or other unknown factors. Understanding the reasons for these differences might be useful in determining solutions to stress and burnout among physicians.

Outcomes of the PAR experience to date are measured only in terms of physicians’ satisfaction with the process and with the therapy received. Scientifically designed, controlled research is greatly needed to measure clinical outcomes of the PAR approach and to study other aspects of physician health.

*ORS 41.675;RCW 4.24.250

References

The Last Frontier State

When people look for nature without adornment, they often end up in Alaska, the American Eden. But five years ago, the Governor of Alaska said something horribly out of whack in the wilds of the Last Frontier State. There were too many wolves, he felt. Wolves eat moose, the preferred prey of human hunters. To keep more moose alive so they can be shot by predators on two feet, wolves had to be killed, the Governor said. "We can't just let nature run wild," said Gov. Walter J. Hickel, who retired in 1994.

Timothy Egan
The New York Times
December 19, 1998
Raising the Bar for Quality

**Introduction**

For 54 years, Kaiser Permanente (KP) has participated in the development of high-quality, cost-effective, integrated health care delivery in the United States—first as a pioneer of prepaid medical care, then as a leading health maintenance organization (HMO), now as the nation’s largest not-for-profit managed care organization.

In 1994, drawing talent from the Permanente Medical Groups (PMGs) and Kaiser Foundation Health Plan/Hospitals (KFHP/H), a unique quality oversight and improvement program—the Medical Directors’ Quality Review (MDQR)—was developed. Now in its fourth year of implementation, the MDQR has not only contributed to the outstanding record we have established with the National Committee for Quality Assurance (NCQA), but has changed the way we structure and implement quality assurance and improvement across KP. The MDQR combines a quality improvement orientation, a standards-driven survey process, audits of records, and peer consultation to implement national quality assurance standards that are among the highest in the nation.

The MDQR was first implemented under the direction of the Medical Directors’ Quality Committee (MDQC) in 1995. As an agent of the MDQC and the KP Region, the MDQR is different from traditional corporate and board of directors’ oversight processes in three important ways:

1. The MDQR is a shared process, directed and coordinated by leaders representing both the PMGs and KFHP/H.
2. The MDQR is based on standards that have been developed and refined by quality leaders representing every Health Plan and Medical Group across the KP Program.
3. The MDQR is conducted by trained peer reviewers—clinicians as well as quality assurance professionals—who apply direct experience from their daily work to the processes they review.

Unlike many quality oversight activities, a high degree of candor and constructive feedback predominates as physicians, nurses, and other quality assurance professionals discuss their findings and provide peer consultation onsite.

**History of Formal KP Quality Assurance Programs**

Formal quality assurance activities, designed to “measure and minimize variations from what is considered desirable based on current knowledge,” emerged as early as the 1960s within The Permanente Medical Group (TPMG) of Northern California with the advent of the Comprehensive Quality Assurance System (CQAS). Similarly, formal quality assurance programs arose in the Southern California, Northwest (Portland), and other KP Regions. As these programs grew in sophistication, they played an important role within KP and contributed to the national evolution of quality assurance. For many at KP, however, the primary focus became compliance with Joint Commission on Accreditation of Healthcare Organizations (JCAHO) inpatient standards, as was the case in much of the health care community.

In the late 1980s, consumers, regulators, and purchasers began to question the health care industry’s ability to provide effective oversight through its traditional internal mechanisms. Consequently, various health care “watchdog” groups emerged, regulators began to toughen their oversight, and the purchaser-sponsored NCQA rose to prominence.

**History of the KFHP/H Boards’ Quality and Health Improvement Committee (QHIC)**

In 1983, the KFHP/H Boards formed a quality subcommittee—the Boards’ Committee on Quality of Care (BCQC)—in response to heightened awareness by members of the KFHP/H Boards of their fiduciary responsibilities, especially as they related to quality.

In 1983, intending to vigorously exercise these duties and responsibilities in the best interests of those served by the Program, the BCQC began to conduct onsite quality review visits periodically (ie, every 12-18 months) to the KP Regions (nine in 1983, expanded to 12 by 1986). The threefold objective of the quality review visits was to evaluate KP Regions’ quality structure and processes, to ensure that leadership was performing its role, and to exercise the Boards’ responsibility to assure patient safety.

The Boards’ annual reviews continued through the early 1990s and led to continued improvement of the KP Regions’ quality processes and infrastructure. However, these efforts neither inspired the rapid improvement necessary to meet growing expectations (of consumers and others) nor led to the improvement needed for compliance with NCQA requirements or Health Plan Employer Data and Information Set (HEDIS) performance measures.
Mutual Accountability, Permanente Medicine, and the Medical Directors' Quality Committee (MDQC)

In 1994, David Lawrence, MD, Chief Executive Officer of KFHP/H, asked the PMG Medical Directors to propose a new approach to the KP Program's quality review process. In particular, KP Program leaders wanted a process that would foster collaboration between KFHP/H and PMG quality leaders, provide the Boards with the information they needed to continue their oversight responsibilities, and improve quality performance across the KP Program.

In a parallel, related conversation—one that eventually led to formation of The Permanente Federation (TPF)—the value and advisability of autonomy for each PMG was questioned by PMG leaders. Medical Groups could no longer operate in relative isolation within their geographic markets. Any serious breach of quality or performance became national news and touched all PMGs. At issue was the vision of a much closer relationship among the Medical Groups, characterized by performance requirements and "mutual accountability."

Performance requirements—Permanente Medicine—became seen as a necessary and desirable prerequisite to "flying the Permanente flag." However, if the PMGs were to be mutually accountable for performance, an evaluative process would be needed to measure performance and to establish accountability.

Against this backdrop, the MDQC was formed and given its mission to develop and implement "a quality review structure and process that in its actualization will help ensure and improve the quality of care and service to Health Plan members and other customers." Although not readily apparent from its name, the MDQC was composed of KFHP/H as well as PMG representatives.

Eight standards were developed by the MDQC in late 1994, and four of these were implemented in 1995 by reviewers for the new MDQR quality review process. The name MDQR was selected to emphasize the Medical Directors' commitment to national quality standards for all PMGs. This commitment represented a substantial change in policy and culture from the individual group autonomy practiced since the 1940s.

Standards were crafted as "stretch goals" that might not be universally achievable for some time but that established the vision for quality structure, process, and accountability. The development and implementation process harnessed the energy and commitment of the KP quality assurance community as nothing else had done; the standards were challenging and intended to support superior performance. Accountability was expected, but it was accountability based on a learning model instead of an enforcement model.

Since the inception of the MDQR, more than 100 KP quality assurance professionals and physicians have been trained as MDQR reviewers. The training is a rigorous process that extends over two days. Reviewers volunteer their time, energy, and expertise to be trained and to participate in one or two surveys per year. Almost without exception, they report the process to be personally and professionally rewarding, both for what they can offer colleagues and for what they take away from each survey.

Implementation of the Medical Directors' Quality Review

Joint responsibility for directing the new quality reviews was assigned to Sharon Conrow, Vice President for Quality at KFHP/H; and Rob Formanek, MD, of The Permanente Federation (TPF). In 1995, the two worked closely together with Kathy Antis of the Department of Care and Service Quality, Diane Hedler of TPF, and others in the MDQR Work Group to design and prepare the quality review process for implementation.

The MDQC originally developed eight standards:

- Quality Systems Standard;
- Continuity of Care Standard;
- Affiliated Care Standard;
- Qualifications and Competency of Health Practitioners (QCHP) Standard;
- Risk Management Standard;
- Member Rights and Responsibilities (MRR) Standard;
- Utilization Management Standard; and
- Performance Assessment Standard.

Initial quality reviews were conducted in 1995 for each of the 12 KP Regions. In 1996, 14 quality reviews were conducted; one each for the 12 KP Regions reviewed in 1995, one for Community Health Plan (CHP) in the Northeast, and one for an additional non-KP health plan that was under consideration for merger or acquisition.

On the basis of the 1995 findings that peer review processes varied greatly across the KP Regions and within the PMGs, in 1996, a work group composed primarily of Permanente physician leaders crafted a ninth standard: the Practitioner Performance Review and Oversight (PPRO) Standard. Like all MDQC standards, this standard aimed to represent the ideal. It was also intended to "raise the bar" for quality assurance across the PMGs and all parts of the KP Program.
Similarly, other expert work groups were formed to improve credentialing practices and to improve the management of quality in affiliated (contract) relationships such as physician networks. An audit process using sampling techniques was designed and implemented in cooperation with the KFHP/H Internal Audit Department to provide quantitative data about the completeness of credentials files. The information obtained through the 1997 audit process identified several areas of underperformance. These areas have now been improved to acceptable levels, and the degree of improvement has been quantified by additional audits in 1998.

In 1996, Terri Kielhorn, JD (of the KFHP/H Department of Care and Service Quality) and Andy Wiesenthal, MD (of the Colorado Permanente Medical Group) led KP Program risk management experts in an extensive effort to achieve agreement on data specifications and processes. As obvious as it may seem, such agreement has in the past been elusive. The work was codified in the revised Risk Management Standard. Because of this standard, we are now able in 1998 to compare performance data for risk management activities across the entire KP Program. Long overdue, this ability to compare is a historical first for risk management. Starting in 1997, a work group developed KP guidelines for procuring and privileging, and these will be assessed in 1999 as part of the QCHP Standard.

**MDQR Redesign**

True to the principles of continuous quality improvement, the members of the MDQC are themselves currently in the midst of a determined effort to reinvent and streamline the MDQC functions and the MDQR process. Changes for 1999 include:

- Adding a data table for each standard to enable more objectivity in assessments and recommendations;
- Incorporating data requirements to parallel and support care management efforts across the KP Program as guided by the Care Management Institute;
- Realigning the MDQR standards with changes in external regulatory and accreditation requirements, such as those of NCQA and the Health Care Financing Administration (HCFA);
- Combining components of the Affiliated Care Standard into other standards;
- Streamlining the remaining standards by eliminating redundancy; and
- Addressing management accountabilities and the significant event identification and correction process in the standards.

**Summary**

The MDQR is designed to improve and bring consistency to quality management practices, to our collective performance, and ultimately to the quality of care and service provided to our members.

“The MDQR is designed to improve and bring consistency to quality management practices, to our collective performance, and ultimately to the quality of care and service provided to our members.”

“Nothing quite like the MDQR exists in any other managed care program.”

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**References**

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With participation from KP quality assurance leaders, the National Committee for Quality Assurance (NCQA) was guided in its creation in 1980 by the Group Health Association of America (GHAA) and the American Association of Foundations for Medical Care (AAMC). This effort was in response to a request by the federal Office of HMOs. The original Board of NCQA, in addition to representatives from group practice prepaid plans and independent prepaid practice associations, had consumer and business representatives. Over time, NCQA has become the primary national accreditation agency for managed care organizations.

The KFHP/H Boards’ quality subcommittee was renamed the Board’s Quality Committee (BQC) in 1995 and in 1997 was given its current name: the Board’s Quality and Health Improvement Committee (QHIC).

These responsibilities include provision of a safe physical environment as well as proper equipment and resources for patient care; internal policies and procedures that protect patients and members; proper selection and retention of KFHP/H staff; and reasonable measures taken to guarantee the administration of sound patient care.

These performance requirements were initially spoken of as Permanente Practice and more recently as Permanente Medicine.

Members of the MDQC in 1994 included Sharon Crowson, DoPH, KFHP/H VP Quality; F. Jay Crosson, MD, TPMD; David Lawrence, MD, KFHP/H CEO; Ian Leverton, MD, PMGIS; Don Neilander, MD, PMGIS; Larry Oates, MD, MAPMG; Ron Potts, MD, TPMD; Richard Rodgers, MD, TPMD; Al Weiland, MD, NWP; Andy Wiesenthal, MD, CPMD; and Les Zendle, MD, SCPMG.

The Permanente Federation (TPF) did not exist in 1995. Its predecessor, the Permanente Medical Groups Interregional Services (PMGIS) was renamed Permanente Interregional Consultants (PIC) in 1996, and in 1997 PIC was replaced by TPF. The KFHP/H Department of Care and Service Quality is the current name for the former Department of Quality at KFHP/H.

Members of the MDQR Work Group include Kathy Antis, RN, DCSQ; Tracey Cameron, MBA, TPF; Barbara Breiten, RN, PhD, DCSQ; Rob Formanek, MD, TPF; Sharon Garwood, RN, DCSQ; Diane Hedler, RN, TPF; Terri Kielhorn, JD, DCSQ; and Jed Weissberg, MD, TPF.

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What is the Value of the Medical Directors’ Quality Review (MDQR)?

