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Editors’ Comments

Drawing Out the Modern Mind
Tom Janisse, MD, Editor-in-Chief

In this third issue of The Permanente Journal, I would like to continue my comments on communication from the second issue, but broaden the scope and context. We know how important communication is and how it often could have been done better. We hear how we can’t communicate enough, how we communicate more by our actions than our words, and how we remember visuals better than words after a lecture. In the last couple of years I have been actively trying to draw “pictures of ideas” to aid in explanation. These pictures are visual representations of a concept or a process I am discussing with someone. (Box 1: Pictures: desktop computer, mouse-generated drawing symbols. Box 2: Pictures: palmtop, stylus-generated sketches.) Other pictures I use routinely are metaphors and stories.

Physicians, patients, and other healthcare workers have responded well. They seem to understand me better or feel a picture or diagram has clarified our discussion. This response has encouraged me to seek new ways to picture ideas to improve my communication skill and effectiveness. Because we increasingly understand the value of innovation in health care delivery, tools to enable and diffuse innovations can benefit us. The Permanente Medical Groups will better define, clarify, and implement Permanente Practice innovations if clinicians communicate more effectively with each other. Drawing can complement other communication tools we use—electronic, audio, video, oral, and written.

Visual Explanations

To approach visualizing ideas from a different perspective, as an editor I work to enhance the environment in which words appear. For example, I encourage authors to include tables, graphs, and diagrams with their articles. Further enhancements include: placing these articles in a more visually pleasing and diverse environment populated with drawings, photographs, icons, and borders; the graphic use of white space; and attention to the format and type style of text. Through these methods pages don’t appear so dense with words. I believe that these efforts enhance communication. It gives the author and the reader the greatest opportunity to connect with each other. Each is more highly stimulated by the content and the context.

Because as editor of The Permanente Journal I oversee all aspects of each issue, I spend time with the production staff looking at the layout, selecting the cover art and the visuals inside, as well as attending to the balance, tone, and order of articles—the “feel” of The Permanente Journal. To improve my graphic sensibility I have begun to read magazines like, Critique: The Magazine of Graphic Design Thinking, and books like Edward Tufte’s series, The Visual Display of Quantitative Information, Envisioning Information, and Visual Explanations. It was an article in Critique that stimulated this editorial. It is called, “Drawing Out the Modern Mind.” The following comment introduces the article: “Contrary to old beliefs, the human mind is not a computer: instead of working in a predictable, logical, sequential way, our minds work in a flexible, perceptual,
all-at-once way. The modern mind achieves power by combining logic and intuition. And you can sharpen the perceptual skills that underlie intuition by strengthening your drawing skills.”

**What's The Difference?**

You may be asking yourself at this point, how does this make any difference to me? In the Health Systems Management section of this issue a roundtable discussion appears on “Primary Care and the Specialties: Relationships and Access.” When you read it you will engage in a conversation with 6 physicians from across the country who discuss what they have learned from innovative practices they have implemented. You will hear and understand more about access to specialists than is present in the words on the page. You will import something from the conversational context in which the words are embedded, the relationships between the different practices, and the matrix created as the ideas and practices intertwine. You will connect these ideas to your own experience and so enliven them. You will come away with a picture greater than the words on the page.

Well, how else can this matter to me? Most physicians struggle a little with how to improve their interaction with patients; with how to improve their communication. I was struck by a recent comment I read where a patient said they wished the doctor would have explained it better; they wished he would have drawn a picture. Not many of us are artists or can even draw. But we can, and do, create pictures in the form of metaphors or stories—two of the four tools of intuitive thinking along with images and symbols. These tools help to bring the elusive complexity of medical science to a common place for people—a description of the dilemma or the concept in everyday language or events. I hesitate using the following dark-side example; however, I practice clinically as an anesthesiologist, and when people come to surgery they are most afraid of not waking up, of dying under anesthesia. They come to the operating room on terms with the surgical procedure, but not with the loss of control of unconsciousness. People often ask, “What are the odds?” Currently, death occurs from anesthesia in about 1 of 200,000 encounters. That doesn’t mean much to those who aren’t statisticians. So some of us say, “You have a greater chance of dying when you walk across the busy four-lane street out in front of the hospital.” They relate to that. It places their impending surgery and anesthesia in a common context.

Adults have different learning styles. Not all learn through cognitive means. Some people learn much better by experience, by actually trying something out, by doing it. Some learn through conversation, and some learn through reflection. Some patients want the numbers and the facts; some want your best hunch. And some just want to know that you’re giving it your best effort. Some people just want to know that you care, and then they feel safe and reassured.

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“Contrary to old beliefs, the human mind is not a computer: instead of working in a predictable, logical, sequential way, our minds work in a flexible, perceptual, all-at-once way.”

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**Box 2: Pictures: palmtop, stylus-generated sketches**

Site of belly pain

Overlapping areas

Meeting process

Similar components

Project timeline

Forces on clinicians

Document bullet points

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**Draw Me a Picture**

Drawing a picture on paper or speaking in visual terms may be a way to expand the effectiveness of our communication. In the article I mentioned, "Drawing Out the Modern Mind," (Critique, Autumn 1997) the author describes "the seeing strategies that underlie the global skill of drawing, without regard to medium or subject:

- The perception of edges
- The perception of spaces
- The perception of relationships
- The perception of lights and shadows
- The perception of the whole, or the gestalt."

Giving these "seeing strategies" a medical context will demonstrate their value as perceptual tools, in addition to being drawing tools. Each of these has application for me in the practice of medicine.

"Edges" can refer to the boundaries of primary care and specialty care scope of practice and to the points of interaction between the two disciplines. As physicians have noted there is some overlap in practice, and this is a fertile area for exploring enhancements in service and patient care. The concept of edges also has meaning in the realm of physicians and affiliated clinicians as they begin to work in teams and in some cases redefine their real value as practitioners. Kaiser Permanente has pioneered the delivery of medical care through the use of nurse practitioners, physician assistants, and nurse anesthetists, to name three.

"Spaces" can relate to the environment in which we practice: the space of the exam room or "the room to move" we have in ordering tests or prescribing medications, or the time to see patients, pauses in conversation, or our "personal space." How we perceive and use these spaces is critical to our effectiveness.

The perception of "relationships" often determines our interaction with clinicians in other departments, and with patients. A positive relationship with a patient may result in better care. As a medical group, we are more aware of a local community and a national market; how we perceive each guides our healthcare strategy.

"Lights" are our resources, positive attitudes and influences, expanded perspective, enlightened solutions, regard and constructive feedback, innovation and wisdom. These are tools for a better practice. We can see "shadows" as barriers, the unknown, the feared, constraints, the downside or oppositional view. Both lights and shadows are essential components in achieving perspective and a balanced approach to understanding.

The "gestalt" is the whole, the system, the big picture, the context. We speak more about holism in healthcare now: taking into account the whole person—the emotional, behavioral, and spiritual along with the physical—in arriving at diagnoses, etiologies, and best treatments or outcomes.

**What's The Point**

While we can use "seeing strategies" to draw, we can also perceive a current problem from a new perspective by using a different frame of reference or by looking at it in a different light. I often remind myself of how we look at the heart electrically from 12 leads across the chest, from 12 positions or views. Most of our clinical practice exists, and can be viewed, in ever-larger contexts. The Permanente Journal is designed in a layered context. We look at "Clinical Contributions"—the core practice of Permanente medicine—and at "Health Systems Management"—the systems or processes in which we practice—and at "External Affairs"—those environmental, legislative, media and market forces that impact our practice and systems. Physicians may benefit by evaluating their practice in a larger context and from an external view: that of a colleague, another department or discipline, as a customer, from a competitor view, or over the long term.

Try drawing a picture, though if you don't take up drawing, or even doodling, or create pictures of ideas, you may want to encourage or engage your intuitive mind more actively to see or speak more clearly. Use 1 of the other 3 tools for intuitive thinking: a metaphor, a symbol, or a story. In addition, "staring into space" and "looking at nothing" are two human activities that tend to close down the analytical side of your brain and open up the intuitive side. This is an example of applying one of the five "seeing strategies": the perception of space. The outcome I would hope for is to heighten understanding and enhance communication between us for the benefit of the Permanente Medical Groups, our Health Plan partners, and our members.
External Affairs
Scott Rasgon, MD, Editor

The External Affairs section in this issue of The Permanente Journal will be exploring such topics as cultural diversity, brand strategy, and new ways of getting medical news to physicians in a computer-based system. We will also be taking a look at what's happening with the President's Commission on Managed Care.

Jean Gilbert PhD, from the Southern California Permanente Medical Group introduces the importance of cultural diversity in both medical practice and marketing health care. The marketing concept of brand strategy and branding Kaiser Permanente is discussed by Kathy Swenson and Vaughan Acton.

In the information age more medicine and health related articles are available every day than anyone can possibly keep up with. Tom Debley from the California Division reviews a system using computers to get important media related information out the health care providers.

Don Parsons, MD, our Washington lobbyist looks at the activities of the president's commission on managed care reform.

Jean Gilbert PhD, from the Southern California Permanente Medical Group introduces the importance of cultural diversity in both medical practice and marketing health care. The marketing concept of brand strategy and branding Kaiser Permanente is discussed by Kathy Swenson and Vaughan Acton.

The Clinical Contributions in this issue include a variety of topics which present a highly gratifying image of Kaiser Permanente medicine. The review entitled "Managed Genetic Care in the Largest HMO: The Challenge of Providing Genetic Services to 2.5 Million Members" by Drs. Bachman and Schoen presents a view of an area in which the authors and Kaiser Permanente are on the cutting edge of services offered in a field of rapidly increasing interest and practical importance.

The review entitled "A New Era in Colorectal Cancer Screening and Surveillance" by Dr. Grossman is a forthright authoritative opinion statement by a distinguished recently retired Kaiser Permanente physician; he and other clinicians and researchers in our organization have played a major role in this area of preventive practices to reduce morbidity and mortality from one of the commonest cancers in both sexes.