The following comments from Program leaders as well as MDQR reviewers and reviewees capture some of the reasons that Kaiser Permanente continues to be committed to the MDQR:

“It was one of the best reviews I’ve observed. The team members were insightful, and I was impressed by the way they conducted it. They weren’t adversarial, and ideas from other Divisions were shared in a way that helped us do our work better.”
— Richard Topel, MD, Golden Gate Service Area, The Permanente Medical Group

“The MDQR is a good way to achieve internal improvement while maintaining readiness for external reviews. It assists sites with preparing for NCQA and JCAHO by pointing out areas in need of improvement. Without the MDQR, it would be tougher trying to catch up just before an external review. KP standards are sometimes higher than external standards and should be.”
— Maria Capaldo, MD, Southern California Permanente Medical Group

“The MDQR provides leadership in areas not well covered by NCQA, such as the MDQR standards related to risk management and continuity/coordination of care.”
— Tom Judd, The Southeast Permanente Medical Group

“The MDQR is one of the major benefits in our affiliation with KP. The credentials files audit has been very helpful.”
— Nancy Maranville, Group Health Cooperative

“The MDQR helps to characterize us as a proactive, learning organization. It is one of the unique competencies that distinguishes KP from the competitors.”
— Gary DaMert, MD, Ohio Permanente Medical Group

“The peer interaction is great. As surveyors, we usually depart from the review site with more insights and new ideas than we’ve delivered.”
— Michael Raggio, MD, Colorado Permanente Medical Group

“The MDQR provides an opportunity to share best thinking on issues and to set our own standards. The face-to-face interactions between peers are most effective in moving good practices around.”
— Al Weiland, MD, Medical Director, Northwest Permanente

“The MDQR is key to improving our quality, which lies at the heart of our mission, our financial recovery, and how to compete.”
— David Lawrence, MD, Chief Executive Officer, Kaiser Foundation Health Plan/Hospitals

With all your science, can you tell me how it is, and whence it is, that light comes into the soul?
— Henry David Cook
The Pain and Palliative Medicine Clinic
A Description of the Ohio Region’s Pain and Palliative Medicine Program

The capability of providing high quality pain management always ranks near the top of our organization’s “challenge list.” Clinicians are eager to discuss this subject, as is evidenced by the many manuscripts on pain management received by The Permanente Journal, and the proposal by some readers suggesting that we consider this as a future Systems Challenge topic.

The following article addresses the Ohio Permanente Medical Group’s approach to pain management and provides a good basis for future dialogue on the subject within the Permanente community. Let us hear your opinion on this important subject.

- Lee Jacobs, MD, Associate Editor

Introduction
Inadequate treatment of chronic pain continues to plague American society.1 In response, the Permanente Medical Groups across the country have been reevaluating the way we deliver care to patients in chronic pain.2 This article will illustrate some of the consequences of inadequate and uncoordinated care, review the evolution of Pain Management as a specialty, and describe an interdisciplinary approach to pain management developed by the Kaiser Permanente (KP) Ohio Region. Readers are encouraged to consult standard texts for detailed reviews of pain management.3

Case Example
A 31-year-old man came to the emergency department (ED) after sustaining a whiplash injury in a motor vehicle accident. A two-week course of opioid agents, muscle relaxants, tricyclic antidepressants, and bed rest was prescribed, and the patient was instructed to follow up with his primary care physician. Persistent neck and head pain led to the patient being referred to a neurologist, who confirmed the diagnosis of muscle strain, but also sent the patient to the mental health department to rule out underlying psychopathology. The patient did not follow through with recommendations and came to the ED three more times before changing health plans.

The neurologist was consulted, and a three-level laminectomy with fusion was performed. The patient continued to have pain and four weeks later was referred to the anesthesiology department for epidural corticosteroid injections. Still in pain, the patient was told to return to the neurosurgeon. The patient came to the ED several more times before changing health plans.

This case illustrates some of the consequences of improper and uncoordinated pain management. The cost to the patient in terms of lost productivity and suffering was incalculable. Dissatisfaction was high among the patient, his employer, and physicians involved in his care. In addition, the health plan experienced high resource utilization and ultimately lost the member to another health plan.

Change is underway. Ample evidence indicates that patients, their families, and the public are becoming less tolerant of poor pain management and that this may be the ultimate driving force behind improving care.4 In addition to increased public demand, advances in pain management have provided an additional impetus for improving access to pain treatment.5 Regulatory bodies are examining how health care providers are responding to these challenges. Moreover, substantial sums have been awarded in lawsuits claiming inadequate treatment of pain.6

Evolution of the Pain and Palliative Medicine Clinic
To appreciate current models of pain clinics, a brief history is in order. Anesthesiologists gained proficiency in use of regional anesthesia after topically applied cocaine was developed in 1884.7 Subsequently, Rovenstine established a nerve block clinic at Bellevue Hospital in 1936.8 Nerve block clinics function under a biomedical model wherein the site of nociception is identified and interrupted by application of local anesthetic agents, neural destructive agents, or neural augmentative procedures. This model persisted until the emergence of multidisciplinary clinics in the 1960s, developed by Winnie and Bonica as described by Bonica in 1990.9 Multidisciplinary clinics favor a biopsychosocial approach and are often available only in teaching hospitals and tertiary care centers. In contrast to multidisciplinary clinics, specialty clinics give care that is heavily influenced by the primary specialty of

(top) CHRISTOPHER SPEVAK, MD, was, at the time of publication, an anesthesiologist, and the Medical Director of the Pain and Palliative Medicine Clinic for the Ohio Permanente Medical Group. His interests include health services policy and research.

(bottom left) MARYANN DZUREC, PharmD, is a Clinical Information Specialist in the Kaiser Permanente Central East Division Ohio Market Office of Drug Information and Clinical Pharmacy Services. A graduate of Ohio State University, she currently serves as the Clinical Pharmacist for the Pain Clinic.

(bottom right) RONALD COPELAND, MD, FACS, is the Medical Director for the Ohio Permanente Medical Group. Prior to assuming his current role a year ago, he served as the Vice President and Associate Medical Director.
the treating physician. Several types of pain clinics may function concurrently in the same institution. Anesthesiologists typically direct nerve block clinics; neurologists and internists direct medication clinics; physiatrists direct physical therapy clinics; psychologists and psychiatrists direct cognitive-behavioral clinics; and practitioners of alternative medicine have developed their own programs. Each of these clinics may use treatment modalities from various specialties, but lack of integration and coordination may cause fragmentation of care and confuse patients and physicians alike.10

Recognizing this possibility, the American Board of Pain Medicine (ABPM) has developed a process of certification in pain medicine now recognized in the State of California for physicians of different specialties. Eligible candidates must be Board-certified in their respective specialties and must demonstrate additional training or experience in treating pain. The ABPM is working toward being recognized by the American Board of Medical Specialties (ABMS). Recently, ABMS approved a joint proposal by the American Board of Psychiatry and Neurology (ABPN) and the American Board of Physical Medicine and Rehabilitation (ABPMR) to offer subspecialty certification.11

The KP Ohio Region’s Response

In January 1997, after conducting a needs analysis, the KP Ohio Region implemented an interdisciplinary Pain and Palliative Medicine Program with a threefold mission: patient care, physician education, and institutional policy development. The expertise of several disciplines was collected under the direction of anesthesiologist certified by the American Board of Anesthesiology (ABA) and by the ABPM. Representing the physical medicine and rehabilitation, behavioral medicine (psychiatry, social work, addiction, psychology), pharmacy, and nurse education departments, members developed a broad-based biopsychosocial model for treating the entire person, not just the site of injury.

The team cares for patients after their initial evaluation by the medical director, who regularly schedules case conferences with team members to synthesize information and to develop treatment plans. In keeping with the biopsychosocial model, the central components of patient care are the pain management groups and classes, which give patients a focus of control other than medications and procedures. In a series of 10 sessions, patients are taught “life management skills” to redirect their focus from cure to self-care and rehabilitation. The sessions aim to decrease pain and suffering, increase recreational and vocational activities, and decrease reliance on the health care system. Nerve block, medications, and physical treatment modalities are provided by specialists when appropriate.

Flaws in methodology have caused outcome data from pain clinics to be criticized. However, unless an indicator of care is measured, improvement cannot occur. The research suggests that patient satisfaction is directly related to treatment effectiveness.12 Before and after treatment, therefore, we measure patients’ satisfaction, level of physical activity, and depression as well as their primary care and ED utilization. Preliminary data are encouraging (Fig. 1).

Multiple studies have shown that physicians’ education in pain management has been uniformly inadequate.13 In our program, therefore, we have incorporated pain and symptom control as an integral component of educating primary care providers. Educational activities are modeled after the International Association for the Study of Pain Core Curriculum for Professional Education14 and the American Board of Internal Medicine’s “Caring for the Dying—Identification and Promotion of Physician Competency Program.”15 These programs are regularly given at monthly department meetings and at various office locations.

Pain control cannot be improved by clinics and patient education alone: An institution-wide change in culture is needed.16 Flaws in methodology have caused outcome data from pain clinics to be criticized. However, unless an indicator of care is measured, improvement cannot occur. The research suggests that patient satisfaction is directly related to treatment effectiveness.12 Before and after treatment, therefore, we measure patients’ satisfaction, level of physical activity, and depression as well as their primary care and ED utilization. Preliminary data are encouraging (Fig. 1).

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Pain control cannot be improved by clinics and patient education alone: An institution-wide change in culture is needed. Development, implementation, and monitoring of practice guidelines for treatment of acute, chronic, and cancer pain is just a beginning.16 Using as policy the belief that untreated pain and suffering is unacceptable and will not be tolerated is the top priority of our KP Ohio Region. We have therefore
combined a “top-down” as well as “bottom-up” approach, which has been a major accomplishment of the Pain and Palliative Medicine Clinic.

Conclusion
The profile of the “pain patient” is familiar to health care providers and administrators and is frequently associated with dissatisfaction with care, lost workplace productivity, and excessive resource utilization. We have illustrated the possible result of fragmented pain care and described the program developed in the KP Ohio Region. We hope this article inspires other KP Regions to improve pain management by identifying areas of opportunity and developing similar models so that the entire Kaiser Permanente Medical Care Program may be known as the leader in effective pain management.


Acknowledgments: Jennie Ayers, Pharm D, provided graphics assistance; Betty Borosh assisted with literature search, manuscript preparation, and editing.

References

Beware of all enterprises that require new clothes.
Thoreau
Evidence-Based Education: Developing Kaiser Permanente Faculty For the New Millennium

Introduction
Been to any good lectures lately? Has a great Continuing Medical Education (CME) presentation led you to change your approach to any of the common vexing clinical problems you face daily? Why do clinicians usually answer "No" to these questions? What is going on with our inability to teach effectively? Where is the evidence-based teaching to go along with an evidence-based practice?

Producing Kaiser Permanente (KP) clinicians who are skillful and effective in the art and science of teaching evidence-based Medicine is a critical factor for our success in the new millennium. Developing evidence-based educators is more than the means to an end. To successfully implement a well-conceived educational program, the faculty must be much more than content experts—they must be transfer experts. They must promote, facilitate, and foster evidence-based change.

The evolution of well-trained faculty had its origins in 1995, when the Interregional (IR) CME Directors began monthly teleconference meetings. The purpose of the initial meetings was to create an IR Education Best Practices platform. Four years ago, it became apparent that a huge amount of planning focused on what would be taught, yet little time or energy had been invested on who would do the teaching. In other words, there was little reflection on the art and science of becoming better teachers of evidence-based Medicine.

During each of the past four years, an IR Faculty Development Workshop has been conducted in conjunction with the annual IR Primary Care Conference. A focus of the workshop was to support teacher development for those instructors nominated for each cycle of the Conference.

Two key initiatives were included in the IR Education Best Practices Agenda: to complete a needs assessment of primary care clinicians as an aid in developing a Primary Care Core Curriculum and to create and implement an informal Faculty Development Program to support the project.

The goal of the first initiative was to provide primary care clinicians evidence-based modules in the subject areas they considered essential for providing high-quality, cost-effective health care.

The goal of the second initiative was to enhance the teaching abilities of the most frequently used faculty members, our own internal experts and specialists. This goal is as important—if not more so—than that of the first initiative. After all, what good is the information within an educational program if those conveying it lack good communication skills?

The conclusion was obvious. Unless faculty had a better understanding of adult instructional and learning theories, as well as educational modalities and design concepts that enhance physician behavior change, no amount of scientific data presented was likely to result in the practice changes our patients need for better health outcomes. An analysis of what would make a better instructor ensued and resulted in formulation of four basic tenets that are necessary for successful implementation of the IR Faculty Development Program:

- Create a culture of quality.
- Train faculty in presentation skills.
- Solicit presentation evaluations from attendees and acknowledge faculty who perform well.
- Implement and maintain a core curriculum for training faculty in presentation skills, using the faculty themselves as consultants.

Create a Culture of Quality
An environment must be created wherein high-quality presentation is expected and becomes the norm. To create such an environment, we must do the following:

- Publish and distribute KP Faculty Core Competency Skills recommendations.
- Develop and facilitate opportunities for KP faculty to learn new skills.
- Make personal contact—preferably face-to-face first, then either by phone or e-mail—to communicate expectations, review previous teaching experiences, and offer encouragement and mentoring.

Presentation Training and Primer
A Faculty Development/Presentation Skills Workshop that would be recommended for KP teachers must be developed and made available to all. As part of the workshop, emphasize tips on content, voice, gestures, use of projection equipment, slide format, panel discussions, engaging and responding to an audience, and other necessary skills.

(top left) FERDY MASSIMINO, MD, MPH, has been with The Permanente Medical Group since 1979. Dr. Massimino’s current clinical duties are with the Walnut Creek-Park Shadelands Hospital & Facility where he is the Director of the Spine Clinic Service.
(top right) TOM JANISSE, MD, is the Northwest Permanente Assistant Regional Medical Director responsible for CME & Professional Development. He is also the Editor-in-Chief of The Permanente Journal.
(bottom left) CHRIS OVERTON is the Director of the CME & PD Department for Northwest Permanente. He has been involved in the design and delivery of education and training programs since joining KP in 1984.
(bottom right) JOHN HURLEY, MD, has been with the Mid-Atlantic Permanente Medical Care Group since their takeover of the Georgetown University Health Plan in 1980. He serves as Director of Clinical Education and Clinical Professor of Pediatrics at George Washington University, Uniformed Services University, and Georgetown University.
We have identified certain key steps in designing such a curriculum:

- Ask permission of the faculty members to discuss opportunities for improving presentations.
- Emphasize the importance of being both well organized and well prepared when presenting.
- Consider what the audience is to do with the information after the presentation and what outcome is expected from the group.
- Set an expectation that the attendees will comment on all aspects of the presentation.
- Create teaching incentives to acknowledge a job well done.

To further support the Faculty Development Workshop, a revision of the Training Primer (originally developed in 1995 as a complementary training and reference tool) is essential. The revised primer could be distributed as hard copy as well as made available on the Intranet for easy access.

**Faculty Development Core Curriculum and Consultation Service**

Core curriculum modules should be developed for Faculty Development and become standard for all facilities within all regions. A Faculty Consultation Service should also be created to review presentation materials (slides, handouts, lectures, presentation, and program development), because a successful program requires ongoing maintenance.

**Evaluation & Acknowledgment**

We must be relentless regarding our commitment to the process of evaluating and appreciating our educators. Each evaluation provided to a faculty member should include recommendations which reinforce areas of presentation that were strong yet invite and challenge the individual with opportunities to improve. With each presentation of a KP educator, we must remember to express sincere appreciation to each individual who invests in our culture.

**The KP Interregional Conference On Primary Care, Occupational Health and Musculoskeletal Medicine**

Clinicians, many of whom have been associated with The Permanente Medical Groups for an extended period, are aware of deficiencies in our Graduate Education Training model. In 1993, a project-planning workgroup representing Internal Medicine, Family Practice, Sports Medicine, Orthopedics, Occupational Medicine, Health Education, Behavioral Medicine, and Physical Therapy met and began implementing musculoskeletal educational programs for primary care clinicians. As time passed, this interdisciplinary planning group expanded the initial mission to include other strategic areas within primary care, including Practical Primary Care Skills, Communication & Behavioral Medicine Skills and Occupational Health. This project has now evolved to become the current IR Conference On Primary Care, Occupational Health, and Musculoskeletal Medicine.

**The KP Interregional Faculty Development Workshop**

The IR Faculty Development Workshop has evolved during the past three years into its current form. The recommended essential elements, or skill areas, for KP teachers are: Behavior, Content, Interaction, and Diversity Awareness.

**Behavior**

Behavior is part of the physical process of presentation and relates to the physical skills and techniques used by a speaker communicating with the audience. Developing behavioral communication skills means having control over delivery technique by commanding the body (the instrument). Behavioral work addresses such issues as eye contact, gestures, posture, vocal variety, pause and pacing, and use of classroom space, among others. When learned and practiced, these skills can dramatically improve a presentation.

**Content**

Content is that which is to be communicated. Content has three separate aspects:

- Clarity: simply and clearly conveying evidence-based information.
- Impact: creating a presentation that will have a lasting impact.
- Presentation: delivering information so that it addresses the most discrete details while remaining universally comprehensible.

Content should be based not only on what the presenter thinks students should or do know but on understanding what learners perceive as their interests, wants, and needs.

Being an effective presenter requires mastery of all three of these aspects of content. A teacher who is clear yet boring will not create an impact. Conversely, one who is interesting yet convoluted may frustrate the audience. Truly effective teachers are straightforward, concise, memorable, and grounded in the scientific evidence supporting the Best Practice thinking on the topic.

**Interaction**

Interaction skills focus on the relationship between the presenter and the audience. Presenters with strong
interactive skills are always in tune with their listeners. To be in touch with students, a skilled teacher will do the following:

- Engage the students at all times to keep them involved in the presentation.
- Arrange the content of the presentation to have structure and goals but also enough flexibility to accommodate students' needs.
- Respond thoughtfully and objectively to the most challenging student questions.
- Listen carefully.
- Respond to students positively and genuinely and with respect and authenticity.

Diversity Awareness

Diversity has both primary as well as secondary dimensions, and successful instructors know how to focus on each, as appropriate.

Diversity has six primary dimensions: race, gender, sexual orientation, age, culture/ethnicity, and physical ability/disability.

The secondary dimensions of diversity include religion, education, family/marital status, work experience, military experience, and lifestyle.

Mastering these areas—and learners' needs— involves communicating openly, nondefensively, and in a manner that honors the differences among all of us. Insensitivity to these differences can turn a world-class presentation into a third-rate experience, however unintentionally.

For example, let us imagine an educator who, in presenting the latest strategies for preventing HIV transmission, addresses only the information that he or she assumes the audience needs. If, looking at the audience, the instructor automatically assumes they are heterosexual, educated, married, too old to be having sex frequently, and possibly uncomfortable (religiously or culturally) discussing sexual behaviors, the instructor might erroneously assign the entire audience to a low-risk category—and therefore fail to provide the audience with the diversity of information they actually need.

Previously, to participate in the annual Faculty Development Workshop, instructors accepted teaching role assignments six to nine months before presenting. The teacher would agree to develop the future presentation (30, 60, 90 minutes in length) during the workshop and to deliver portions of the presentation to the other Workshop participants as a learning exercise. Each audience member would provide feedback, and faculty candidates would receive individualized coaching from other experienced Permanente Faculty facilitators as well as from professional communication trainers.

During the three-day Faculty Development Workshop, teachers would do the following:

- Develop an understanding of adult learning theory and different educational techniques for presenting their topic to primary care clinicians.
- Learn how to identify what skills and knowledge primary care clinicians want to learn about their topic/specialty (expressed needs).
- Learn how to identify the skills and knowledge that others believe primary care clinicians need to know about their topic/specialty (demonstrated needs, ie, Adult Primary Care Core Competencies).
- Learn not only about current diagnosis and treatment but how to effectively educate patients and engage them as partners in their own care.
- Practice and receive feedback regarding their presentation.
- Demonstrate a confident and credible presentation style.
- Manage participant attention despite the inherent distractions at meetings.
- Create high levels of participation, energy, and interest.
- Ensure that session content is clear, memorable, and engaging.
- Facilitate discussions, and respond to questions professionally.
- Manage any participant resistance/confusion regarding new or otherwise unfamiliar approaches or material.
- Manage direction and focus of a teaching session by effectively linking all discussions and questions back to key information.

Workshop Evaluation

The evaluation results received at the conclusion of each of the three IR Faculty Development Workshops held to date have been overwhelmingly positive. This strong response merely confirms that the skill and wisdom needed to successfully develop evidence-based teachers lies within the Kaiser Permanente organization and our colleagues. To quote one recent attendee: “This was an extraordinary workshop, because I have never seen so much importance attributed to the quality of a presentation at a meeting.”

On the overall evaluation, the 34 responses from attendees at the third IR Faculty Development Workshop expressed strong agreement with the following statements:
• “The presentations at the workshop have inspired me to improve my knowledge and skills” (88%).
• “I am motivated to try some of the new ideas that I learned from this workshop” (88%).
• “I learned new ways of doing things that were directly relevant to being a more effective teacher” (73%).
• “The workshop provided me with information and techniques I can immediately apply to my work as a teacher” (73%).
• “The workshop provided material that was practical” (85%).

Looking Ahead

For KP to reach the next level of quality, we must share the answers that will facilitate a culture of learning and teaching and of providing leadership within the health care industry as the new millennium dawns. As individuals, we know much; as the KP organization, we must provide the resources to develop more effective teachers of evidence-based Medicine.

In doing so, we would have an enormous advantage. By harnessing our collective knowledge, and refining our teaching and implementation effectiveness, the KP organization will position itself to deliver the best medical care possible.

The good news is that IR CME Directors have identified Faculty Development as a key initiative. The establishment of a competency program for Faculty Development is therefore essential to the growth and prosperity of our organization. But this project will not succeed without the support of the real experts in CME: the KP clinicians—our internal customers who will tell us if we have succeeded in this effort.

Consequently, we, as KP colleagues, must consider how we can share our knowledge with one another. Doing so—and subsequently expanding the faculty development model—would deliver these results:

• Better one-on-one teaching skills, which will improve interpersonal and organizational relationships.
• Improved ownership and participation within an interactive environment of learning.
• Methods to approach each day as an opportunity for renewal through learning and teaching.
• Paths to build a community of learning and teaching.
• Influence over the traditions and process of medical education.
• Skills which will improve interpersonal and organizational relationships.

Conclusion

Our organizational imperative is to become better at using high-impact learning opportunities and events and to find ways to share our acquired knowledge with one another. Because time and the changing face of health care are moving as quickly as technology, our collective need to simply keep pace is greater than ever.

In becoming more effective teachers, we will discover new ways to engage with colleagues, producing consistent, positive, and often dramatic results. We will be able to develop a sense of confidence and command of our own natural style and abilities. We will work through our fears about teaching and leadership, in turn having more fun, satisfaction, and success in our everyday communication with colleagues and patients. That is the promise that the faculty development of evidence-based education holds. And it is a promise we must keep.

Acknowledgment: We would like to acknowledge the following Permanente educational leaders who have each contributed to this project in evolution: Bill Ahuna, MD, Doug Benner, MD, Ned Calonge, MD, Connie Chiulli, MPH, Philip Brennes, MD, Carol Havens, MD, Marc Klaau, MD, Barry Jay Miller, MD, Bernyce Popowsk, DO, David Price, MD, Warren Scott, MD, San Shoor, MD, David Sobel, MD, MPH, Ken Spiegelman, MD, Helen Stalling, MSPH, Jill Steinhuegge, MD, PhD, Sam Weir, MD.
Permanente Medicine: The Path to a Sustainable Future

Introduction
From time to time—and especially in difficult times—any organization finds it important to take an objective appraisal of its condition: its strengths and weaknesses, its progress in realizing its aspirations, its adaptability to changing circumstances, and its ability to sustain itself. The challenges that Kaiser Permanente (KP) faces today—a financial crisis, a troubled partnership between the Kaiser Foundation Health Plan/Hospitals (KFHP/H) and the Permanente Medical Groups, and a hostile external environment—make such an assessment timely.

Meeting New Challenges
In fact, the problems we confront today may be as daunting as any we have faced in the last half-century. Not surprisingly, people in our organization are beginning to feel fear, anger, frustration, and even desperation about how to get through the next few years and ensure a secure future for our Program and for our members.

Fortunately, as physicians, we all know what to do when things seem to be getting out of hand. In critical clinical situations, for instance, we fall back on the old mnemonic, ABC: airway, breathing, and circulation. We go to the basics—the fundamentals. I think we need to do that today, too. I think of the same mnemonic—ABC—but I would translate it differently: A would stand for Appreciation of what's happening all around us—the internal and external forces in today's health care environment; B, for Belief in who we are and what we have created—this culture of Permanente that we have built and the practice model we call "Permanente Medicine"; and finally, C, for Commitment to work together as a community of 10,000 Permanente physicians carrying Permanente medicine into the next century as our best hope for long-term sustainability and success.

Let us begin at the beginning by taking a look at some of those internal and external forces we must respond to.

Revenues
The major influence on our revenue has been the power of large purchasers such as the Pacific Business Group on Health (PBGH) and the Health Care Financing Administration (HCFA). In 1995 and 1996, PBGH negotiated premium reductions (9.5% in 1995 and 4.3% in 1996); in 1997, premiums were held steady. In 1998, the increase was only 1%. Nationally, KP's mean rates—already tending to be on the low side—decreased almost 6% in 1995, about 5% in 1996, about 1% in 1997, and began moving back up in 1998, with a 2% increase (Fig. 1). Similar reductions are being made in governmental programs: Although premiums in our Medicare risk program increased about 5% annually between 1990 and 1997, the 1997 Balanced Budget Act reduces those Medicare increases to about 2% annually for the indefinite future.

Competition
Meanwhile, our competitors may be fewer but are also stronger. In 1990, in California, we faced 17 disorganized HMO competitors; by 1996, they had consolidated into just four powerful HMOs.

The future will bring even greater challenges. The pharmaceutical industry, with its vast capital resources, is likely to move into the broader health care market. The telecommunications industry and the banking industry are both considering the prospect of moving into the health care field, which represents one-seventh of the national economy. We might soon see huge conglomerations of disparate industries joining with medical groups to create formidable national competitors. Imagine, for instance, a joint venture health care organization made up of a Microsoft, Schwab, Nations Bank, and a medical group!

Health Care Costs
Medical inflation is being driven upward by factors that are largely beyond our control, especially the aging of the population, the increasing costs of pharmaceutical agents, and the adoption of new technology. By the year 2000, the leading edge of the huge "baby boom" generation will have reached its mid-50s, and—as we well know—a direct correlation exists between the age of the population and the cost of the health care it requires. Measures such as inpatient hospital days show steep increases from about age 55 on (Fig. 2).

The extent to which technology drives health care costs upward is harder to quantify, because some technologies also decrease costs. However, a 1998 review of the literature on the subject in the journal Medical Care Research and Review concluded that "the preponderance of evidence suggests that the development, adoption and diffusion of medical technology are responsible for a large part of the increase in inflation-adjusted health care costs." At least one study indicates that technology may account for as much as 70% of overall medical cost inflation. Prescription drugs have also become a major factor behind medical cost inflation. The HCFA has projected a rise in total drug expenditures from just over $60 billion in 1995 to about $82 billion in 1997.
billion in 1996 to about $165 billion in 2007 (Fig. 2). Much of that increase is being driven by direct-to-consumer drug advertising, which increased from about $100 million spent in 1990 to more than $1 billion spent in 1998 (Fig. 3). We all see the effects of this in our practices: an increasing number of patients ask for drugs that may in fact be inappropriate, provide no added value, and are exceptionally expensive.

**Anti-HMO Sentiment**

No matter how different we believe we are from the rest of the managed care industry, the anti-HMO sentiment that has swept the country has attached to KP along with every other HMO. This negative sentiment can and has created damage to our reputation; it has diverted our energy and attention; and it has lowered morale among our caregivers and our members. For politicians, this phenomenon has become a cause du jour that has led to a growing list of counterproductive laws and other governmental mandates that contribute to more costly health care without in any way improving its quality or accessibility.

Ultimately, “HMO-bashing” in the political arena could lead to fundamental, industrywide legislative changes that could radically alter the basis of employer-provided, prepaid group health care.