"Natural Rubber Latex Protein Allergy Prevention and Exposure Control" by Drs. Macy, Ms. Eck, and Dr. Huber reviews a common and vexing clinical problem and supplies much information about how this is handled in one of our largest Regions.

"Ambulatory Open Shoulder Surgery" by Dr. Sachs and Ms. Smith provides a fully documented clinical series about innovative management of an important common problem, with sufficient detail so that other facilities can—if they wish—adopt the procedures.

Finally, this issue includes a reprint of "The Management of Pneumonia (A Review of 517 Cases)" by Dr. Morris Collen, originally published in July, 1943 in the Permanente Foundation Medical Bulletin. This is a beautiful article, of high academic caliber; which provides a glimpse of Kaiser Permanente practice more than 50 years ago, and still includes much clinically relevant material. This article is placed into perspective by Dr. Elizabeth Andersen, MD, an infectious disease specialist in Oakland, who knows Dr. Collen.

This issue provides a variety of findings, reviews, analyses, and practice programs of interest and importance. Some, hopefully, will stimulate controversy. Civilized comment, critique, dissent, and objection are welcome; a lively Letters to the Editors section would add spice to the Journal.

Health Systems Management
Lee Jacobs, MD, Editor

In this issue of The Permanente Journal, a panel of six Permanente physicians from six different medical groups discuss their views on the primary care provider and specialist relationship, especially as it relates to referrals. As I listened to the panel discussions, I was impressed with the quality of the Permanente people working on this issue. I believe that you also will be impressed as you read about the innovations and approaches discussed by the panelists, representing frontline physicians on both sides of the primary care-specialist fence. However, what I found especially impressive was how the solutions that the discussants presented continuously had the patient in the forefront. Such a mindset is crucial as we design our future systems in this extremely competitive world.

It is the hope of those of us at The Permanente Journal that this round table discussion will create a dialogue across the Permanente Groups so that other views and approaches to this major systems challenge can be heard. Let us know your opinion! This is the role of The Permanente Journal—to provide a forum for such discussions. How well our Permanente Groups get the important issues on the table; how well we capture the deliberations through articles and reports; and how well we as Permanente Medical Groups leverage the knowledge gained, will in the future define our competitive advantage.
Ambulatory Open Shoulder Surgery

Introduction: During 1995, a coordinated orthopedic/anesthesia protocol was used on 100 consecutive patients having ambulatory open shoulder surgery. These patients had either Bankart repair, open acromioplasty, or rotator cuff repair. Ages ranged from 15 to 92 years. Anesthesia technique included induction with propofol (Diprivan), and minimization of intraoperative narcotics. Patients were injected with 60 mg ketorolac tromethamine (Toradol) 15 to 30 minutes before the conclusion of surgery, and wound edges were injected with 10 to 20 ml of 1% Marcaine with epinephrine at closure. Strong oral pain medication, usually including Percocet, was provided to each patient on discharge. Data were collected during the recovery room stay, and a nurse called each patient 3-12 months postoperatively.

Results: Ninety-seven percent of patients were satisfied with their physician or the emergency department during the first 48 hours after surgery, but in no case was readmission necessary. Seventy-nine percent of patients would “do it this way again.”

Conclusion: Ambulatory open shoulder surgery can be performed successfully and with high patient satisfaction, regardless of patient age and type of surgery. Currently, with the exception of arthroplasty, we perform all elective open shoulder surgery on an outpatient basis.

Materials and Methods

Rotator cuff repair, Bankart reconstruction, and open acromioplasty are the three most common open shoulder procedures performed at our institution. In 1995, 100 consecutive patients had one of these three procedures performed on an ambulatory basis. These patients were not selected, nor were they eliminated on the basis of age, social issues, or medical condition. The ages of our patients ranged from 15 to 92 years. The mean age was 50 years.

All surgical procedures were performed using a combined orthopedic/anesthesia protocol with the following features:

- All patients were discharged with a sling.
- The anesthesiologist minimized the intraoperative use of fentanyl and other narcotics. All patients were injected with 60 mg of ketorolac tromethamine (Toradol) 15 to 30 minutes before the conclusion of surgery, and all wound edges were injected with 10 to 20 ml of Marcaine with epinephrine.
- All patients were discharged with a sling. However, patients who had acromioplasty, with or without rotator cuff repair, were instructed to perform pulley exercises for 1 minute every hour to prevent stiffness.
- No patient went home with a Foley catheter, and no home services or rehabilitation facilities were used. Ambulatory surgery which can only be accomplished by extensive use of home care or rehabilitative facilities is often not a triumph and merely results in cost shifting.

By Raymond A. Sachs, MD
Jennifer H. Smith, BS

RAYMOND A. SACHS, MD, has been a staff orthopedic surgeon for the Southern California Permanente Medical Group for 15 years. He is an Assistant Clinical Professor of Orthopedics at UCSD as well as shoulder mentor for the San Diego Sports Medicine Fellowship. Not pictured JENNIFER H. SMITH, BS, a graduate of UCLA, is now in her third year of medical school at Washington University in St. Louis. She has a strong interest in orthopedic surgery, and will begin her residency in July, 1999.
Clinical contributions

Data were collected on these patients during the recovery room stay, and further follow-up data were collected by one nurse who called the patients 3 to 12 months postoperatively. Patients were questioned about nausea, vomiting, catheterization, and any other problems which warranted a trip to the emergency department or a phone call to their physician. They were asked to evaluate the quality and effectiveness of their pain control regimen. Finally, they were asked to rate their degree of satisfaction with all aspects of care.

Results

Open Bankart Repair

Twenty-six patients had Bankart repair. Their ages ranged from 15 to 50 years with a mean age of 24 years. Thirty-six percent of patients experienced nausea. None had urinary retention. One patient called the hospital from home. This patient was seen in the emergency department and admitted with a wound infection. Ninety-two percent were satisfied with their care from admission to discharge, and given the choice of inpatient or outpatient procedure, 85% said they would “do it this way again.” Of the four patients who said that they would not have the surgery done again on an ambulatory basis, only one expressed any displeasure with their management. The other three preferred an overnight stay for social reasons such as the inconvenience of a long drive home or living alone.

Open Acromioplasty

Eleven patients had open acromioplasty. Their ages ranged from 30 to 69 years with a mean age of 49 years. Twenty-seven percent of patients experienced nausea. None had urinary retention. One patient called the hospital because of a high level of pain. No patients were seen in the emergency department or admitted to the hospital. Ninety-one percent of patients were satisfied with the management of their pain in the recovery area, and 91% were satisfied with their pain medicine for home use. Ninety-one percent were satisfied with their care from admission to discharge, and 73% said they would do it this way again. Of the three who said they would not do the procedure again on an ambulatory basis, only one had any complaints with the protocol. Two preferred to stay the night for social reasons.

Rotator Cuff Repair

Sixty-three patients had rotator cuff repair. Their ages ranged from 42 to 92 years with a mean age of 61 years. Thirteen percent experienced nausea, and one had urinary retention which required a call and a visit to the emergency department for catheterization. No patients in this group were admitted to the hospital. All patients were satisfied with their pain management in the recovery period. Eighty-seven percent were satisfied with the

<table>
<thead>
<tr>
<th>Table 1. Incidence of postoperative problems in patients undergoing ambulatory open shoulder surgeries</th>
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</thead>
<tbody>
<tr>
<td>Problem</td>
</tr>
<tr>
<td>Nausea</td>
</tr>
<tr>
<td>Urinary Retention</td>
</tr>
<tr>
<td>Called for Help</td>
</tr>
<tr>
<td>Went to the E.R.</td>
</tr>
<tr>
<td>Admitted</td>
</tr>
</tbody>
</table>
The low incidence of postoperative problems enabled us to perform open shoulder surgery on an ambulatory basis with a high level of safety and without the necessity of cost shifting to expensive home care.

Table 2. Incidence of overall satisfaction in patients undergoing ambulatory open shoulder surgeries

<table>
<thead>
<tr>
<th></th>
<th>Bankart</th>
<th>Acromioplasty</th>
<th>Rotator Cuff</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Postoperative pain control</td>
<td>92%</td>
<td>91%</td>
<td>100%</td>
<td>97%</td>
</tr>
<tr>
<td>Home pain medications</td>
<td>96%</td>
<td>91%</td>
<td>87%</td>
<td>90%</td>
</tr>
<tr>
<td>Total care in hospital</td>
<td>92%</td>
<td>91%</td>
<td>95%</td>
<td>93%</td>
</tr>
<tr>
<td>Would do it the same way</td>
<td>85%</td>
<td>73%</td>
<td>78%</td>
<td>79%</td>
</tr>
</tbody>
</table>

References


pain medicine prescribed for home usage. (Percocet was commonly used during the first 48 hours, followed by acetaminophen/codeine combinations.) Ninety-five percent were satisfied with their care from admission to discharge. Seventy-eight percent said that they would do it this way again. Nine of the 14 who preferred an overnight stay had social reasons only for this preference.

Age
There were no significant differences in complications or in any measure of satisfaction when patients were grouped according to age.

Type of Surgical Procedure
There were no significant differences in complications or in any measure of satisfaction when patients were grouped according to pathology or type of surgical procedure.

Time of Hospitalization
Total time from admission to discharge averaged 8 hours. There were no significant differences between types of surgical procedures.

Discussion
Open shoulder surgery is typically performed in an inpatient setting due to the perceived need to control postoperative pain with parental narcotics as well as to manage significant levels of postoperative nausea and urinary retention. We postulated that nausea and urinary retention were due to the administration of intraoperative narcotics and that the need for both intraoperative and postoperative parenteral narcotics could be minimized by use of intraoperative Toradol and wound injection with a long-acting local anesthetic such as Marcaine with epinephrine.

Our own experience prior to 1994 in rotator cuff surgery had shown high levels of nausea and urinary retention and significant pain requiring 24 to 48 hours of parenteral narcotics. Simple adjustments in a combined orthopedic/anesthesia protocol allowed us to sharply diminish the incidence of these common side effects (Fig 1). We recognize that it is impossible to separate our protocol into its component parts for purpose of analysis. We present this protocol as one unified approach that has worked for us, acknowledging that there may be other protocols that could work as well or better.

Overall, in our group of 100 patients, only 21% experienced nausea, and only one patient had urinary retention. Only 3% of patients had problems of a magnitude that required a call to their doctor, a nurse, or to the emergency department. Only 2% visited the emergency department, and only 1% required admission (Table 1). As a whole, 97% were satisfied with the management of their pain while in the recovery area, and 90% were satisfied with their medication for home use. Ninety-three percent were satisfied with their care from admission to discharge, and 79% said that they would have their procedure done again in the same way (Table 2). Two thirds of patients who preferred an inpatient procedure did so for social reasons only.

Conclusions
The combined orthopedic/anesthesia protocol was successful in sharply reducing postoperative problems with pain, nausea, and urinary retention.

The low incidence of postoperative problems enabled us to perform open shoulder surgery on an ambulatory basis with a high level of safety and without the necessity of shifting cost to expensive home care.

The low incidence of postoperative problems and the high degree of patient satisfaction were not affected by the type of open shoulder procedure nor by patient age.

References

intermittent i.m. administration of ketorolac. Br J. Anaesth. 1991;67:235-238

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**Stages to Truth**

“Every truth passes through three stages before it is recognized. In the first, it is ridiculed, in the second it is opposed, in the third it is regarded as self-evident.”

Arthur Schopenhauer
Managed Genetic Care in the Largest HMO: The Challenge of Providing Genetic Services To 2.7 Million Members

Comprehensive clinical genetic services are offered to 2.7 million members in Northern California by the Kaiser Permanente Medical Care Program (KP), a not-for-profit HMO. Four genetics centers are staffed by clinical geneticists, genetic counselors, nurses, and laboratory technologists, who together provide patient and physician education, genetic screening, and prenatal, infant, and adult evaluation. These centers provide genetic care for 19 KP medical centers and 16 satellite clinics. Besides offering lectures and teleconferences, the geneticists publish a newsletter for up to 1200 pediatricians, obstetricians, and other relevant specialists on how to use genetic services. Clinical services offered to members include individual, group, and telephone consultations, and easy access to geneticists is provided for primary care providers who have questions about genetic care. In-house laboratory services include blood and tissue cytogenetic analysis, DNA testing, and testing of prenatal blood and amniotic fluid; specialized testing for inborn errors of metabolism is centralized at KP Northern California Divisional Laboratory. An Interdivisional genetics data system is being established to link Northern and Southern California and the Northwest (Portland and Hawaii). Under the newly established national KP Care Management Institute (CMI), we propose to offer selective genetic services to KP facilities across the country using computer linkages and new technologies such as telemedicine consultation.

Introduction

Genetics is a unique specialty: provision of genetic services encompasses all medical fields and age groups. Geneticists are rapidly acquiring new abilities because of technologic advances which have largely resulted from the Human Genome Project.

The Kaiser Permanente Medical Care Program (KP), a not-for-profit HMO, offers comprehensive clinical genetic services to 2.7 million health plan members in Northern California; Southern California has a similar membership. These services are coordinated by a group of clinical geneticists who provide current genetic care and plan for future services. The goal is to offer appropriate, up-to-date, comprehensive, high-quality genetic services which are also cost-effective.

In Northern California, KP is concentrated in the San Francisco Bay area but extends over 200 miles, including 19 hospitals with outpatient departments as well as 16 freestanding outpatient facilities. Genetic services are provided subregionally at 4 centers—San Francisco, Oakland, San Jose, and Sacramento. Each genetics center is staffed by clinical geneticists and genetic counselors and may also have nurses and laboratory technologists.

Some genetic centers are responsible for doing specific tasks for the entire area. For instance, only 2 cytogentic laboratories and 1 molecular genetics laboratory exist. All genetic perinatal screening programs are administered from a single location (Oakland). The 4 genetics departments are staffed by 9 clinical geneticists (MDs), 35 genetic counselors (MSs or equivalent), and 10 genetic nurses or metabolic nutritionists (MSs).

Services are coordinated through meetings with geneticists who provide similar services in other areas in which KP operates (the Northwest and Southern California). In the 3 areas, KP serves about 5.8 million members, a population similar to that of several small European countries (eg, Norway, Denmark).

Divisional genetic policy is established through periodic meetings of geneticists in charge of the 4 centers with representation from the genetic counselors and laboratory personnel. A single divisional genetics budget is shared by the 4 centers. Budgetary decisions are arrived at by consensus based on current and future genetic advances relative to estimated costs.

Comprehensive services include patient education, provider education, genetic screening, prenatal, neonatal, child, and adult evaluation, multispecialty clinic services, laboratory services, resident education, and research.

Patient and Provider Education

Providers, physicians, and other professionals must know what services are available and how to use the system best. The genetics program functions most efficiently with appropriate referrals and requests for genetic laboratory tests.

We found that a useful way to educate providers to properly use genetic services was through a periodic, short newsletter titled The Screen, which is directed to appropriate specialists, usually pediatricians and obstetricians. The mailing list of up to 1200 providers is tailored to the topic (eg, prenatal and neonatal hemoglobinopathy screening, triple-marker screening).
We have begun providing The Screen to other KP divisions and have uploaded it to the bulletin board section of our e-mail network, which has made it even more accessible. Other modes of communicating with our providers include lectures, minicourses, teleconferences, and personal interaction.

Health plan members are informed about genetic services through health education centers as well as through a quarterly newsletter, Planning for Health. The health education centers are located in each of the larger facilities and consist of a patient library with exhibits and cubicles for viewing videotapes; educational material is available for distribution, loan, or purchase.

We try to target genetics education to those patient groups for whom it is most relevant. For example, pregnant patients are informed of our services at prenatal classes.

**Role of the Primary Care Physician**

Primary care physicians (mainly obstetricians and pediatricians), as well as other providers, are kept informed of genetic services through a variety of interfacility communications such as in-service education at prenatal clinics and labor and delivery areas. Genetic counselors, nutritionists, and nurse coordinators provide outreach services at the smaller clinics through regularly scheduled meetings and in response to quality and utilization surveys and local requests. Geneticists and genetic counselors are available for informal telephone consultations. Patients as well as providers can call genetic counselors directly for answers to questions on such issues as teratogens, or family history of genetic disorders and can request a formal consultation.

In 1994, at the 4 genetics centers, 5464 phone consultations with patients and primary care providers and 8515 genetic care office visits were provided. All office consultations are followed by a medical report and genetic counseling needs of patients are reviewed.

**Perinatal Screening and Genetic Services**

The main mission of both HMOs and geneticists is disease prevention. Instituting preventive measures before conception is ideal, but often the family does not become concerned until conception has occurred.

The following genetics programs are offered during pregnancy: 1) genetic questionnaire; 2) hemoglobinopathy screening (for S, C, and E hemoglobins); 3) thalassemia screening (for α- and β-thalassemia); 4) maternal serum alphafetoprotein (MSAFP) screening (for neural tube defects, Down syndrome, and other abnormalities); 5) Tay-Sachs disease (in Ashkenazi Jewish and French Canadian persons); 6) fetal ultrasonography; 7) amniocentesis/chorionic villus sampling; and 8) “triplet-marker” screening (an extension of MSAFP screening, mainly for Down syndrome, which has been offered through a state program since mid-1995).

In addition to prenatal testing, the genetics program manages mandated neonatal testing, including screening for phenylketonuria, galactosemia, hemoglobinopathy, and hypothyroidism. Tracking and follow-up of neonatal screening programs is implemented through a special contract with the California State Disease Branch.

Because of our ability to track and monitor prenatal and neonatal patients with computer programs, we have added infectious disease monitoring to our genetics program, including monitoring of prenatal and neonatal patients for syphilis, hepatitis B, and human immunodeficiency virus (HIV). We are currently developing computer linkage between Northern and Southern California to track all prenatal hepatitis B and syphilis cases from the 60,000 KP newborn infants born annually in the state. The potential exists for national expansion of such programs. We are also evaluating how to determine the best way to prevent group B streptococcus infection in newborn infants and are developing a system for tracking mammography results as part of a breast cancer management program.

**Clinical Genetic Services**

Aside from the screening programs, referred neonates, infants, and older children (as well as some
adults) are evaluated for birth defects or genetic syndromes by teams of genetic counselors and clinical geneticists (MDs). Pre-evaluation information (records and tests) is accumulated by the genetic counselor; who establishes a relationship with the family and constructs a genetic pedigree. This information is reviewed by the clinical geneticist before seeing the patient and family. After the patient is seen by the geneticist and counselor, the genetic counselor is responsible for follow-up evaluation and for helping the patient to receive the recommended testing and treatment. The genetic counselor also sends a written summary to the family of the affected person.

Presymptomatic or predictive testing, an outgrowth of new technologic advances, is also available through the genetic departments. Huntington’s disease, which can be diagnosed before onset of symptoms, is an example of a disorder for which presymptomatic counseling and testing are available for patients at risk.

If a patient is seen at >1 facility or has laboratory work done at different centers, all medical data are available through a computer medical record stored in a genetics data base.

Genetic Laboratories

Our large population of members, including about 30,000 deliveries annually, has permitted us to develop our own genetics laboratories. We believe that internal provision of services allows for improved quality as well as cost control. In 1994, our genetic laboratories analyzed 3770 amniocentesis and 148 chorionic villus samples as well as 17 percutaneous umbilical vein blood specimens. Cytogenetic testing was done on 1082 blood and 265 cancer samples. Our DNA laboratory began operation in mid-1994 and is currently analyzing about 25 specimens weekly; work includes testing for Fragile X syndrome, Huntington’s disease, Prader-Willi syndrome, cystic fibrosis, and sickling disorders as well as doing Y-probes. We plan to improve cost-effectiveness by offering to do molecular studies for other KP divisions.