**Rise of Individual Consumer**

We are also witnessing a substantial, accelerating shift in health care purchasing from large employer groups to individual consumers—a shift that results from a change in job-based, defined-benefit health coverage to defined-contribution plans that give employees a limited amount of dollars with which to purchase their own health care. By requiring individual consumers to pay more for their health care, this arrangement—which, incidentally, is supported by the American Medical Association—could undermine the economic basis for group comprehensive coverage and could ultimately restrict access to high-quality health care, causing more Americans to be uninsured and dependent on the fragile health care safety net.

Besides these external forces, some important internal issues are also influencing our future. Perhaps the most important of these influences are the status of our partnership with KFHP/H, the financial condition of KP, and the implications of KP’s national strategy, the KP Promise.

**Partnership Issues**

The history of Permanente’s relations with our Health Plan partner over the past decade has not been entirely positive. In fact, most of the 1990s saw a dissolution of trust between Permanente and Health Plan at a national level (and in some cases, at a local level). The problem began to be remedied in 1997 with the creation of The Permanente Federation, which enabled creation of a renewed National Part-
nership Agreement that has reestablished the principle of mutual exclusivity between the Health Plan and the Medical Groups. The National Partnership Agreement also established the KP Partnership Group, a joint body at the national level, to determine KP's national strategy for the future.

Financial Crossroads

Despite recent improvements in the structure of the partnership, we have seen deterioration of our ability to produce sufficient net income to fund the capital projects required for a successful future. In the mid-1990s, KP was generating revenues of about $600 to $800 million a year; but in 1995, that amount fell to about $500 million; by 1997, we had lost almost $270 million, and we will have lost about as much in 1998 as well. Those losses are critical because our capital expenditure needs—the funds we need to finance our information technology infrastructure, new facilities, and other requirements—will be about $2 billion dollars a year. In addition to depreciation, therefore, we will need to generate about $200 to $500 million in net income each year just to keep the organization financially stable and to make the appropriate technological investments needed to care for our patients.

In fact, decisions about capital spending are only one aspect of a complex matrix of decisions that the organization must make. These decisions must be made both nationally and locally, and they must be made cooperatively between the Health Plan and its Permanente partner—whether individual Medical Group or The Permanente Federation. The future of the organization depends on how we resolve the question of exactly where these decisions get made—nationally or locally, and by the Health Plan or Permanente.

This past fall, a process for developing a "roadmap" for the future got underway at the national level between the Health Plan leaders and the leaders of Permanente. We call this plan the "Path to Recovery, 2001," and it is intended to help resolve the question of how the necessary decisions about our future are made. A preliminary agreement (Memorandum of Understanding) was signed on January 7, 1999 by Drs. Crosson and Lawrence.

The KP Promise

In addition, we are striving to shape our own future through a jointly developed national strategy known as the KP Promise, a strategy which fundamentally defines what kind of organization we want to be in the future. For all of us, this strategy has three important implications. First, it shifts the focus in the health care value equation from simply providing low-cost, quality health care to providing a high level of service that still remains competitive and affordable. That focus will be the basis for our competitive future. Second, fulfilling the KP Promise will depend in part on developing state-of-the-art clinical information technology. And third, fulfilling the KP Promise will depend on our ability to maintain and strengthen the unique delivery system that we call Permanente Medicine.

Defining Permanente Medicine

We might best define Permanente Medicine as consisting of structural principles (the principles underlying the structure of our organization) and performance principles (the principles underlying our performance in delivering health care). Let's look at each briefly.

The structural principles underlying our organization consist of group responsibility, self-governance, and self-management.

Group responsibility.

As Permanente physicians, each of us has a professional responsibility to each patient, one at a time. That responsibility is the Hippocratic tradition. As Permanente Medical Group physicians, however, we add to that responsibility an additional element: accountability to an entire group of members for quality of care, service, and appropriate use of the resources which those members have entrusted to us.

Self-Governance.

We manage this dual responsibility through self-governance, which means we conduct our internal affairs through a democratic process of representative, elected group leadership and decision-making, with due process and fairness to all.

Self-Management.

The self-governance process allows us to self-manage the delivery of health care: Unlike many of our HMO competitors, when any Permanente physician decides how to treat an individual patient, that physician makes that decision on the basis of his or her best judgment and without being required to go through a Health Plan approval process. This independence preserves professionalism and is a hallmark of Permanente Medicine.

Added to these structural principles are three performance principles underlying our organization: high-quality medical care, a partner relationship between KP and our patients, and sound management of KP resources.

High-Quality Medicine.

First and foremost, Permanente Medicine can be accurately characterized as evidence-based, up-to-date, integrated between hospital care and outpa-
ient care, preventive, and based on the latest research generated both within KP and outside.

**Permanente/Patient Relationship.**

Permanente Medicine also emphasizes the doctor’s or health team’s relationship with the patient—a relationship based on partnership in managing the patient’s care, a promise of lifetime continuity of care by specialists and primary care providers, and the promise of culturally appropriate care.

**Resource Management.**

Finally, Permanente Medicine emphasizes appropriate resource management, because affordability of health care is one of the most important factors that we as physicians must preserve for our members. We therefore must run our offices efficiently and manage our use of hospital beds, referrals and claims, and pharmacy resources in a manner that delivers high-quality care to patients but does not waste members’ resources.

**Facing Our Weaknesses**

Why do we think these principles constitute the basis for a sustainable future? Because, simply, they represent the delivery model that can manage the cost and quality of health care better than any other model.

"But if we’re so great, how come we’re not rich?” you may ask. Perhaps the reason is that we do have some important weaknesses, and the Permanente side of KP must address those weaknesses.

First, we are very capital-intensive because of our integrated structure (ie, we own many of our own hospitals and other facilities). Second, the cost of primary care is high in some parts of the Program. And third, many parts of the Program have had problems with service performance as perceived by our members.

**Conclusions**

Can we solve these problems while preserving what it means to practice Permanente Medicine?

I think we can. To address our high cost structure, we must redesign primary care to deliver consistent, high-quality care and service, and every Medical Group is already working on that redesign. We can also address these problems through the use of information technology that allows us to construct decision-support systems for Best Practices: practices that produce the best clinical outcomes at the lowest costs. As members become increasingly able to use the Internet, we must leverage that technology to deliver member service and to reduce the cost of collecting and transferring information to and from members. We also must improve the personal communication skills that we use with members—the art-of-medicine skills that are so important to members' satisfaction when they leave the doctor’s office.

In fact, from the member’s perspective, our task is really pretty simple: We ought to answer the phone, meet members’ needs, and treat them with dignity and empathy. That’s it. If we do those three things, it hardly matters what else we do; we will be successful. If we fail to do those three things, however, it will not matter what else we do; we will not be successful.

Of course, we must do other things too. We must maintain affordability, which will necessitate our understanding how to build Medical Groups that are based on less expensive capital demands and delivery models. We also must properly do our basic business (eg, improving our contracting and referral processes). We must compensate ourselves effectively and ethically, for which we must understand how to use salary and incentive payments to encourage appropriate practices without compromising our professional ethics. We must also hold ourselves mutually accountable for our performance; we simply cannot have any Permanente physicians or Medical Groups that cannot perform adequately in terms of efficiency and quality of care and service.

I think back more than half a century ago, when Dr. Sidney Garfield and a handful of other visionaries built the foundations of what we now call Permanente Medicine out of the social chaos and economic dislocation of the Depression and World War II. As Permanente Medicine moved from the “fringes” to the “mainstream” and then to a leadership position in American health care, this brand of medical practice has served us, our members, and the entire country by using an ethical approach to high-quality, physician-directed, affordable health care.

In the current period of rapid and uncertain change and discontinuity, we have a similar opportunity to influence the future and to ensure our own sustainability. We can exert this influence by adapting and refining those time-tested principles of Permanente Medicine to carry them into a new era.

This article was adapted from Dr. Crosson’s keynote address to the Inter-Regional Medical Directors Conference on Oct. 5 in Los Angeles.

**References**

And so what if you’re tired to the bone
up all night
robbed of rest
away from home
thief phone steals large bills
of sleep you might have had
tiny bandit beeper rifles through loose change
and so what if you drag through the next morning clinic
farther and farther and farther behind
the gold ring
snatched out of your grasp
dreams for easy morning dashed
ambushed in clinic fog
and so what if you nearly fall asleep
on your way home
the highway’s quiet you’re finally alone
dry scratchy eyes beg to close
car wanders to and fro
driving while you nap
and so what if you nod off after dinner
feel cramped grumpy mugged
nodding snoring twisting tightly
when the alarm explodes at 5:00 the next morning
holding you up to do it again?
"Young girl, handcuffs, springtime, and silver dollars" by Terry Laskiewicz, MD
Please see the inside front cover for a bio of Dr. Laskiewicz.

"Leaving Home" by Terry Laskiewicz, MD
Dr. Justin is now retired, after 45 years of practicing medicine. Renate G. Justin, MD, was in family practice with her daughter Ingrid Justin, until both joined Kaiser Permanente.

I mutely shook my head. The surgeon, with whom I had worked for years, asked me whether we had been able to do anything. Why at her age? Why my sister? Why lung cancer; I was angry. I asked myself, why her?

I knew the risks, I was familiar with the literature: “The physician who is family lacks the gyroscope of clinical poise, an axis of objectivity in the reeling emotions of family illness.” And again: “The physician does not have a valid physician-patient relationship with his or her own family.” Knowing all this, what should I do?

My hands shook, and I perspired as I scrubbed the morning of the surgery. Once we started to work, I was able to concentrate on what we were doing and the shaking stopped. When we saw the size and extent of the tumor, there was no question of resectability. A tear ran down my cheek into my mask, but the shaking stopped. When we saw the size and extent of the tumor, there was no question of resectability. A tear ran down my cheek into my mask, but the shaking stopped.

After we had closed Eva’s chest, I went into the locker room to change. I surprised myself when I slammed the locker door shut before I got a-hold of the hamper rather than tossing it as I usually did. I surprised myself when I slammed the locker door shut before I got a-hold of the hamper rather than tossing it as I usually did.

A stranger would have found it very difficult to extend to her the understanding and compassionate care which she sought as her life came to an end. My rule not to care for relatives, as all rules, has exceptions. Caring for Eva was an exception.

After getting her affairs in order, my sister moved in with my family, and I became her caretaker and physician. We had asked an internist to be her doctor and write her prescriptions, but she ignored his advice. Hypnosis, along with pain pills, controlled her distress. When she developed superior vena cava obstruction, we switched to demerol and morphine. It was hard to be her sister and doctor. She would complain that the shots hurt and that I should return to medical school to learn how to do what I was doing, and the next minute we would be hugging each other and crying. Once her face started to swell, she did not want to see any other family members, including her two children, because she did not want to be remembered puffy and distorted.

My sister and patient was insistent to the end to be in charge of her surroundings and her life. She would not sleep in a hospital bed with rails, because it felt too confining- “like a jail.” She had fallen out of her regular bed several times, and she was too heavy for me to pick up. We compromised and both of us slept on the floor, which she found acceptable. She decided how much, and at what time interval, she would take which medication. She smoked until the end. She decided who should visit her and when, she was in charge of arranging her flowers, and ordering her menu. She became incontinent when she was near death but adamantly refused a catheter; she could not even accept that she had lost control of her bladder function. She gave her body to the medical school. She was angry at dying young, before she could make enough money to help her children finish their education. Should I have done things differently, not assisted at her surgery, not cared for her but admitted her to a nursing home? I think not. Because of Eva’s overwhelming need for control and independence, she would have been unable to fit into the compliant, passive role expected of a patient.

References
Sunset spills crimson waves
across the sand, unveiling
a crescent of tidal pools.

Our hands touch briefly—
years of understanding flow between us.
My heart beats with yours;

the tide pulses
against the ventricle of the shore;
sun’s smooth pendulum measures time.

I match the rhythm
of your stride, one arm curving
around your back.

Blue herons skim across the bay
—the island already asleep,
dreaming back the tide.

Your voice,
like warm red wine,
your smile cradles a kiss. ✷

Let her cover the mark as she will,
the pang of it will be always in her heart.

—N. Hawthorne

Your face, a map
of life events—lines carved
by medication and disease;
your torso tattooed
by steroids, gastric mucosa
stripped and acid-etched.
These side effects require
additional medication,
and a time-keeping pill box.
Remedies are few, fantasies
many: a skin which begs
to be unzipped—these are the wishes
of the helpless.

At your next office visit,
the doctor consults his oracle,
but has no further suggestions. ✷
LIFE ON THE SUNNYSIDE

IT TOOK A LOT OF THOUGHT...

BUT THESE GATES WILL SOLVE ALL OUR TRAFFIC PROBLEMS!

AND A BUNDLE OF MONEY...

FIRE AND RESCUE

DR. GARFIELD - PERMANENTE PHYSICIAN

THOSE OF YOU FAMILIAR WITH CLINICAL PRACTICE WILL EASILY BE ABLE TO DETERMINE THAT THIS IS A RECREATION OF AN ACTUAL EVENT.

SON, I WANT YOU TO EXPLAIN TO THIS DOCTOR THAT YOU ARE JUST TOO SICK AND YOUR NECK HURTS TOO BADLY TO ACCOMMODATE SUCH AN INSENSITIVE REQUEST!

I WONDER WHAT KERNIG & BRUDZINSKI WOULD SAY ABOUT THIS ONE.