Most cytogenetic studies use amniocentesis specimens, but peripheral blood, bone marrow, chorionic villus sampling, and fluorescent in situ hybridization (FISH) comprise about 25% of the studies. In addition, we are doing an increasing number of bone marrow studies for oncologists.

Currently we have an active program for breast cancer risk counseling as well as an intramural innovation research grant for tracking breast cancer patients.

Clinical Research

Although providing clinical service is the primary role of an HMO, a unique opportunity exists to engage in relevant clinical research such as outcome analysis and studies of the cost-effectiveness of genetic services.

An interregional genetic data base has been established and has stored enough data for selected clinical research. The data base is housed and supported by the Center for Health Research, the research arm of the KP Northwest Division in Portland, Oregon.

The size and organization of our genetic and perinatal screening services has permitted interested clinicians to engage in clinical research, and scientific presentations and publications have resulted.

Outcome Measures

The perinatal screening and interdivisional genetic data bases provide information which allows the outcome of selected genetic and metabolic disorders to be measured. As an example, we studied outcomes for more than 160 patients with congenital hyperthyroidism whose cases were followed up since 1979, as well as for a group of children with the D/G heterozygotic form of galactosemia. We have completed an evaluation of prenatal congenital toxoplasmosis screening and are beginning a cost-effectiveness analysis of prenatal human immunodeficiency virus (HIV) testing. Periodic patient surveys indicate a high level of satisfaction with the genetic services offered to members.

Care Management Institute (CMI)

The CMI was recently established jointly by the Permanente Federation and the Kaiser Foundation Health Plan (KFHP) to improve the quality and effectiveness of care delivered to KP members nationally and to discover and share new knowledge with the health care community. The aims of the KP Northern California Genetics Program to collaborate with other divisions in a number of pilot projects are relevant to these goals. Current programs which could serve as models for transportability under CMI include 1) prevention of perinatal hepatitis B and syphilis transmission with tracking of cases; 2) voluntary prenatal HIV testing; 3) consultation for newborn
screening tests; 4) special genetic laboratory studies; 5) metabolic nutrition services and consultation for inborn metabolic errors; 6) a system for tracking breast cancer; and 7) genetic and multispecialty clinic consultations through telemedicine.

Centralized management could implement these programs through computer linkage, on-site consultation, and staff training to provide standardized, cost-effective in-house KP genetic services.

Summary and conclusion

Comprehensive, effective, and highly technical genetic services can be developed in a managed care system. Providing preventive care—the primary mission of an HMO—coincides with providing genetic services. Coordination and divisional-interdivisional cooperation are the keys to comprehensive, cost-effective genetic care.

The extensive national KP membership (currently 8.8 million members) permits us to develop a program to export certain genetic services. Although smaller divisions might not be able to develop these highly specialized programs, they could use computer linkage and new technologies such as telemedicine to work collaboratively with the larger areas such as KP Northern California to provide current, cost-effective genetic services to these members.

Acknowledgment

The Medical Editing Department, Kaiser Foundation Research Institute, provided editorial assistance.

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References


“A Dollar Song

“They’re only puttin’ in a nickel, but they want a dollar song.”

Song Title
EVANY ZIRUL, DO, MFA, is an Ear, Nose, Throat and Facial Plastic Surgeon for the Permanente Medical Group of Mid-America, PA in Kansas City, Missouri. Another piece of her work can be seen on page 53.

"Select-a-Nose" by Evany Zirul, DO, MFA
The recently documented increasing incidence of natural rubber latex (Hevea brasiliensis protein allergy (HBPA) in health care workers and the general population has led several national organizations and governmental agencies to recommend that health care organizations: modify use of latex products, particularly gloves; implement mechanisms to identify persons with HBPA; and initiate strategies to mitigate HBPA development.

To respond to this emerging challenge to patients and health care workers, the Kaiser Permanente California Division and Northwest Division developed the Western Divisions’ “Latex Protein Allergy Prevention and Exposure Control Plan.” This collaboratively developed plan builds on the Hawaii Division’s previous work and provides information including 1) identification of patients and health care workers with HBPA; 2) recommendations for creation of a health care environment that is safe for patients and health care workers with HBPA; and 3) to minimize the risk of developing HPBA (latex-safe strategies). Implementation of this plan should facilitate system-wide consistency in the evaluation, management, and care coordination of health plan members and health care workers with HBPA.

As future health care issues require greater collaboration between physicians and non-physician support personnel, this collaborative effort could serve as a model for development of similar comprehensive clinical management and operational guidelines.

Introduction

The purpose of this article is to expand awareness of the problems associated with natural rubber latex (Hevea brasiliensis) protein allergy (HBPA) and to put the risks of inaction into context. This paper includes a review of the mechanism of HBPA, who is at risk, and how to diagnose significant HBPA. Finally, it documents what our organization is doing to create a safer work and patient care environment through the development and implementation of the Kaiser Permanente Western Divisions’ “Latex Protein Allergy and Exposure Control Plan,” which is available from the authors or from the Western Divisions’ Latex Allergy Management Committee.

The incidence of HBPA has dramatically increased with the widespread use of natural rubber latex gloves needed to enact the universal precautions necessitated by the HIV epidemic. In a summary produced in 1993, the United States Food and Drug Administration (FDA) reported over 1100 adverse events and 15 deaths associated with HBPA. All deaths reported to date have been from parenteral exposure such as from barium enema cuffs. The most severe symptoms from routine occupational exposures reported to date are urticaria, asthma, and, very rarely, anaphylaxis.

Although only a small (<5%) fraction of a population that may develop serologic evidence for allergic antibody to latex rubber proteins can be 2 to 10 times higher than the fraction that actually has clinical symptoms. The costs associated with caring for such persons can be substantial. The fraction of a
population that may develop serologic evidence for allergic antibody to latex rubber proteins can be 2 to 10 times higher than the fraction that actually has clinical symptoms. Antibody-positive individuals are only potentially allergic to latex but can account for, by CDC estimates, up to 10% of the health care worker population. One measure of the difference between potential allergy and significant allergy is the lack of anaphylaxis seen during surgery. Fewer than 1 in 5000 unscreened individuals has unexplained, possibly latex-protein-induced anaphylaxis during surgery, yet a much higher fraction are antibody-positive. The fraction of the general patient population that has HBPA is lower than health care workers because of lower levels of exposure to natural rubber latex proteins and is probably <3%. The health care environment has historically been a significant source of latex protein sensitization for the general population.

Natural Rubber Latex Protein

Natural rubber (cis-1,4-polyisoprene) is a processed plant product of the commercial rubber tree Hevea brasiliensis. It contains variable amounts of water-soluble proteins that can be recognized as allergens by the human immune system. With recurrent exposure, a certain fraction of the population can become sensitized. Synthetic latex and some rubber products lack these potentially allergic proteins, though individuals may still have problems with contact sensitization from chemical additives in processed rubber. Natural rubber products from other sources, such as guayule (Parthenium argentatum) contain other potential but less well-studied, allergenic proteins.

Mechanism of Latex Allergy

Natural rubber latex protein allergy (HBPA) is defined as an IgE-mediated (Type I hypersensitivity) reaction against water-soluble proteins contained in natural rubber products made from the sap of Hevea brasiliensis. Exposure to latex proteins in allergic persons causes the immediate onset of mast cell mediator release. Histamine and other preformed mast cell mediators cause acutely increased vascular permeability and tissue edema. Mast cells also contain mediators that cause delayed inflammatory effects. Immediate hypersensitivity reactions have been elicited by latex protein exposure dissolved from rubber gloves, condoms, barium enema catheters, bladder catheters, balloons, cefodams, toys, dental prophylactic cups, and sports equipment. The clinical manifestations of these reactions include itching, systemic urticaria, rhinitis, conjunctivitis, laryngeal edema, bronchospasm, hypotension, asthma, feeling of impending doom, anaphylaxis, and, if untreated, death.

Routes of Exposure

Latex protein exposure can occur by parenteral, mucosal, inhalation, and cutaneous routes. Anaphylaxis, a systemic allergic reaction, is more likely to occur the higher the level of antigen exposure is in the circulation and the faster the dose is delivered. Thus, in equivalently HBPA persons, latex protein exposure through contact from gloves on internal organs during surgery or with a latex-cuffed barium enema catheter will cause greater problems than latex protein on intact skin. The inhalation of latex proteins adherent to the inert powders from gloves can dissolve on the mucus membrane surfaces of the upper airway and cause significant allergic reactions such as allergic rhinitis and asthma. Most environmental exposure to latex proteins cause reactions no more severe than cat protein exposure causes in a person allergic to cats.

Diagnosis of HBPA

The key point in the diagnosis of potentially life-threatening HBPA is the clinical history. Those who report itching, rhinitis, swelling, hives, or asthma upon latex rubber exposure or who have had unexplained anaphylaxis after medical or surgical procedures, should be screened for IgE antibodies to latex with an ELISA test. Within Southern California Kaiser Permanente, the latex ELISA test, manufactured by Upjohn-Pharmacia, is conducted by the Immunology Laboratory at the Los Angeles Medical Center under the direction of Bruce Goldberg, MD, PhD. Within the Kaiser Permanente system, the predictive value of the ELISA has been between 92% and 95%. Inquiring for a latex allergy history and sending the confirmatory test if the history is positive should become a routine part of obtaining the drug intolerance history.

If the Latex ELISA is ≥ Class 3, consider the history-positive subject to truly have HBPA. As with any test, false-negative latex ELISA tests can occur; but given the lack of a gold standard, the actual level is difficult to determine short of a diagnostic clinical challenge test. Those at risk of anaphylaxis often have high levels of anti-latex IgE antibodies and have Latex ELISA of ≥ Class 4. If a person has a negative ELISA (≤ Class 2) test, yet has a compelling clinical history of latex allergy, skin testing can be performed.

There is currently no FDA-approved skin test reagent for diagnosis of latex allergy. To circumvent this problem, a quantitated latex protein solution has been produced by Eric Macy, MD, in the Allergy Department at the Claremont Mesa facility in San Diego for use within the Kaiser Permanente Health Care System. The protein content of a saline extract of raw ammoniated latex was measured and diluted to

“Immediate hypersensitivity reactions have been elicited by latex protein exposure dissolved from rubber gloves, condoms, barium enema catheters, bladder catheters, balloons, cefodams, toys, dental prophylactic cups and sports equipment.”

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“The key point in the diagnosis of potentially life threatening HBPA is the clinical history.”
0.01 mg/ml and 0.1 mg/ml for sequential puncture tests. If both were negative a single intradermal test using 0.001 mg/ml was used. This reagent has been safely used in more than 50 people and will identify a fraction of those who have latex ELISA ≤ 2 as producing some allergic antibody to latex proteins. Those who have low-level ELISA and positive skin test results should avoid natural rubber latex proteins, though they are extremely rare.

**Populations at Increased Risk for Latex Hypersensitivity**

Persons who have high levels of latex protein exposure are at increased risk for latex hypersensitivity even if they have had no clinical symptoms. Patients with a history of spina bifida and genitourinary tract anomalies, who have needed multiple surgical procedures and catheterizations, are at particularly higher risk of developing latex protein hypersensitivity, and 18% to 68% of such individuals, in the United States, reported to have some evidence for latex allergy. In contrast spina bifida patients from Venezuela who were not exposed to latex protein did not have evidence of elevated levels of HBPA.7

Persons such as health care workers, who have frequent exposure to latex proteins, are more likely to become sensitized than most in the population.7 Because the rate of clinically significant reactions is much less than the rate of positive diagnostic tests, random or universal screening is not recommended.6

**Management of HBPA Within Kaiser Permanente**

The formal diagnosis of latex allergy requires both clinical symptoms upon exposure and positive confirmatory test results.7 The 1996 American Academy of Allergy, Asthma and Immunology (AAAAI) and the 1997 National Institute for Occupational Safety and Health (NIOSH) recommendations for latex avoidance and care management are based on avoidance of latex products as the only measure that can prevent serious allergic reactions to latex.13,14

In response to published reports documenting an apparent increase in latex protein allergy among HCWs and patients and prior to publication of the AAAAI and NIOSH recommendations, a Latex Allergy Prevention and Exposure Management Committee was formed consisting of Kaiser Foundation Hospitals, Health Plan, and Permanente Medical Group representatives from the Northwest, and Northern and Southern California Divisions. The disciplines involved in the Committee included: Perioperative Services, Departments of Allergy and Dermatology, Nursing, Materials Management, Employee Health, Product Utilization, Laboratory, Pharmacy, Medical Center Administration, Safety, Admitting, Risk Management, physicians, and selected health care workers.

This multidisciplinary committee first met in late 1995 to assess the impact of latex protein allergy within the Kaiser Permanente Western Divisions, and initial investigations have demonstrated a prevalence comparable with the CDC estimates noted earlier. To address this situation, throughout 1996, the Committee developed a Latex Protein Allergy Prevention and Exposure Control Plan that ultimately incorporated all the essential components of the AAAAI recommendations. The plan is designed to 1) create a latex-safe environment across the continuum of care for latex-sensitive person; 2) reduce latex exposure in health care workers; and 3) improve our members' health and satisfaction.

The Exposure Control Plan was formally approved by senior management and physician leadership of the participating Divisions in late 1996; to facilitate implementation of the plan, a symposium on latex allergy for physicians was held in December 1996. Additional staff and patient educational materials have been produced and distributed within the Western Divisions.

Additionally, a comprehensive non-latex and powder-free latex glove evaluation and recommendation has been completed, and Purchasing and Materials Management staff have been educated to consider potential latex protein exposures when making product selections.

**Latex Allergy Prevention and Exposure Control Guidelines**

The Exposure Control Guidelines address the entire continuum of care, including inpatient, outpatient, and home health. Key points in the guidelines include 1) mechanisms to assure that patients in high-risk groups are provided a latex-safe environment as a part of their medical care and that all neonates are provided a latex-safe environment; 2) mechanisms to promote prevention of latex sensitivity by assuring that powder-free, low-allergen (as defined by FDA standards), and non-latex gloves are provided to reduce aeroallergen levels and to decrease the sensitization of HCWs and patients; 3) mechanisms to assure that patients in high-risk groups are identified and tested; 4) inclusion by health care providers of latex-related allergy questions in establishing, monitoring, and recording the patient's medical history; 5) recommendations for patient education; 6) strategies to assure that non-latex devices and latex-safe areas are available for patients and health care workers allergic to latex; 7) establishing policies that ban all latex products from Kaiser Permanente gift stores (ie, ornamental balloons).
To facilitate implementation of the Latex Protein Allergy Prevention and Exposure Control Plan each medical center has convened a local “Latex Allergy Management Committee,” modeled after the Interdivisional Committee. In each area of the health care setting, the basic procedures of room selection and preparation, communication strategies, special precautions and considerations for external and internal product use, management of intravenous therapy and medication administration, management of emergencies, and educational needs are reviewed by the local committee and revised appropriately to minimize latex protein exposure. Substantial progress has been made in implementation of the Latex Exposure Control Plan within the participating Divisions, and completion is on target for the first quarter of 1998. Although every area of the care environment may require modification to effectively manage latex allergy, special consideration should be given to Perioperative Services because of the potential for intraoperative anaphylaxis. "Although every area of the care environment may require modification to effectively manage latex allergy, special consideration should be given to Perioperative services because of the potential for intraoperative anaphylaxis.”

Quality Improvement

Because of the potential workers’ compensation and disability reimbursement costs and the organization’s liability associated with latex allergy, establishing a quality improvement program that includes latex-related indicators is essential. Suggested indicators or areas for possible investigation include: workers compensation claims, union grievances, sick leave, malpractice claims, adverse anesthesia events, and unexplained anaphylaxis events. Additionally, monitoring of any adverse clinical events occurring despite the latex avoidance procedures in place of any error in latex avoidance and the selected glove program should be ongoing to identify any unforeseen problems (ie, contact dermatitis, decreased barrier protection, etc.).

Conclusion

Kaiser Permanente strives to maintain an environment that is conducive to, high-quality patient care and to the health, safety, strategic development, and retention of a quality health care team. Latex has been identified as a potentially harmful, and sometimes lethal, antigen to allergic patients, employees, and physicians.

From our experience to date, through implementation of a comprehensive latex allergy prevention and exposure control plan and a quality improvement program that includes latex allergy-related indicators, improved patient care, and a reduction in incidence of latex-related incidents can be realized.

References

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2. Dillard SF, MacCollum MA. Reports to the FDA: Allergic reactions to latex containing medical devices. 1993. FDA, Center for Devices and Radiological Health, 1300 Piccard Drive, Rockville, Maryland, USA 20850.
The following is a distillation of my beliefs, primarily about endoscopic screening and surveillance of average-risk subjects, as formulated from my clinical experience, research, and knowledge of the literature. One of several general viewpoints, but one I hold quite strongly, it contains statements and recommendations that can be considered controversial, although to a lessening extent, it appears, as further studies are reported. The list of references also is highly selective, limited to the landmark and review papers that, for the most part, form the basis for my views.

In the United States during the 1940s through the 1970s, cancer clinics in urban areas offered rigid sigmoidoscopy to persons who wanted screening for rectal cancer. These were probably very effective in reducing rectal cancer deaths as demonstrated by Gilbertsen and Nelms.1 In the 1970s, the St. Mark’s Hospital group showed that virtually all colorectal cancers develop from adenomas, usually large and villous, and that the process occurs very slowly, over 5 to 35 years; advances in fiber-optics and engineering led to development of the colonoscope; and its implementation was accelerated by the introduction and widespread use of standardized fecal occult blood testing. In the 1980s, the flexible sigmoidoscope replaced the rigid proctoscope and afforded the ability to find the majority of colorectal cancers and advanced adenomas.3

The subsequent profusion of published studies, few of which were prospective or controlled, led the American Cancer Society and the gastroenterologic societies to publish guidelines,4 which included, starting at age 50 years, lifelong annual stool Hemoccult testing, sigmoidoscopy every 3 years, colonoscopic follow-up of any adenoma found, then lifelong surveillance colonoscopies. These guidelines were based largely on the fear that 1) all adenomas must be considered premalignant; 2) the presence of a single adenoma of any size or type puts the patient at high risk for malignancy; and 3) new polyps arise quickly and must be removed, lest they progress to fatal malignancies.

The Flaw in the Guidelines
Understanding what was wrong with those concepts comes from reexamination and comprehension of the true role of the small tubular adenoma (TA), defined as a TA <1 cm in diameter. (Another definition: advanced adenoma = TA >1 cm in diameter or containing villous elements or severe dysplasia.) It has been known for almost two decades that small TAs only occasionally develop villous elements and rarely contain severe dysplasia or carcinoma5 and that they grow very slowly, if at all.6 Several studies have demonstrated that a small TA in the distal bowel does not serve as a marker for proximal precancerous or malignant neoplasms.6-9 In a 1989 Kaiser Permanente study, Grossman et al showed that only 3% of subjects who had only one small tubular adenoma removed at proctoscopy were found to have a proximal advanced adenoma on total colonoscopy: the same findings that would be expected in the general population.4 A similar study in 1994 verified those results.7 At St. Mark’s Hospital, Atkin et al showed that after removal of their small rectal TAs and no further procedures, patients were at less-than-expected risk for eventual development of colorectal cancer8-10. On the other hand, all of these studies showed clearly that when the index lesions are advanced adenomas, patients are at increased risk of having advanced neoplasms proximally and should therefore have colonoscopy. The large, ongoing Kaiser Permanente sigmoidoscopic screening program10 has not yet reported its data, which show that even subjects found on screening to have large TAs in the left colon do not have increased prevalence of advanced neoplasms in the right colon when compared with control subjects. Nor is the presence of several small TAs at screening sigmoidoscopy an indication for colonoscopy.