BY JOE OLENAZ
Eric Blau, MD, the author of Common Heroes: Facing a Life Threatening Illness, practices internal medicine with SCPMG at Kaiser Permanente (KP) in San Diego in the Department of Preventive Medicine and is also a professional photographer. Common Heroes is the first of Dr. Blau’s several successful ventures into medical photojournalism. It is this fusion of his talents in both fields that brings to us the drama of the lives of people with fatal illnesses. The book opens with the observation that, “To be terminally ill in America often means dying in isolation... I naively thought I was comfortable with the subject of dying and would be just the person to impart my knowledge. Armed with this hubris, I began my project.” (Introduction, p. iv)

Common Heroes is a series of revealing portraits of KFHP members, most now dead, and their thoughts about having a fatal illness. In the Introduction, Dr. Blau says, “I realized illness was not the essence of their lives. What became clear is that these people were living under a handicap partly created by their illnesses and partly by the dysfunctional responses of their families, friends, and health care workers... Repeatedly, the people I photographed talked of how hard it was to get important people in their lives to talk openly about issues of illness and dying.” (Introduction, p. v)

Cecilia Succetti found that the surgeon who diagnosed her breast cancer did not understand that the news was overwhelming. Fortunately, she got a helpful second opinion: “… He just looked at me and asked, ‘Are you scared?’ I said, ‘I’m petrified.’ He put his hands on either side of my face and said, ‘We’re going to make it better.’ That was all I wanted to hear. I knew he couldn’t take away my cancer, but I wanted to know I wasn’t alone.” (p. 14)

Many of the people Dr. Blau interviewed were more concerned about the effect of their illness on those close to them than about their own mortality. David Goodbody worried about his wife: “My wife asks about how I am doing, but she doesn’t want to get into how she’s doing. She avoids the fact that she is wearing herself down caring for me and that she isn’t getting much attention... She doesn’t want to open up and share her own feelings.” (p. 70)

Many in the book speak of having their friends disappear when it became known they were mortally ill. Few, however, had a more outrageous experience than Sherri Marsh had with a nervous clerk at the Department of Motor Vehicles. After delivering a string of idiotic remarks, the clerk told Sherri that she couldn’t drive—because chemotherapy had made her bald!

Like Mrs. Marsh, most had the foibles of others imposed on their own illnesses. For example, leukemia developed during Tanya Brundage’s pregnancy. She and her husband decided to terminate the pregnancy: “The only doctor who seemed upset with my decision was my high-risk pregnancy doctor, which I could understand.” (p. 48)

Robert Cyr died of AIDS. This man, who was a kind and thoughtful teacher said, “My advice to friends and family of someone who has a serious illness is to allow them to talk about it... The two most important things for me are just to have someone to talk to and have someone with me.” (p. 33)

Dr. Blau has also published a book, Stories of Adoption, about how adults who were adopted as children are affected by meeting their biologic parents. His current effort in medical photojournalism will become a book about obesity.

Common Heroes is still in print and is thematically linked to the next book in this review. Both books are about the difficulty we all have in speaking about the most important issues in our lives. This difficulty may show up in boardrooms as agendas packed with trivia, in everyday life as speech laden with empty stock phrases, and in medical settings as avoidance, isolation, and abandonment. An opportunity, disguised as a difficult and avoidable problem, therefore awaits us.

This unusual book is written for patients but it immediately struck me as having two opposite, unstated purposes: to help physicians understand what can go wrong with patient relationships and to illustrate—and analyze—how that happens.

Barbara Korsch, MD, Professor Emeritus, ret., University of Southern California, is a physician with 50 years of experience. She has tape-recorded interactions between doctors and patients and then spent a long time thinking about what goes on between them. She opens with the questions, “Why do we complain about our doctors? Why do they complain about us?” Frequently, her method is to use direct quotes from both sides to illustrate how problems develop and can quickly escalate. She nicely illustrates with quotes how we physicians, when uncomfortable, “escape into technology.” Moreover, she points out, “... When all is said and done, it is not the health care that people complain about in this country. We have perhaps the best technical expertise available. What people complain about is the lack of communication and the psychological issues.” The purpose of this book is to help patients repair the problem. Are we as physicians so hopeless that this approach has to be taken?

We often hear physicians speak of patient noncompliance. Indeed, whole articles are written on this subject! Dr. Korsch demolishes the solace we find in this categorization by quoting her studies showing that the strongest predictor of compliance is the quality of the relationship between doctor and patient.

The chapter titled, “Why Don’t I Follow My Doctor’s Advice?” discusses the symbolic value of “getting something” from the doctor as a way of validating the patient’s need to be there. This attempt at validation reminds us that self-help clinics do not acknowledge this common aspect of human behavior. It also helps us understand the expectations underlying the wish, often stated by patients, for “an antibiotic.”

The chapter titled, “Where is the Truth?” is an excellent discussion of why—and how much—information should be provided to patients and how the inevitable limits of our own understanding affect this process. The author’s example (p. 98) of a physician’s convoluted explanation of treatment options for a badly sprained ankle reminded me of our great difficulty in trying to provide patients with an understandable explanation of the pros and cons of PSA screening for prostate cancer. The author comments, “I emphasize that the kind of information patients are given will make a difference in their attitudes about illness, their treatment, and their overall health in general.” This statement suddenly made me wonder whether Kaiser Permanente’s current financial losses are our real problem or are simply an easily quantified marker for a more profound but obscure failure to communicate more adequately with our patients.

Dr. Korsch begins a memorable chapter on the origins of nonproductive doctor-patient interactions: “If the emotional dilemmas encountered by medical students in training are disregarded or dealt with only incidentally or accidentally, the students will stumble in their desperation into the maladaptive roles seen all around us in graduate physicians... They will take refuge from human responsibility in obsessive attention to detail.” Who among us can not relate to this, concealing it by silence or—worse yet—by naively redefining “obsessive” into a supposedly desirable character trait for physicians.

Physicians with young children will find interesting a chapter advising parents how to act on behalf of their children when they face pediatric office visits or hospitalization. Children certainly see things differently from adults. If adults are frightened and confused by doctors, what must the medical system be like for a child? “The children and young people visiting the pediatrician today are going to be the adults who will set the tone for health care and behavior in the next century.”

That direct recordings of doctor-patient interactions are useful for self-development is clearly illustrated by this book. Any of us can buy an inexpensive microcassette recorder and start analyzing what we say to patients. Are we responsive to their questions and needs? Are we as good as we want ourselves to be? How much would we pay a doctor for the kind of advice we give? One immigrant patient’s piercing insight is shown by this exchange with a doctor: Q: “Do you think if you ask, we [doctors] don’t like it?” A: “No. I think they like to talk but they don’t want to have responsibility of what they’re talking.”

Many people are bright, but only some are helpful. This is a helpful book written by a clear-minded, experienced physician about the most basic problem of our profession.
Permanente—Fifty Years Ago?

The following three articles were published in the New England Journal of Medicine and California Medicine in 1952 and 1953. The points raised in these articles are not much different than what is discussed today about Kaiser Permanente. The major difference is that we have more than 50 years of distinguished history, giving us much more credibility in today’s medical community. I hope you find these two articles interesting reading. I would appreciate your comments.

- Scott Rasgon, MD, Section Editor

The Permanente Plan’s First Ten Years

With the cost of medical care rising progressively, with insurance plans such as Blue Cross and Blue Shield forced to increase their premiums while their benefits provide for decreasing proportions of the faster rising costs, and with less and less of the worker’s income from wages or salaries available for savings, it is a question whether the supplying to considerable segments of the people of some form of prepayment plan for total medical care can be indefinitely postponed. It is therefore incumbent on the medical profession, as well as other interested parties, to continue to study carefully every apparently successful experiment designed to provide complete medical care of the highest quality to large groups of people at a cost that they can afford and that they can budget. One experiment deserving such scrutiny is the Permanente Plan.

In the Tenth Anniversary Issue of the Permanente Foundation Medical Bulletin,* issued in August, 1952, Dr. Sidney R. Garfield traces the development and growth of the Permanente Plan in the Pacific Coast states. It was originally designed to meet the serious dearth of facilities and medical services in the San Francisco Bay area created by the mass dislocation of people into wartime shipbuilding. Actually, it evolved as the result of a decade of earlier attempts by a group of interested and farseeing persons to provide the best hospital and medical care to average workers at a cost that they could afford. According to its director, the plan, as it actually worked out, was the outstanding wartime medical service outside the armed forces; the list of its achievements seems to bear out that estimate.

At the end of the war in 1945, when shipbuilding was discontinued and the workers were dispersed throughout the country, the relatively few who remained served as a nucleus for the continuation of the plan on a community basis. Now, in 1952, the Permanente Plan serves 250,000 members in California, Oregon and Washington, as well as large numbers of patients who are not members. The acceptability of the plan and its popularity are fully attested by the fact that new facilities are now under construction that will provide for an increase in membership to 400,000.

The scheme was designed to eliminate the waste resulting from poorly planned facilities and from the ineffectual coordination both among the physicians themselves and between them and the institutions in which they worked. It was accomplished by a well coordinated group practice operating in well planned medical centers. It is a prepayment plan based on the insurance principle for the provision of a comprehensive medical service. The fee for service was abolished, but all the prepaid funds have been going to physicians and hospitals. It has therefore provided the greatest incentive and laid the foundation for the genuine practice of preventive medicine by making the healthy person an asset and the sick person a liability.

Details of the plan are worthy of study, for, although Dr. Garfield’s presentation might be interpreted as being tinged with enthusiasm and self-interest, the facts of its accomplishment are impressive. It has also been a financial success. In the 10 years since the plan was established and while it was developing, participating physicians and professional personnel have been paid $23,500,000, and over $10,000,000 has been paid to non-professional personnel and $1,500,000 to outside physicians and professional people.

The organization consists of the following parts: a foundation that is a charitable trust providing facilities and funds for teaching, training, research and charity; a health plan that enrolls members, collects funds and apportions them among the hospitals, medical groups and administration; hospitals that are nonprofit corporations operating medical centers; and medical groups of independent physicians organized in partnerships, each covering a regional service area. The incomes of the doctors in these groups compare favorably with those of physicians in private practice in the same area.

In closing his report Dr. Garfield makes the following statement of the future and of the aspirations of the Permanente Plan:

We are striving to prove (1) that high quality medical care and hospital service can be rendered to the people at a cost which they can afford; (2) that this can be done to the benefit of all parties concerned—the people, the physicians, the hospitals; (3) last and not least, to prove that all this can be done by private enterprise without necessity for government intervention...

... The great interest displayed by doctors, labor, government and the people in the "Permanente idea" encourages us to believe that the accolade of "mission accomplished" cannot be too far off. The workers at Permanente feel that new horizons are opening up for the coming decade...

... The lifting of barriers to the financing of facilities, as demonstrated by the projected new construction, cannot help but make an impressive demonstration to the physicians and hospitals of the country. The excellence of these new facilities, their innovations, the quality of work being performed, the educational and research programs developed will add in no small measure to pyramiding evidence of worth and soundness.

Certainly, this plan is worthy of careful study by physicians throughout the country as one type of program that may not only erect further defenses against the encroachment of socialized medicine but actually provide more and better medical service, at lower cost, and at the same time maintain the dignity of both doctor and patient.
Regarding The Permanente Plan

A letter published elsewhere in this issue of the Journal from Dr. Charles G. Gayden, executive director of Massachusetts Medical Service, calls attention to an editorial in California Medicine for January, 1953, written in reply to the editorial “The Permanente Plan’s First Ten Years,” which appeared in these columns on October 30, 1952. Dr. Hayden suggests the reprinting in full of the California article, but since it is long and space is at a premium an attempt will be made instead to present its salient features.

First, however, it may be desirable to reproduce for the reader’s convenience those parts of the Journal’s editorial of last October on which the writer in California Medicine seems to place the greatest emphasis:

With the cost of medical care rising progressively, with insurance plans such as Blue Cross and Blue Shield forced to increase their premiums while their benefits provide for decreasing proportions of the faster rising costs, and with less and less of the worker’s income from wages or salaries available for savings, it is a question whether the supplying to considerable segments of the people of some form of prepayment plan for total medical care can be indefinitely postponed. It is therefore incumbent on the medical profession, as well as other interested parties, to continue to study carefully every apparently successful experiment designed to provide complete medical care of the highest quality to large groups of people at a cost that they can afford and that they can budget. One experiment deserving such scrutiny is the Permanente Plan.

After a condensed history of the plan, taken from the report of its director, Dr. Sidney R. Garfield, published in the Tenth Anniversary Issue of the Permanente Foundation Medical Bulletin, the Journal goes on to say:

Details of the plan are worthy of study, for, although Dr. Garfield’s presentation might be interpreted as being tinged with enthusiasm and self-interest, the facts of its accomplishment are impressive. It has also been a financial success. In the ten years since the plan was established and while it was developing, participating physicians and professional personnel have been paid $23,500,000, and over $10,000,000 has been paid to non-professional personnel and $1,500,000 to outside physicians and professional people.

After Dr. Garfield’s description of the present working of the plan, the Journal’s editorial closes as follows:

Certainly this plan is worthy of careful study by physicians throughout the country as one type of program that may not only erect further defenses against the encroachment of socialized medicine but actually provide more and better medical service, at lower cost, and at the same time maintain the dignity of both doctor and patient.

The comments of California Medicine in reference to the Journal’s editorial are in part as follows:

In California we have long carried out the “careful study” of closed-panel plans which the editorialist recommends. We have had the advantage of direct observation, so that our conclusions need not be based wholly upon a report of the medical director of such a plan, which the New England Journal of Medicine admits “might be interpreted as being tinged with enthusiasm and self-interest.”

Our study shows closed-panel plans destroy the doctor-patient relationship. This destruction begins with the plan salesman, who must convince the prospective buyer it is to his advantage to break his relation with his personal physician. This is necessary because these plans offer no provision for indemnification of the patient who prefers his own doctor to the plan doctors...