Periodic follow-up colonoscopy after initial clearing of the colon has been reported in large surveillance studies to show “unimportant pathology.” Of the adenomas found at such surveillance colonoscopies, 84% to 90% are small (<1 cm) and mainly tubular; they are evenly distributed and rarely have high-grade dysplasia.10,11 Careful analysis of costs and benefits of frequent colonoscopic surveillance after clearing a patient’s colon shows it is usually not appropriate12—the most important exception being the universally accepted need for aggressive surveillance after removal of a sessile villous polyp.

In recent years, there has been partial acceptance of these concepts of less aggressive colonoscopy with the allowance that perhaps the finding of a 5 mm tubular adenoma at screening sigmoidoscopy does not mandate a colonoscopy and that routine sigmoidoscopy can be done as infrequently as every 5 years.
Sigmoidoscopic Screening

The 1978 Gilbertsen report was uncontrolled and had poor documentation of data but suggested that screening proctoscopy could protect against rectal cancer. In a 1992 case control study from Kaiser Permanente, Selby et al showed convincingly that subjects who had rigid proctoscopic clearing of colorectal mucosa were 70% less likely to die from cancer of the rectum or distal sigmoid colon, and that they were protected for at least 10 years.13

Flexible sigmoidoscopy reaches 50% to 75% of advanced neoplasms (advanced adenomas plus adenocarcinomas).3 Additional advanced neoplasms will be found in the right colon when sigmoidoscopic discovery of advanced neoplasms leads to colonoscopy. For a sigmoidoscopic screening program to be logistically feasible, total colonoscopy as a follow-up for sigmoidoscopic findings must be limited to patients who have had more than a small TA in their left colon. Subsequent surveillance must also be limited as described.

The role of family history in making decisions about screening and surveillance remains ill-defined. If a subject has a first-degree relative who had colorectal cancer at age 55 years or younger, or two first-degree relatives who had the disease at any age, we perform early screening colonoscopy, in conformity with the recommendations of the American Cancer Society.

Hemoccult Screening

Hemoccult II, the most studied fecal occult blood test (FOBT), is usually positive in 1% to 4% of subjects and has sensitivity for cancer as low as 25% to 50%.14 Cancer is found in about 10% of patients testing positive. In the highly publicized Minnesota study, slides were rehydrated, increasing sensitivity at great cost (in both dollars and complications). Ten percent of subjects had positive tests, and cancer was found in only 2% of the resulting colonoscopies.15

Subsequent analysis of this study suggested that much of the reduction in cancer deaths was due to chance colonoscopy, not to FOBT.17 In 1996, Allison et al showed that by using a combination of two fecal occult blood tests, one highly sensitive and the second highly specific, as much as 65% of cancers could be found.16 Thus, one could add such fecal occult blood testing to a sigmoidoscopic screening program and succeed in diagnosing 85% of colon cancers and nearly that percentage of villous adenomas.

Surveillance After Colon Cancer Resection

In the 1989 AGA/ASGE position paper,4 all patients having curative surgery for colorectal cancer were mandated to undergo an intensive, multifaceted follow-up protocol. The protocol includes frequent interviews and examinations, blood tests, chest films, and colonoscopies for the rest of the patient's life. This aggressive surveillance regimen was based on several questionable premises: first, that every patient with colorectal cancer is at high risk for development of another colorectal cancer; and second, that discovery and treatment of recurrences can save enough lives to make worthwhile both the immense cost and the lifelong ordeal of following that protocol.

Everyone agrees that perioperative (preferably preoperative) colonoscopy should be performed in all colorectal cancer patients to establish the presence or absence of synchronous neoplasms, and to remove any lesions found. However, the rest of the mandate has little evidence to support it. The risk for subsequent development of a second colorectal cancer is quoted variably from 2% to 6%, which is less than the risk of developing a first colorectal cancer in the general population. This risk holds for someone whose cancer is an isolated neoplasm. However, the cancer patient who is young (in 40s or younger) or has, in addition to the cancer, synchronous advanced neoplasms, is at high risk for development of a second cancer and should be in a surveillance protocol. As for curing patients with recurrences, studies using aggressive systematic follow-up protocols have usually proved futile. Suture line recurrences generally occur in patients who already have disseminated disease, so that survival rates are improved by < 0.5% by the occasional successful resection of these recurrences. Analysis of CEA monitoring shows it is expensive, inefficient, and potentially harmful because of the many unsuccessful operations, particularly in elderly, poor-risk candidates.19

Main Concepts

1. Screening sigmoidoscopy performed on most people every 10 years starting in their sixth decade of life would result in a significant reduction in colorectal cancer mortality.

2. The small (<1 cm) colorectal TA is a common age-related finding. It rarely grows to become a malignancy—nor is it a marker for synchronous advanced neoplasms. Larger TAs now appear to share this non-marker quality. Conversely, adenomas containing villous or highly dysplastic architecture are the main participants in the adenoma-carcinoma sequence and are markers for synchronous and metachronous advanced neoplasms.

3. As fecal occult blood tests evolve and improve, stool testing will become a more effective part of screening programs.
4. The development of cancer from a colonic adenoma is a very slow process, taking from 5 years to 25 years.
5. After a colon cancer is resected, searching for and treating recurrent cancer is usually futile. If the primary cancer was not accompanied by other advanced neoplasms, the likelihood of a second colon cancer developing is similar to the chance an average-risk person has of developing a first colon cancer (about 5%).

Recommendations

1. Start colorectal cancer screening at about age 55 years with a flexible sigmoidoscopy. If results are negative (90%), tell the patient to return in 10 years for another sigmoidoscopy.
2. Remove small polyps at sigmoidoscopy, or measure and biopsy each small polyp. If the polyp is a TA and fully removed, repeat sigmoidoscopy in 5 years.
3. When sigmoidoscopy reveals a large polyp or biopsy shows a polyp to contain villous elements or high-grade dysplasia, total colonoscopy is indicated.
4. If colonoscopy shows no other lesions, or only a few tiny TAs in addition to the completely removed index lesion, do sigmoidoscopic follow-up in 5 years.
5. If a patient undergoing cancer resection is shown to have no other advanced neoplasms by perioperative colonoscopy, surveillance sigmoidoscopy or colonoscopy in 5 years is appropriate follow-up. If the cancer patient is unusually young or has other advanced lesions removed at perioperative colonoscopy, the first surveillance colonoscopy should be done in 3 years.

References
This is the second in this series of reprints from a quarterly publication, the Permanente Foundation Medical Bulletin, which Dr. Morris Collen edited from 1943 to 1953. This entry (from Vol. 1, No. 1; July, 1943) is one of Dr. Collen's numerous splendid contributions to the Bulletin. The article is accompanied by a perceptive analysis written by Dr. Elizabeth Anderson, an Infectious Disease subspecialist who knows Dr. Collen.

- Arthur Klatsky, MD, Section Editor

The Management of Pneumonia (A Review of 517 Cases)
Morris F. Collen, MD and Gerhardt L. Dybdahl, MD

In the eight month period from September 1942 to May 1943, 517 patients with pneumonia were treated at this hospital. The diagnosis of pneumonia was substantiated in every case by a positive roentgenogram of the chest. No questionable cases of “minimal pneumonia,” “pneumonitis,” or similar indefinite diagnosis were included in this series. Patients with pneumonia as a contributory diagnosis to another illness were excluded.

Etiological Classification

Table 1 indicates that in the great majority, the pneumonia was due to the pneumococcus. Type VII pneumococcus was the most frequent specific type encountered and was also associated with the highest mortality. The gross mortality for the 338 patients with pneumococcal pneumonia was 11.5 percent. This figure compared favorably with the report by Bortz\(^2\) of 11.7 percent mortality on over 9000 patients with pneumococcal pneumonia. Of the 121 cases of “undetermined” etiology, the majority were probably pneumococcal in origin, but the organisms were not isolated due to unsatisfactory sputum samples.

Table 1. ETIOLOGICAL CLASSIFICATION OF 517 CASES OF PNEUMONIA

<table>
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<th>Cases</th>
<th>Deaths</th>
<th>% Mortality</th>
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<td>338</td>
<td>39</td>
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<td>Staphylococcal</td>
<td>12</td>
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<td>8.3</td>
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<td>15</td>
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<tr>
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<td>42</td>
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Thirty-one patients were classified as having pneumonia of virus etiology, or “atypical” pneumonia, because of the characteristic roentgenogram showing a pneumonic infiltration of the central or lower left lung fields, associated with a low leukocyte count, slow pulse, scanty sputum and failure to respond to sulfadiazine therapy.

Complicating Conditions

Since sulfadiazine has been used in the treatment of pneumonia, the incidence of complicating conditions has markedly decreased. In this series of 517 patients, sterile pleural effusions were the most frequent complication and occurred in eleven patients (2%). All of these effusions

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Morris F. Collen, MD

One of the pioneering physicians of the Kaiser Permanente Medical Care Program, Dr. Collen has played a major role in our organization for 55 years and in the world of medical informatics for much of this time. In the KPMCP, he has been Chief of Medicine at Oakland from 1942-52, Medical Director at Oakland from 1952-4, Chairman of the Executive Committee from 1949-1973, Physician-In-Chief in San Francisco, and Medical Director of the West Bay from 1953-1961, Director of Medical Methods Research from 1961-1979, Director of Division of Technology Assessment from 1979-1983, and a Consultant at the Division of Research from 1983 to the present. Also, of course, he edited the Permanente Foundation Medical Bulletin from 1943-1953. He has had a distinguished parallel career in the area of computer applications to medicine and has published 180 articles and seven books, including a book History of Medical Informatics published in 1995. A partial list of his honors includes election to the Institute of Medicine of the National Academy of Sciences in 1971 and selection as a Distinguished Practitioner of Medicine of the National Academies of Practice in 1983, the 1992 Computers in Healthcare Pioneer Award and the International Health Evaluation Lifetime Achievement Award, and the 1993 American College of Medical Informatics Morris F. Collen Medal. He has been a member of many governmental advisory and study groups and currently has an appointment as scholar-in-residence at the National Library of Medicine. A graduate of the University of Minnesota (undergraduate and medical school), he did internship at Michael Reese Hospital in Chicago and residency at Los Angeles County Hospital, and is a Fellow of the American College of Physicians and of the American College of Medical Informatics.