Another destroyer of the doctor-patient relationship is the rapid turnover of Permanente doctors, according to California Medicine, which finds also that closed-panel plans rob the patient of his freedom; important, too, in illustrating the unfair competition represented by such plans is the statement that Permanente doctors solicit their patients whereas doctors outside the plan may not do so.

Revealing, too, is the following quotation from California Medicine’s editorial:

And now, specifically as to Permanente. Who and what is Permanente? In California, when we have difficulty with Permanente, we start with the doctor or doctors then acting as medical directors and end up talking to Mr. Henry Kaiser. We have no technical proof that Permanente is the practice of medicine by a layman. But we inevitably end up talking to—or, more accurately, being talked to and often threatened by—Mr. Kaiser. Our medically trained minds cannot follow Permanente’s intricate intercorporate entanglements, rental arrangements, partnership, interorganizational contracts and pooled personnel and purchasing arrangements. But we know that what Mr. Kaiser says will happen in Permanente usually happens.

Here, then, in our opinion, is the pattern for lay practice, control and direction of a profession. We need not argue the public interest factors in this condition. They have long since been decided and repeatedly reaffirmed by the courts. How many profit-minded laymen will see in the “Permanente idea” the opportunity to “reverse the usual economics of medicine” for themselves? And what will they do with it? Whom will they exploit? And to whom will they be answerable?

There is always risk of creating misunderstanding in lifting passages from their context and using them as representative of the intent of their writer. In this case, however, the attempt has been made to present, in limited space, California Medicine’s greatest objections to the Permanente Plan.

The New England Journal of Medicine holds no brief for the Permanente Plan, which, despite its name, may be thoroughly
Despite their concern over the defects that may be apparent in any immediate situation. And in this way, by the gradual improvement and extension of voluntary plans, the socialization of medicine may be avoided.

The statement in California Medicine that the Journal's editorial "cites closed-panel medical plans in general, and the 'Permanente idea' in particular as 'worthy of careful study by physicians ...' remains unclear; since closed-panel medical plans in general were not mentioned.

A Defense Against Socialized Medicine?
California Med 1953;78:66-7

A recent editorial in the New England Journal of Medicine cites closed panel medical plans in general, and the "Permanente idea" in particular, as "worthy of careful study by physicians throughout the country as one type of program that may not only erect further defenses against the encroachment of socialized medicine, but actually provide more and better medical service, at lower cost, and at the same time maintain the dignity of both doctor and patient."

In California, we have long carried out the "careful study" of closed panel plans which the editorialist recommends. We have had the advantage of direct observation, so that our conclusions need not be based wholly upon a report of the medical director of such a plan, which the New England Journal admits "might be interpreted as being tinged with enthusiasm and self-interest."

Our study shows closed-panel plans destroy the doctor-patient relationship. This destruction begins with the plan salesman, who must convince the prospective buyer it is to his advantage to break his relations with his personal physician. This is necessary because these plans offer no provision for indemnification of the patient who prefers his own doctor to the plan doctors. Then, having become a member of the plan, the patient finds many barriers to the establishment of the desired personal physician-patient relationship. We have just received a letter from a patient which is only a variation on the familiar theme. She went to the plan doctor in her area, who sent her to the nearest Permanente plant (Oakland) to complete spontaneous abortion. There her treatment was handled by three successive doctors, none of whom she saw more than once. So, she will drop the plan, she says, and return to her personal physician, who will see her through any illness.

Another destroyer of the doctor-patient relationship is the turnover of Permanente doctors. There are at least 35 former Permanente doctors now in private practice in the East Bay area alone. What percentage went elsewhere, we do not know. This parade of doctors into and out of a closed-panel plan in itself precludes sufficient continuity to establish and maintain the kind of relationship between doctor and patient necessary to the total medical care needs of the whole patient.

We find also that closed panel plans rob the patient of his freedom. He may not dismiss his plan physician and select another of his choice outside the plan without loss of protection for which he has paid. Under the Permanente plan, for the same reason, he cannot change hospitals. The subscriber contracts today for whatever quality of service may be available from the plan at an indeterminate future date—the date of his future illness. And he is "stuck" with whatever quality of service is then given to him. The patient thus becomes the captive of the plan. One California closed-panel plan recently changed ownership; its patients were "bought and sold." The subscriber who is dissatisfied with the service, or who at the time he is ill would feel confidence only in a physician who is not a captive of the plan, does have a choice. He may take the unsatisfactory service, or he may write off his health plan dues as an ill-advised investment and pay the total cost of his care to the doctor of his choice. Many choose the latter.

A dangerous element in closed panel plans will be immediately obvious to every student of the force of incentive in human relations. This is a particularly important factor when incentive concerns a contract for a service that is so difficult of evaluation and measurement as medical care.

The Permanente Foundation Medical Bulletin, cited by the New England editorialist, talks about incentive thus: "...This results in a reversal of the usual economics of medicine. The well person becomes an asset to the hospital and doctor—the sick person a liability, thus heralding the preventive medicine of the future." The preventive medicine of Permanente so far is truly for the future; we have found no evidence of present achievement. But we agree that the closed-panel plan makes the sick person a liability to both hospital and doctor. The incentive, then, is to withhold treatment, to use short cuts, or to cheapen it, which is the reverse of the incentive of the doctor in private practice.

The only kind of medical economics that guarantees protection of the patient's interests is that which gives incentive to the doctor to prescribe and treat as much as the patient needs. Few people—even doctors—forever violate their own interests.

And now, specifically as to Permanente. Who and what is Permanente? In California, when we have difficulty with Permanente, we start with the doctor or doctors then acting as medical directors and end up talking to Mr. Henry Kaiser. We have no technical proof that Permanente is the practice of medicine by a layman. But we inevitably end up talking to—or, more accurately, being talked to and often threatened by—Mr. Kaiser. Our medically trained minds cannot follow Permanente's intricate intercorporate entanglements, rental arrangements, partnerships, interorganizational contracts and pooled personnel and purchasing arrangements. But we know that what Mr. Kaiser says will happen in Permanente usually happens.

Here, then, in our opinion, is the pattern for lay practice, control and direction of a profession. We need not argue the public inter-
est factors in this condition. They have long since been decided and repeatedly reaffirmed by the courts. How many profit-minded laymen will see in the "Permanente idea" the opportunity to "reverse the usual economics of medicine" for themselves? And what will they do with it? Whom will they exploit? And to whom will they be answerable?

Typical of the mechanistic "efficiency," of the unprofessional approach of Permanente to medicine, is its solicitation of patients. We assume it is unnecessary to quote or interpret the Principles of Medical Ethics of the American Medical Association to our readers. Patients in every group sold by Permanente are solicited, with the full knowledge of "Permanente" but not with the full knowledge of all of the doctors of Permanente. Many members of these employed groups are currently under the treatment of other doctors. Our studies of Permanente reveal that either the ethical prohibition of solicitation of patients by any doctor is wrong, or all Permanente doctors are unprofessional and unethical. Doctors outside Permanente may not solicit patients; Permanente doctors solicit their patients.

Much is made of the financial success of Permanente. Captive doctors, seeing and treating many patients, is one reason. Interns and residents treat some—how many we do not know. Another reason for financial success is that many subscribers who enroll do so reluctantly, as minority members of employed groups. These persons continue to go to their private physicians, keeping Permanente insurance in the background for catastrophes. It is difficult to find a private physician in the East Bay "stronghold" of Permanente who does not have Permanente plan members who continue—even for major operations—with their personal physicians. Each such visit, each such treatment paid for by the patient, is a contribution to Permanente's spectacular financial success.

If the values of the art and science of medicine can be measured by an industrialist's standards of production and efficiency and profit, Permanente is an unqualified success. But medicine has other standards.

The Boston editorialist believes that closed panel plans may provide "more and better medical care." It has not yet been produced by these plans. "Lower cost"? Yes, in premium. "Maintain the dignity of doctor and patient"? Former Permanente doctors have regained their dignity in private practice and lose no opportunity to dispute that claim.

As to the patient's dignity: the closed-panel plan tells him he can't select his own doctor: Permanente can do it better, despite its doctor turn-over record. The patient is assigned to a doctor, is told by the plan what treatment he gets, by whom and where. He is not free to exercise his own judgment and choice. Can this maintain his dignity?

Our confidence in the good judgment of the American people is such that we are not deeply concerned about the future of closed-panel plans. The "Permanente idea" is not new. The history of nearly every medical society will reveal the same problem under the name of "Lodge practice," with inevitably the same result as we predict for the closed-panel plan. The people will make the final determination. Our studies show they want their personal physicians, whose incentive is to serve them and not some third party—union leader, government agency, lodge master or industrialist.

So, we too would join the New England Journal of Medicine in counseling study of closed-panel plans. The more thinking and study, the more experience doctors and patients have with closed-panel plans, the more each will realize that it is pointless to "erect further defenses against the encroachment of socialized medicine" if those defenses consist mainly of instituting the worst dangers of socialized medicine. ✤
CME in an HMO: Fifty Years of Experience

The evolution of the Kaiser Permanente Southern California (KPSC) 50-year experience in continuing medical education (CME) is reviewed. The current program consists of in-house, specialty-specific half days of CME; annual one- to two-day symposia; various specialty, subspecialty, and interspecialty conferences; and an extensive graduate medical education (GME) program. The support structure and budget show strong commitment to the educational program. Future challenges include using new technology to enhance the program, developing programs suited for individual needs, and showing the value of KPSC's commitment to education.

Currently serving about 2.8 million Kaiser Foundation Health Plan (KFHP) members, the Kaiser Permanente (KP) Medical Care Program in Southern California (KPSC) is a prepaid, group-model, nonprofit HMO with 50 years of experience in continuing medical education (CME). Indeed, development of an educational program always had a high priority at KPSC, which currently contracts with the approximately 3000 physicians of the Southern California Permanente Medical Group to provide medical care at 12 different KP medical centers and numerous KP medical offices throughout Southern California. KPSC's philosophy from its inception has been that the opportunity for continuing professional growth was necessary, first to attract outstanding physicians and then to maintain their excellence. The evolution of this educational program is detailed below.

Integral Part of KPSC’s Founding Philosophy

Given the philosophy that the opportunity for continued professional growth was necessary, KPSC, during its formative years of 1945-1957, granted its physicians up to two half-days per week for bona fide educational activities (ie, medical meetings, organized rounds at various hospitals, teaching, and research). Physicians were encouraged to use this time, and many actively participated in the teaching programs of neighboring universities. In 1957, these educational half-days were changed: one half-day was allocated to education, and the other was used as time off. Physicians were encouraged to combine the half-day off with educational time to maintain their teaching commitments. In addition, if a teaching commitment required three half-days, the chief of service was authorized to allow that time to meet such a commitment.

In-house and Beyond: Growth of Educational Programs

As KPSC grew, it became apparent that in-house departmental programs must be developed. Most large departments and many smaller departments have developed specialty-specific conferences, and most departments in each medical center have a departmental educational chair who develops and coordinates that particular departmental specialty’s educational program.

As subspecialties have evolved and grown, major subspecialties such as cardiology, gastroenterology, and nephrology have also developed their own in-house educational programs. Each medical center’s director of medical education and departmental educational chairs meet periodically to administer and evaluate the educational program, to share innovative ideas, to discuss important issues, and to participate in faculty development. (One physician coordinates these meetings and represents the educational program within the organization and nationally.)

Budgets are allocated for development and support of these educational activities, and an organizational structure has been developed.

The in-house educational staff conferences usually meet for a designated half-day per week and consist of two or three main segments. The conferences include visiting professors from neighboring medical schools as well as from universities around the country. KPSC physicians lead case presentations and discussions, in-depth reviews of selected topics, radiology conferences, specialty-specific pathology conferences (including clinical pathology conferences). Recently, the conferences have begun using video and teleconferencing. Before the conferences are held, a needs assessment is done and objectives are set. After completion, the conferences are evaluated by participants, and feedback is given to the speaker. Category 1 CME credit is given for attendance at these activities. Each medical center’s director of medical education is responsible for maintaining overall quality and California Medical Association (CMA) accreditation for the CME program. In 1997, KPSC offered more than 5000 hours of Category 1, CMA-accredited medical education to its physicians.

In addition to these half-day in-house programs, KPSC recognized the need to have extended educational programs. One- and two-day symposia in major specialties were thus instituted, beginning in about 1955. Speakers at these symposia include academicians from the United States and abroad as well as our own Permanente physicians. The symposium program has grown to the point where we now spon-
Annual symposia in nearly 50 different specialties and subspecialties as well as a varying number of cross-specialty symposia on such topics as women's health and doctor-patient communication.

Contributions to Academic Training

An important part of KPSC's educational program has been the intern, resident and fellow training programs. Since the formation of an Obstetrics and Gynecology Residency Program in 1955, KPSC's Graduate Medical Education (GME) Program has grown to include approximately 300 trainees in residency and fellowship programs. These programs include five separate Family Medicine Residency Programs. KPSC strongly believes that the residency and fellowship programs stimulate the attending staff, attract high-quality physicians to the KP Medical Care Program, improve patient care, and contribute to the community by helping to train the next generation of physicians. The GME training programs are administered departmentally by a physician coordinator and a residency or fellowship director.

Other aspects of the educational program include providing clerkships for 400 to 500 medical students per year. The questions and fresh approach of these students provide another educational stimulus for our physicians. In addition, a school for training nurse practitioners was begun in 1972 and provides an opportunity to train nurse specialists in several primary care disciplines.

The approximate budget for the combined CME and GME components of KPSC's educational program, exclusive of physician administrative time but including house staff salaries, is approximately $20,000,000.

Future Challenges

The future for KPSC's educational program holds many challenges. These challenges include incorporation of new technology, development of programs suited to individual needs, and—especially in this time of increasing concern about cost-effective medical care—finding ways to show the value of KPSC's extensive commitment to education. The educational programs should show that they are improving the quality of care we deliver to our members. The programs must also be better coordinated with the quality management program. In addition, the educational programs must be in alignment with KP's organizational goals without losing their independence and objectivity.