Elizabeth Anderson, MD

Dr. Anderson was educated at Harvard University (BS & MD) and did her residency at Duke and at UCLA. She practiced in Internal Medicine and Infectious Diseases at the Southern California Permanente Medical Group from 1974-1978, and then at The Permanente Medical Group, Oakland, from 1978 to the present. She was Chief of Medicine at Oakland from 1986-1991; Director of Medical Education from 1991-1994; and currently is in charge of hospital-based medicine. She is a Clinical Professor of Medicine at UCSF School of Medicine.
remained uninfected and cleared under the management as outlined below. Empyema did not occur in a single patient in this series.

Asthmatic bronchitis was a common associated complicating condition, which tended to exhaust the patient, and make the treatment more difficult.

Acute glomerulonephritis, non-purulent arthritis, and erythema nodosum each occurred twice. Septic arthritis, acute bacterial endocarditis, meningitis, pulmonary embolism (on first ambulatory day), pelvic thrombophlebitis, and spontaneous pneumothorax, each occurred once.

Severity of Cases

In this series, 145 patients (28%) had pneumonic involvement of more than one lobe.

The gross mortality of the entire group of 517 patients with pneumonia was 8.1 percent, which is comparable to that of other large series, however, although gross mortality statistics are interesting, they are not significant, because of the multiplicity of factors which influence the mortality in pneumonia (age, number of lobes involved, complicating conditions, associated disease, etiological organisms, etc).

Chemotherapy

Chemotherapy is the most important single agent in the treatment of pneumonia. Before sulfadiazine was administered, specimens were routinely obtained for blood culture, sputum typing, complete blood count, and urinalysis.

Sulfadiazine is becoming universally accepted as the drug of choice for pneumonia, because (1) it is the drug most effective against the pneumococcus, streptococcus, staphylococcus, and the Friedlander's bacillus, (2) it is most effective as evidenced by comparative mortality statistics in large numbers of cases, and (3) it is the least toxic of the sulfonamide group.

Throughout the four month period from September to December, all patients with pneumonia received an average initial dose of five grams of sulfadiazine orally, then one gram orally every four hours thereafter. Graph 1 indicates the average curve (dotted line) obtained by plotting blood sulfadiazine determinations found at one, four, eight, twelve and twenty-four hours after an initial oral dose of five grams of sulfadiazine. The maximum concentration of the drug in the blood was reached between four and eight hours after this dose was given, the average level at this time being six to seven milligrams per one hundred cubic centimeters. Graph 1 emphasizes that (1) sulfadiazine is slowly absorbed from the gastrointestinal tract, forcing a delay of four to eight hours before therapeutic concentrations of the drug are obtained, (2) the initial oral dose which is usually administered, is entirely insufficient to obtain the full therapeutic blood concentrations necessary for optimum curative effect, (3) it is not necessary to administer sulfadiazine orally every four hours, since a proportionately higher dose every six to eight hours is just as effective. A few patients were given five grams each of sodium bicarbonate and sulfadiazine orally, but no changes in blood sulfadiazine concentrations, and no increase in absorption of sulfadiazine was evident.

Graph 1 also indicates the average curve (dot-dash line) obtained by plotting blood sulfadiazine determinations at one-quarter, one, four, eight, twelve and twenty-four hours after an intravenous dose of five grams of sodium sulfadiazine. Within fifteen minutes after the injection, a concentration of over sixteen milligrams per one hundred cubic centimeters was uniformly obtained. The blood level of sulfadiazine then fell gradually over the next twelve hours, so that between twelve to twenty-four hours the curves with oral and intravenous sulfadiazine were about the same.

By combining various initial oral and intravenous doses of sulfadiazine, it was finally determined that an initial dose on admission of five grams of sodium sulfadiazine intravenously and two grams orally, followed by two grams orally every six hours thereafter was optimal. This dosage produced an immediate rise in the blood sulfadiazine concentration to between sixteen to twenty milligrams per one hundred cubic centimeters (graph 1, solid line), then decreased within four hours to about ten to fifteen milligrams, where it remained fairly constant as long as the drug was continued.

During the four month period from December to May, all patients with pneumonia, received immediately on admission to this hospital, five grams of sodium sulfadiazine intravenously and two grams of sulfadiazine orally, followed by two grams orally every six hours thereafter. Table 2 indicates the mortality statistics of these two groups of patients, both treated identically in all ways by the same staff, except for the difference in dosages and route of sulfadiazine as indicated.

<table>
<thead>
<tr>
<th>Initial Dose</th>
<th>Cases</th>
<th>Deaths</th>
<th>% Mortality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>108</td>
<td>10</td>
<td>9.3</td>
</tr>
<tr>
<td>Intravenous</td>
<td>409</td>
<td>32</td>
<td>7.7</td>
</tr>
<tr>
<td>Total</td>
<td>517</td>
<td>42</td>
<td>8.1</td>
</tr>
</tbody>
</table>
It should also be noted that the second and larger series included the majority of the winter group of patients with pneumonia, which it was felt, were on the whole more virulent in nature than the fall group. The average mortality for the group treated with five grams of sulfadiazine orally and one gram every four hours thereafter was 9.3 percent. The average mortality for the group treated with five grams of sodium sulfadiazine intravenously and two grams of sulfadiazine orally, then two grams orally every six hours thereafter, was 7.7 percent.

No greater incidence in sulfadiazine toxic reactions was noted in the higher dosage group than in the lower dosage group. Dowling has shown that the incidence of relapse, spread of pneumonia to another lobe, and slow resolution was less than half as frequent in a group treated with small doses.

Since the length of time that elapses before treatment is instituted is a very important factor influencing mortality in pneumonia, it is essential that full therapeutic blood concentrations of sulfadiazine be obtained as soon as possible. Treating the patient by an initial oral dose of sulfadiazine implies that the patient lies in the hospital up to one-third of a day before the treatment becomes effective. Certainly where delay in a fraction of a day increases the mortality, it is not desirable to permit a patient with pneumonia to wait four to eight hours in the hospital for the sulfadiazine to be absorbed from the gastrointestinal tract, when within fifteen minutes an effective blood concentration may so easily be obtained by an initial intravenous injection.

All patients having pneumonia are now routinely treated immediately on admission with five grams of sodium sulfadiazine intravenously and two grams of sulfadiazine orally (blood and sputum specimens for the laboratory being obtained first), and then two grams of sulfadiazine orally every six hours thereafter. Patients who cannot take any oral medications are maintained on five grams of sodium sulfadiazine intravenously every twelve hours until oral therapy can be instituted. Sulfadiazine blood concentrations were routinely determined between twelve to eighteen hours after admission. This was found to be imperative, since even though the majority of patients showed a blood level of ten to fifteen milligrams per hundred cubic centimeters, in the individual case the actual blood concentration was unpredictable due to variations in hydration and renal function. If the blood concentration of sulfadiazine was found to be between seven to ten milligrams per hundred cubic centimeters, 2.5 grams of sodium sulfadiazine were immediately given intravenously, and the blood sulfadiazine level was again determined in twelve hours. If the blood sulfadiazine concentration was found to be less than seven milligrams, the full dose of five grams of sodium sulfadiazine was gain repeated intravenously, and further blood sulfadiazine concentrations were subsequently determined. If the blood level was found to be over twenty milligrams, sulfadiazine was discontinued for the next two doses, and the blood non-protein nitrogen or urea nitrogen was immediately checked. Impaired renal function was the usual cause for excessively high blood sulfadiazine levels.) Fluids were forced in this latter group, and the blood sulfadiazine level was again determined in twelve hours; further dosage of the drug was governed accordingly. The blood sulfadiazine level was maintained between ten to fifteen milligrams per hundred cubic centimeters as closely as possible.

Sulfadiazine was maintained in full dosage until the temperature was normal for two to three days, then the drug was discontinued. The pulse, respirations, white blood count, and percent neutrophils should all be normal at this time, and the urine should show no albumin or casts (the latter were a valuable index to the toxicity of the pneumonia, since very toxic patients constantly showed marked albuminuria and many granular and hyaline casts.) Tapering of the dosage of the drug before stopping it is unnecessary; Bullowa has shown that this actually may be harmful.

Table 3. INCIDENCE OF SULFADIAZINE TOXIC REACTIONS

<table>
<thead>
<tr>
<th>Manifestations</th>
<th>Cases</th>
<th>Percent</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crystalluria</td>
<td>40</td>
<td>7.7</td>
<td>7.4</td>
</tr>
<tr>
<td>Hematuria</td>
<td>7</td>
<td>1.4</td>
<td>5.2</td>
</tr>
<tr>
<td>Skin eruptions</td>
<td>5</td>
<td>1.0</td>
<td>1.5</td>
</tr>
<tr>
<td>Leukopenia</td>
<td>4</td>
<td>0.8</td>
<td>0.7</td>
</tr>
<tr>
<td>Psychosis</td>
<td>3</td>
<td>0.6</td>
<td>0.4</td>
</tr>
<tr>
<td>Fever</td>
<td>2</td>
<td>0.4</td>
<td>0.2</td>
</tr>
</tbody>
</table>

Sulfadiazine toxicity was encountered in twelve percent of the patients in this series. Table 3 lists the frequency with which each of the various toxic manifestations were encountered. The table also presents the frequency of toxic reactions as reported by Finland in a series of 460 patients treated with sulfadiazine. It is apparent that no remarkable differences in frequency of drug toxicity occurred in the two series. It has been shown that toxic reactions are no more numerous in patients treated with large doses of sulfadiazine than in those treated with small doses.