Acknowledgment: Over the years, we have worked with a number of people without whose energy, support, and creativity KPSC's educational program could not have been developed. We especially thank Raymond Kay, MD, dec.; Samuel Sapin, MD; the physicians who both administer and participate in these programs and to those who have supported the physicians: Shirley Gach, Cheryl Tiseprati, BA, Valerie Riggs, BS, Peggy Stone-Barclay, MA, Denise Lenore, BA, and their staffs.

Nothing About Me Without Me

(A Health System by and for Patients: The Salzburg Seminar)

- Shift from "biomedicine" to "infomedicine"
- Patient involvement in shared decision making at all levels
  - patient with the health care provider
  - patient with the hospital system
  - patient with the community
  - patient with the local and federal governments

Tom Delbanco, MD,
Professor of Medicine, Harvard Medical School
Kaiser Permanente’s Public Image: Impact & Response
A Roundtable Discussion

Introduction
For the Kaiser Permanente (KP) community, probably nothing is as frustrating as reading or hearing the media lambaste us over and over again. Television shows, movies, newspapers, legislators, all take their turn beating up on managed health care. This can be demoralizing.
The panel of experts participating in this roundtable discussion address the impact, but more important, they suggest how KP can respond to these constant attacks. I encourage you all to enjoy the discussion. Join in the dialogue—let us hear from you.

—Lee D. Jacobs, MD, Associate Editor

Scott Rasgon, MD, moderator: This roundtable discussion will focus on the public relations beating KP takes, how it affects Permanente physicians, and what can be done about it. My first question is: What impact do you think the adverse press is having on KP? Don, why don’t you start.

Don Parsons, MD: First, I think we must realize that KP is a huge target and that we live in a “fishbowl”: we are located in some of the most important media markets in the country, Washington, DC, in particular. What would be local news in many other places becomes national news in Washington. This living-in-a-fishbowl phenomenon is not new to us, but recently we have been selected as the favorite target for many of the adverse reports on managed care. When our doctors see KP being trashed in the media, this creates a significant morale problem.

Ann Cahill: I agree, and it’s more than a collective demoralization. I think individual physicians take this personally as well. It bothers them when KP receives negative press, because they believe they work for a good company and that they do a good job. They know that these things don’t get covered.

Jon Stewart: Another way of putting it is that everybody hates HMOs, but they think their own HMO is pretty good.

Darrcy Loveland: The impact of negative media is cumulative, and the results can be pervasive. It influences employees’ opinions, which affects employees’ morale, which ultimately may influence their job performance. Adverse media influences public opinion, which affects KP’s marketing and the growth of our Program. Adverse media also influences our members’ opinions, which can diminish the level of trust between Permanente physicians and their patients. Finally, adverse media influences legislators’ and regulators’ opinions. This may lead to increased legislation and regulation to address the perceived harms caused by managed care, which may result in increased costs for the organization.

Susanne Coffey: People like to be affiliated with a winner and a leader, and to the degree which KP can be viewed as a leader in our external environment, we will all be better for it.

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Jon Stewart: Another real problem is that reporters fail to understand the distinction between physician-driven, self-managed group-practice forms of integrated health care and other forms of managed care. We consistently get locked in with the worst just because of the ignorance of reporters and others who interpret this phenomenon.

Panels:
Ann Cahill—Vice president for Internal and External Affairs with the MAPMG
Susanne Coffey—Director of National Public Relations and Issues Management
Darrcy Loveland—Counsel, Government Relations Department, Program Offices
Don Parsons, MD—Associate Medical Director for Government Relations for TPMG
Jon Stewart—Director of Communications for The Permanente Federation
Beverly Thomas—Director of Communications and Public Affairs for Kaiser Permanente’s Southeast Division
Moderator: Scott Rasgon, MD—Nephrologist for SCPMG in Los Angeles, California; Associate Editor, The Permanente Journal

Dr. Parsons: This sounds to me like the phenomenon with Congress: everyone hates Congress, but all love their Congressman. Would you say everyone hates their HMO but loves their doctor? Is that something we need to exploit?
Darry Loveland: I agree, Don. Much of the negative press has focused on the managed care industry in general—not specifically on KP. However, negative media about managed care, whether specific to KP or not, often has a negative impact on us. Further, legislation passed to address a perceived harm caused by HMOs other than KP could ironically have a greater negative effect on us than on our competitors. For example, point-of-service legislation introduced to address the problem of a lack of choice of providers would have a greater negative effect on KP, which has an integrated network plan, than it would on those health plans that pay various independent contract providers.

Dr. Rasgon: I want to throw in another observation that goes along with what Don and Darry have said about the lack of public understanding of the different kinds of managed care. I recently saw that a joint KP/Harvard survey of the public's knowledge of the term 'managed care' found that between 1993 and 1997, the number of people who claimed to know what the term means had increased from 31% to 45%. That still leaves 55% who have no idea. Therefore, managed care generally remains a great mystery to the public. I'd like to hear others address the question of how one positions oneself with regard to managed care. Do you ignore it or run from it?

Darry Loveland: From a government relations standpoint, we have stood with the managed care industry when we have activities and interests in common and when it is appropriate to promote the advantageous features of managed care that are common to all managed care plans. However, as a nonprofit, integrated health care delivery system, we are significantly different from our industry competitors and as a result do not always have the same viewpoints and positions.

Last year, KP distinguished itself from its competitors by joining with two consumer groups (the American Association of Retired Persons and Families USA) and two other HMOs (Group Health Cooperative of Puget Sound and HIP Health Insurance Plans) to support consumer protection standards in 18 areas. These standards were useful in our discussions with the President's Advisory Commission on Consumer Protection and Quality in the Health Care Industry. As an ongoing government relations strategy, we will continue, when appropriate, to distinguish ourselves from our competitors.

Jon Stewart: I think that we need to differentiate ourselves by redefining managed care for ourselves—not necessarily for the industry, but for KP. Maybe that means getting away from the term entirely. There is a big debate as to whether you should run against managed care or run with it, or how you should position yourself with regard to the managed care industry. I would prefer to avoid the managed care industry and define ourselves broadly in terms of Permanente Medicine or the KP Promise, emphasizing those aspects of KP that we know matter a great deal to the public, such as physician-directed care and evidence-based medicine.

Dr. Parsons: We are very different from most other members of our trade organizations. The physicians who are treating our patients make the ultimate decision about medical necessity. That doesn't happen in most other health plans, where all medical decisions are subject to health plan review. Also, we exist in an organizational environment that gives us the tools to support that decision-making process and to make the right decisions for the right patients in the right setting at the right time. We have created a unique learning culture in quality improvement.

Ann Cahill: Even when we do things in a way similar to other organizations, we are still different. A striking example is the networks that have been set up in several regions: a Permanente physician manages the network and interfaces with network physicians. This doesn't happen in other plans.

Dr. Parsons: We can emphasize these differences when we are able to communicate one-on-one or to audiences in both the purchasing and public policy communities. We can communicate the wonderful things that we as a Program are doing with respect to innovation in disease-state management, demonstration of quality and efficiency, and the research that is unique in the world of managed care. We have the largest private health services research establishment in the country. When we talk about these things, people express surprise and feel better about KP. Within our own Program, many people are similarly unaware of some of the wonderful things that we are doing that distinguish us from our competitors. With The Permanente Journal, we now have a way to help all people understand the dimensions of the Program.

Dr. Rasgon: Don, you just took the words out of my mouth. Let's shift the discussion from the impact of the negative press and now address some possible solutions for our readers. How do you think The Permanente Journal might help individual physicians deal with some of these issues?

Ann Cahill: The Permanente Journal is one of the best ways to spread information about current research and best practices within our organization. It is also a great marketing tool: This is what we at KP do to advance medicine. It is a great tool to use with the media to combat the negative press.
Susanne Coffey: The Permanente Journal is a testament to the outstanding medicine provided by the Permanente Medical Groups. The Permanente Journal, as well as the recent video created by the Federation, recognizes the Permanente physician and subsequently improves morale.

Beverly Thomas: I also believe that The Permanente Journal is one of the tools that illustrates the KP difference. By sharing the research and other exciting things going on, the broader community can see the unique advantages we offer over our competitors.

Dr. Rasgon: In this era of HMO bashing, and with our new brand strategy in which we look at ourselves as a health care organization rather than a business, do you think The Permanente Journal will help individual physicians to understand this distinction?

Dr. Parsons: I think the simple answer is 'yes.' A nice thing about The Permanente Journal is that it shows the uniqueness of this Program. No other medical group in the United States can possibly publish this kind of journal. The brand strategy will support our reputation further and will allow us to differentiate ourselves from other managed care organizations. The payoff in the marketplace, in the media, and in legislative bodies will be terrific.

Ann Cahill: I also think the Kaiser Permanente brand strategy fits in well. There are many opportunities to bring the tagline 'In the Hands of Doctors' to life. We can have our physicians speaking—whether through media interviews, journal articles, or speaking engagements—about their research, the innovative approach they take in caring for their patients, and their unique ways of practicing. We have many opportunities to advance the KP distinction.

Dr. Rasgon: One of the strategies that I'm hearing for dealing with adverse public opinion is that we are able to personalize care that is physician-driven and can offer evidence-based medicine with quality management, which gives us an advantage over our fee-for-service competitors and for-profit HMOs. I think that is something our physicians can promote. Any suggestions on how Permanente physicians can help get the message out?

Dr. Parsons: It is critical that once we have defined for ourselves what we do, how we do it, and what makes us different, Permanente physicians themselves have a responsibility to get involved with the communities that surround them. Traditionally, outside influences have driven us to become a very introspective organization. Historically, we were rejected by organized medicine and by others who considered our form of practice to be unethical, and we worked for decades to demonstrate over and over again our superiority. Now it is time for us individually, as Permanente physicians, to take the Permanente message into our communities, to our professional organizations, and to legislative bodies. It is only by our taking action that we will regain control over how others think about us.

Darccy Loveland: Following up on Don's comments, one way Permanente physicians, other providers, employees, and members can get the word out is by participating in 'Voices for Health.' KP's grassroots government relations program 'Voices for Health' is composed of two parts: the first is a 'Key Contact Program' that links selected KP physicians, providers, and Health Plan leaders to targeted federal and California state legislators. The second part is the 'Action Network,' available to all physicians, providers, employees, and others who are connected to and supportive of KP who want to assist in our legislative efforts. 'Action Network' participants will be asked to do various things such as write letters, call legislators, or participate in "town hall" meetings. As part of our grassroots effort in California, we have invited California legislators to tour KP's medical facilities. Legislators have a greater understanding of KP after having an opportunity to personally view our unique method of delivering health care. I encourage readers to sign up to join 'Voices for Health.' [See sign-up form, end of article.]

Dr. Rasgon: Developing this positive understanding of how different we are—and then getting the word out—is essential. This issue of The Permanente Journal includes a 1953 editorial from The New England Journal of Medicine and a follow-up article from California Medicine about KP inferring that some people felt we were communist.

Dr. Parsons: We have progressed from being seen as communists to being seen as capitalists. I think we are now regarded by some as no better than our for-profit competitors. How else can our physicians and other members of the KP family get involved in the community outside of our Medical Care Program to communicate who we are, what our values are, and how we actualize those values?

Ann Cahill: One way is for our physicians to be active in organizations in their communities. For instance, some of our physicians are active in the medical societies in Maryland, DC, and Virginia as well as in national societies. We can distinguish ourselves through contributing to the community, whether by volunteering at a clinic or by speaking at different places—advancing Permanente Medicine whenever possible.

Dr. Parsons: Health care remains a local community entity, and that is where we make our greatest impressions.
impressions. Our doctors should speak publicly about the principles of Permanente Practice and about the myths and realities of managed care. We should support these physicians with training and compensation for their efforts. That kind of involvement in community organizations has tremendous payoff.

**Jon Stewart:** I have advocated the idea that maybe each Medical Group ought to dedicate a couple of FTEs to do exactly the kind of community work that Ann mentioned.

**Darrcy Loveland:** Our size is our strength. Our large numbers of members, physicians, providers, and employees offer a tremendous advantage. In the grassroots forums I have held throughout the Program, I have discovered that many KP staff are already involved in professional, national, and community organizations based on their various personal interests. However, they may not be involved as representatives of KP or their connections with KP may not be apparent. If KP creates a support system that encourages and facilitates this type of involvement, it would be a plus for our employees, physicians, and providers—and a great plus for KP.

**Beverly Thomas:** I am also a big advocate of community involvement and think there are a lot of advantages to getting our physicians to increase their visibility. You can think about this another way: When our members come to our facilities for health care, that’s also the “community” coming into KP. If we make sure those members leave very pleased with our services, they will carry positive, credible messages about us back to their family, friends, and neighbors.

**Susanne Coffey:** I think Beverly made some excellent points. We also need to build trust and relationships with key national advocacy groups and with our own members through KP On-Line. We’re working now to establish contacts with key stakeholders so that we can have an ongoing dialogue and be able to have a call to action when we need them to speak on behalf of their health care organization or attend a meeting.

**Dr. Rasgon:** We have been talking about how to increase physician and member involvement, and Susanne mentioned KP On-Line. How does everybody see new technologies—that is, computers and the Internet—changing the way we can present our image?

**Susanne Coffey:** Electronic communications is essential. Influential people—national or community opinion leaders and politicians—get information from the Internet. While developing the breast cancer guidelines, we found that when a national breast cancer advocacy group formed with a negative perception of KP, its message was electronically distributed across the country. We have to be online and be able to use that technology at a moment’s notice.

**Ann Cahill:** I agree. I think it is critical that we use the technology that is available, and physicians who are technologically adept have opportunities to contribute in this area. This consideration relates to the previous issue about burdening physicians who feel overwhelmed. We must appeal to the things that already interest them. If we have physicians who are interested in politics, we should encourage them to be a part of our lobbying efforts. Physicians interested in technology can be invited to assist us with our website. We may have physicians who don’t like any of that but are very involved in their places of worship—they could speak regularly on health topics. We must help our physicians find opportunities that match their interests so they can help expand people’s knowledge of KP.

**Darrcy Loveland:** I hope to use our new technologies—especially e-mail and the Internet, to communicate more quickly with members of Voices for Health. These technologies will enable us to quickly issue action alerts when we need immediate communications with legislators.

**Dr. Parsons:** We tend to think of new technology as being impersonal and sterile. People need immediate response and attention to their concerns, and our website offers an opportunity for knowledgeable physicians and nurses to participate in chatrooms and to send e-mail responses to members’ questions. Doing this can become an expression of our compassion, our interest in our members, and our desire to help them with their problems in a rapid fashion. I think this technology has the potential for actually enhancing our ability to touch our members.

**Susanne Coffey:** What’s so wonderful about the electronic media and the Internet is that they transcend geography and time. They provide ‘just-in-time’ information, whether it is clinical information, a national issue, newsletter, or press release. The Internet is like an old-fashioned bulletin board: Everyone has access to it, and we can all share information.

**Dr. Parsons:** It allows not only the dissemination of information, but inquiry and response. Sometimes we assume that when we give information to people, we have met all their needs. The Internet offers us vast opportunities for conversation internally with our own physicians and other health care providers. Darrcy made a valid point about the usefulness of having members of the legislature and other officials come to our facilities, where they get a visual impression as well as a handclasp and conversation with our people. This connection can be made in the world of virtual reality as well. We can have people come to our Internet facilities and get much the same
experience. As time goes on, technology will evolve to allow us to present multimedia demonstrations and interactive conversations.

Dr. Rasgon: Let me ask a question, leaving the high-tech and going to the low-tech. It seems to me that people of influence, such as legislators, read Letters to the Editor. As an organization or as individuals, we don't seem to use letters for presenting rebuttals or for refuting the “bashing” that goes on. Would anyone like to comment?

Jon Stewart: I don't know whether we do use letters for this or not, but we should. As a former newspaper editorial writer myself for many years, I was always chagrined to look at reader response surveys and see how the Letters to the Editor column was always three times more popular than the editorial column. The Letters section is one of the most read pieces of the newspaper, and we should take full advantage of that. For instance, when local controversies arise that are appropriate for a Letter to the Editor, we could easily distribute to our Medical Groups some “talking points” that they can adopt themselves by putting in their own words and adding their own arguments.

Darrcy Loveland: I agree with Jon. Every Letter to the Editor is an opportunity for us to tell our story and to distinguish ourselves from the rest of the industry. We should be out there doing this more.

Beverly Thomas: You probably don't see as much letter writing specifically about managed care. We have not done a lot of rebuttals, because our dilemma is whether or not any “bashing” has been directed at KP in Atlanta; because it has been directed toward HMOs in general, do we want to own the problems of the industry and have people identify these problems with KP instead of having everyone share these problems across the board and have the HMO association issue whatever response it finds warranted?

Dr. Rasgon: Here is a common scenario that I encounter as a physician: Something about patient care will come out in the newspapers or be on ‘Night Line,’ ‘20/20,’ or ‘60 Minutes’ and will often be erroneous or exaggerated. Patients see these TV shows and come in with several questions, even if it was something that happened on the other side of the country. This scenario puts the Permanente physician in a difficult position. What assistance can we give physicians to help them deal with these all-too-frequent situations?

Ann Cahill: In the Mid-Atlantic Region, we distribute talking points as quickly as possible so that physicians and staff have the information they need when asked. We do need to give our colleagues across the country a “heads-up” when something happens, because it may get reported nationally. We should share our talking points so that we can be consistent in our messages throughout the Program.

Dr. Parsons: We've recently gone through several months of debate about coverage of Viagra, for example, where different parts of our Program may have had different policies, leading to confusion. People saw national articles that reflected a KP position that per-

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Table 1. Panel Summary: Impact of Negative Public Image of Managed Care on Kaiser Permanente’s Public Image

- Adversely affects morale of physicians and staff
- Compromises marketing efforts
- May prompt legislators to respond with potentially harmful bills
- May adversely affect clinician-patient trust
- Causes the public to associate KP with for-profit managed health care organizations

Table 2. Options for Kaiser Permanente’s Response to Negative Public Image: KP’s grassroots program

- As appropriate, differentiate KP from other managed health care organizations
- Refute falsehoods by writing Letters to the Editor
- Promote Permanente Medicine as a distinct entity
- Use The Permanente Journal to market the KP organization
- Encourage Permanente physicians and staff to present information about KP to their community groups, professional organizations, and places of worship
- Disseminate crisis “talking papers” using Programwide electronic media
haps was different from what they encountered in their own jurisdiction. Communication by e-mail or other electronic means would have facilitated understanding. Hooking everyone into the same system should be an objective of the Program over the next year.

**Jon Stewart:** I think an even higher-order objective is to get a universal Intranet up and running. That was supposed to happen earlier this year. For various reasons, partly financial, it has been delayed. This is a case where a relatively small amount of money can have an enormous payoff in our ability to communicate with one another.

**Dr. Rasgon:** Do you see this as a competitive advantage for us because our physicians work only with KP, whereas other HMO physicians work for several other managed care organizations?

**Dr. Parsons:** It is not only a competitive advantage, but it is an opportunity for building commitment and for improving morale. Information is what we are all about, Scott. For example, with the Care Management Institute, we now have an organization that can extract the very best in this Program, package it, and disseminate it quickly to other parts of the Program. That can't happen in any other national medical care system.

**Jon Stewart:** It has been suggested that maybe we need a sort of nonclinical version of CMI to identify, collect, and disseminate nonclinical Best Practices throughout the organization. I suspect that the mere existence of a good Intranet will do some of that all by itself.

**Dr. Rasgon:** We have discussed ways to get information out to the public, but also among ourselves. I get the impression that you believe The Permanente Journal as well as the Intrane is avenues for doing this. I also get the impression that you believe the brand strategy is a way to differentiate ourselves. As we conclude this dialogue, do you have any further comments for our readers?

**Jon Stewart:** As I said in the beginning, we need to say managed care—or at least what people think of as managed care—is in the past. Now we are coming into what it really means to manage care for better outcomes. This is what Permanente Medicine is about. It is about evidence-based medicine, physician-directed medicine, and high-quality care and service—all the things that KP promises to be about. We must define managed care in those terms, because those are the terms that will continue to distinguish us from other managed care organizations.

**Dr. Parsons:** I would like to think that we could be the 'pebble falling into the pond': learning to communicate more effectively in our own Program enhances our ability to affect public policy and what is going on around us—in widening circles as it were—and so creates the opportunity to affect the way systems of medical care are developed for all Americans. Our ability to communicate about these issues will give us enormous influence that will extend beyond our own boundaries.

**Jon Stewart:** Yes, we have this great opportunity to define the future for ourselves, but that job must be done by physicians and providers. They really need to step forward and grapple with that responsibility. If they don't do it, somebody else is going to do it for them, and they may not like the way it comes out.

**Beverly Thomas:** There is a lot of 'HMO bashing' going on, and effective communication will be critical for us as an organization. I am concerned that when people hear the same negative things over and over again, some people in our organization may begin to second-guess themselves or some may even start to believe and accept the negative. One of the things we have to do internally is to remind ourselves how great we are, what positive things we are doing, and the impact we are having. We must believe in ourselves first and then share that belief with others.

**Ann Cahill:** That's true, Beverly. Sometimes we beat ourselves up so much that we forget how good we are! Every day Permanente physicians raise the quality bar for medicine. Our future is to continue to be that bar-raiser. The Permanente Journal helps us to share—internally and externally—the innovation evident in Permanente Medicine, which improves health care overall in America.

**Darrcy Loveland:** Continuing what Jon said, if we want to differentiate ourselves, we all must be out there telling our story. That should be viewed as part of all of our jobs. As an organization, we must encourage our physicians, other providers, and employees to become more externally focused. We have a good story to tell, and if we do not tell our story, as Jon said, then someone else will. Once again, I encourage those who are interested in helping us share our story with legislators to sign up to join our grassroot government relations program, 'Voices for Health.' [See sign-up form, next page.]

**Susanne Coffey:** From a Program wide perspective, we will continue to position KP as a leader and to collaborate with organizations that lead national policy and opinion. The key for us is that we must continue to provide strategic communications to multiple stakeholders.

**Dr. Rasgon:** I would like to thank our panel participants for taking the time to join us for this discussion. I believe that you have raised some excellent ideas that will help our physicians deal with the HMO-bashing that permeates our society so that they can better relate to their patients and deal with politicians and the public at large and can continue to make KP the leading health care organization in the country.”
YES, I would like to support Kaiser Permanente by joining VOICES FOR HEALTH, Kaiser Permanente’s grassroots program.

NAME: ____________________________________________

TITLE: ____________________________________________

WORK ADDRESS: ______________________________________

Number and Street

City, State, Zip Code

WORK PHONE: ___________________ WORK FAX: _____________

WORK E-MAIL: __________________________

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Number and Street

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Kaiser Permanente National CME Program

The Permanente Federation is developing a national CME program that will be accredited by the ACCME and will be able to provide CME credit to Permanente physicians across the country (including Hawaii).

The main purposes of the program are to sponsor CME activities which have Program-wide appeal, and to offer CME credit to physicians across state lines. The National CME program will not replace local CME programs and activities that are designed to meet the needs of physicians in their areas.

If you would like more information on this program, contact Jill Steinbruegge, MD at 510-271-6851, or Leslie Francis at 510-271-6440.

Ninth Interregional Conference on Primary Care, Occupational Health, and Musculoskeletal Medicine

This conference, titled “Improving Clinical Outcomes and Professional Satisfaction in Primary Care Practice,” will be held March 27 through April 3, 1999, at the Aston Wailea Conference Hotel, in Wailea, Maui, Hawaii.

For conference registration, questions about program content, or conference policy, contact Helen Taylor via telephone at 510-987-3966, fax at 510-873-5137, or e-mail helen.taylor@ncal.kaiperm.org.

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Even before you submit your manuscript to The Permanente Journal for publication consideration, you can obtain help with its preparation. The Medical Editing Department, which is part of the Kaiser Foundation Research Institute in Oakland, is a resource available to many researchers throughout the Program. The department’s professional editors can help you organize your paper, edit your text, verify references, and prepare tables and graphics for publication. Call Medical Editing at 510-987-3573 for information relating to the cost of editorial services for your manuscript.
Instructions for Authors

Send all manuscripts to:
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Editorial Policies
Manuscripts are received with the understanding that they have not been published or submitted for publication in whole or in part elsewhere, except for a scientific abstract, unless otherwise specified. Manuscripts will be reviewed by the Editor, Associate Editors, members of the Review Board, and appropriate specialists internally and externally as deemed necessary. Acceptance of a paper for publication is based on the relevance, quality of work described, clarity of the presentation, and especially applicability to clinical practice. If the article is accepted for publication, editorial revision may be made to aid clarity and understanding without altering the meaning (see Proofreading). Authors are reminded that they assume full responsibility for final wording and form of all materials submitted for publication.

Types of Papers
There is no required length, although concise, readable, and practical articles within the ranges listed are preferred. Emphasize information that clinicians can use in their practice, that gives them regional and national perspective, and that integrates "Permanente Medicine" into the largest scope of health care delivery.

Notes About Specific Sections

• Clinical Contributions
Clinical articles on the practice of medicine within The Permanente Medical Groups and their affiliates. Article topics may include reviews of "successful" practices, programs and policies, and analyses of new technologies.
(word count range is 725-5000)

• Original Research
Articles on Kaiser Permanente’s research contributions through original, empirically-based research in areas of great clinical importance. This includes outcomes research, studies that use Kaiser Permanente databases, and rigorous evaluations of best practices and innovations in clinical care.
(word count range is 725-5000)

• Health Systems
Articles from a "systems" perspective, recognizing that medicine is practiced in the larger context of health care, including ambulatory care delivery, hospital strategy, program expansion and network development and is supported by information technology and the Internet. Growth in this system occurs through the leadership, education, and development of clinicians.
(word count range is 725-3000)

• External Affairs
Nonclinical articles on external issues related to the practice and perception of Permanente medicine. These may include articles by customers and consumer groups, as well as internally generated articles on health policy, the media, the marketplace, and our social mission.
(word count range is 725-3000)

• Medical Legal Update
Articles educating clinicians about medical legal issues, including risk management, claims review, loss prevention, and ethical issues. Improved clinician communication with patients, families, and the health care team is the goal.
(word count range is 725-1400)

• Soul of the Healer
Poetry, stories, musings, and nonfiction articles written by Permanente physicians as an expression of the soul of the healer. This is a forum to appreciate each other personally through creativity in the humanities.
(word count range is 725-2200)

• A Moment in Time
A look back at milestones in the history of the Permanente Medical Groups.
(word count range is 700-740)

• Abstracts
Abstracts from articles published in other journals, preferably featuring the works of Permanente physicians.

• Announcements
Significant achievements related to the practice or management of medicine by Permanente physicians or Permanente Medical Groups. Also posted will be upcoming courses, meetings, and conferences sponsored by the Permanente Medical Groups or Kaiser Permanente.

• The Lighter Side of Permanente Medicine
Jokes, stories, and humorous encounters tied to the practice of Permanente medicine, managed care, or health care in general.

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