Only patients who were reported by the laboratory as showing “many sulfa crystals” or “loaded with sulfa crystals” were included as sulfadiazine toxic reactions. The presence of only a few crystals in the urine was not alarming, and indicated only that the fluid intake of the patient should be increased, and that a daily urinalysis should be performed. The development of sulfadiazine crystalluria with or without hematuria indicated the need to (1) force fluids to 4000 to 5000 cubic centimeters daily, (2) observe output very carefully for oliguria, (3) perform daily urinalyses for pH and crystals, (4) give 500 to 1000 cubic centimeters of one-sixth molar sodium lactate solution intravenously. The pH of the urine is much more important in the solubility of...
sulfadiazine crystals than the quantity of urine. The use of sodium lactate solution was found to be very satisfactory; within eight to twelve hours after administering 1000 cubic centimeters of the solution, the pH of the urine rose and the sulfadiazine crystals disappeared in 90 percent of patients. The use of oral sodium bicarbonate is much less reliable and more variable in results. An occasional patient required daily injections of 1000 cubic centimeters of one-sixth molar sodium lactate solution for a few days to maintain relatively alkaline urine.

Hematuria without crystalluria was observed in four patients. No other explanation for the hematuria was apparent, and upon discontinuing the sulfadiazine and administering sodium lactate solution intravenously, the hematuria promptly cleared.

Skin eruptions were manifested in two patients as a morbilliform rash, and in three patients as a scarlatiniform rash. Sulfadiazine was discontinued whenever a toxic rash appeared, since maculopapular eruptions have been observed to progress into bullous and exfoliative dermatoses upon failure to discontinue the drug promptly.

Leukopenia with a white blood count below 5000 cells per cubic millimeter, was observed in only four patients. The lowest count observed was 3200 white cells per cubic millimeter. The white count promptly rose in each case after the drug was discontinued and ten cubic centimeters of pentnucleotide was given intramuscularly three to four times daily.

Psychosis, manifesting itself primarily as a toxic delirium, developed in three patients on the fourth to sixth day of chemotherapy. Symptoms cleared within forty-eight hours after discontinuing the drug and forcing fluids. It has not been definitely shown that this psychosis is directly due to the sulfadiazine, giving full doses of the drug within a week after the psychosis cleared did not produce a return of the delirium.

Fever as a toxic manifestation of sulfadiazine was extremely rare. When a previously normal temperature became elevated it was found much safer to assume that there had developed an effusion, a spread of pneumonia, or some other complication, rather than to discontinue the drug on the basis of possible drug fever.

Serum Therapy

About one-fourth of the patients required adjuvant therapy, either in the form of specific serum, oxygen, or treatment for various complicating or associated diseases.

Forty-six, or nine percent, of this series of patients received type specific rabbit serum in addition to sulfadiazine. Six patients received 50,000 units each, twenty-one patients received 100,000 units each, five received 150,000 units each, twelve received 200,000 units each, and two patients received 500,000 units of serum each. A total of 6,050,000 units of serum was administered to this series of patients. Reactions to the rabbit serum occurred in only two cases, both of which had mild serum sickness. Indications for serum therapy which were encountered in this series were:

1. Patients with pneumococcal pneumonia who were sulfadiazine “sensitive” or sulfadiazine “fast,” or for other reasons did not satisfactorily respond to chemotherapy, were given serum therapy;
2. Patients with pneumococcal pneumonia, who had not shown marked improvement by the time a positive blood culture was reported, received 50,000 units of serum intravenously every four hours until a definite fall in pulse and temperature occurred;
3. Patients with pneumococcal pneumonia with negative blood cultures, who showed no improvement in twelve to eighteen hours, received 50,000 units of type specific rabbit serum intravenously (after proper testing for sensitivity). Every four hours 50,000 units were injected until a definite fall in pulse and temperature occurred. Pneumococcal type VII pneumonia proved especially virulent this winter, and required serum more frequently than any other type;
4. All patients with atypical pneumococcal pneumonia who were over fifty years of age, or had multiple lobe involvement, acute or chronic alcoholism, (patients admitted with pneumonia and delirium tremens had an especially high mortality), severe liver or kidney damage, heart disease, diabetes, or pregnancy were carefully observed as possible candidates for serum therapy.

Indications varied, of course, with the toxicity of the individual case and with all the other factors which influence the mortality of pneumonia.

In severely ill patients with staphylococcal pneumonia, staphylococcus antitoxin was used as an adjunct. In two patients 40,000 units of antitoxin were administered intramuscularly twice daily up to a total of 240,000 units, with apparent benefit in one case.

Patients with virus or “atypical” pneumonia were treated by general supportive and symptomatic therapy. Sulfadiazine was usually discontinued when the diagnosis became certain and a cooccal pneumonia was ruled out. No therapy which definitely hastened recovery was found.

Adjuvant Therapy

Fluids were forced to 4000 to 5000 cubic centimeters daily, preferably by mouth. Water, sweetened fruit juices, and the more nutritious fortified milk and egg drinks were encouraged. Frequently, certain fruit juices and milk distressed a toxic patient by aggravating tympanites; these were then withheld for a few days. When necessary, parenteral fluids were given by venoclysis, or hypodermoclysis in elderly and cardiac patients. During the initial period of marked toxicity, more than 1000 cubic centimeters of saline parenterally was advised against, since patients in impeding shock may be thrown into pulmonary edema by excess salt. All patients’ fluid intake and output was carefully measured and recorded. Oliguria was regarded as a grave sign, and was usually associated with a state of shock superimposed upon the “febrile nephritis” which is present in all patients with severe pneumonia.

Expectorants of the saline group were freely used to attempt to decrease the tenacious consistency of the muco-purulent sputum and permit free expectoration. Ammonium chloride...
Clinical contributions

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...and potassium iodide were used in small doses three to four times daily. Patients occasionally became nauseated on treatment, and these drugs were discontinued first, as they were usually the cause; sulfadiazine was found to be extremely rare in producing nausea.

Oxygen was a very important agent in the treatment of these patients with pneumonia. The majority of the patients tolerated the soft rubber Barach-Eckmann injector mask very well, and 95 percent oxygen was administered if the patient manifested high fever, rapid pulse or respirations, cyanosis, marked toxicity, or any evidence of impending shock. When the condition improved, 50 percent oxygen was continued as long as necessary. Due to the frequent momentary lifting of the mask to give fluids to the patient, excessive drying of the pharynx was rarely observed even when using 95 percent oxygen. An occasional patient in toxic delirium was unable to tolerate the mask, and then an oxygen tent was used for the first twenty-four to forty-eight hours.

Treatment of Complicating Conditions

Asthmatic bronchitis was a frequent complication in pneumonia and added to the dyspnea and anoxia of the patient. The bronchiolar obstruction being on an inflammatory basis, the usual measures which are successful in combating allergic bronchial asthma were not as effective in asthmatic bronchitis. Epinephrine was usually tried first, using small doses so as not to increase an already excessive heart rate; minims five given hypodermically every fifteen minutes for three to four doses was much more effective than a larger dose given in one injection. If relief was observed, then one cubic centimeter of epinephrine in oil was given intramuscularly every eight hours until the asthmatic symptoms subsided. If epinephrine was not effective, aminophylline (theophylline with ethylendiamine) was used in doses of one-fourth to one-half gram intravenously; if relief was obtained, then one-half gram of aminophylline intramuscularly was given every eight hours until the symptoms of asthma subsided. Potassium iodide and ammonium chloride were helpful adjuvants in decreasing the tenacity of the mucoid sputum, permitting free expectoration.

Pleuritic pain was infrequently seen, but it occasionally became a serious problem in very toxic patients. The individual or combined use of continuous 100 percent oxygen, pitressin or prostigmine in doses of one cubic centimeter hypodermically, an indwelling rectal tube, and/or enemas usually produced rapid decompression. All cathartics were routinely prohibited in patients with pneumonia; low tap water enemas every second or third day were effective in combating constipation and produced less abdominal distention.

Pleural effusions were subjected to a diagnostic thoracentesis as soon as the presence of fluid was established. From one hundred to two hundred cubic centimeters of fluid were removed, and fifty to one hundred cubic centimeters of air were usually injected, but the advantages of the latter procedure were questionable. If the effusion was sterile, sulfadiazine blood concentrations were maintained between ten and fifteen milligrams per one hundred cubic centimeters until the temperature was normal for at least ten days and the fluid was absorbed. Repeated determinations of concentrations of sulfadiazine in pleural effusions have shown, without exception, that the concentration of sulfadiazine was always higher in the pleural fluid than in the blood. There was no need for direct injection of sulfadiazine into the pleural cavity. Roentgenogram examinations of the chest for progress were repeated every five to seven days. Thoracentesis was performed again only for the relief of dyspnea, or if evidence of increasing fever and toxicity developed.

Shock in pneumonia must be treated as vigorously as shock in any other condition. One must recognize, however, the increased tendency for patients with pneumonia to develop pulmonary edema. The recognition of developing shock indicated immediate treatment; 250 or 500 cubic centimeters of plasma were given intravenously and repeated as necessary. Patients with anemia were given whole blood transfusions. Ninety-five percent oxygen was administered by mask continuously. Parenteral crystalloid fluids were used restrictedly since they often precipitate pulmonary edema in a patient in a state of shock. If pulmonary edema was already apparent, one-half gram of aminophylline (20 cc.), fifty cubic centimeters of fifty percent sucrose, and 250 to 500 cubic centimeters of plasma intravenously were found to be most effective. Each of these having a definite purpose and value, the three agents were usually used together for full effect, and often dramatic clearing of the lungs resulted in an apparently terminal case. Patients were digitalized only if there was definite evidence of congestive heart failure or auricular fibrillation developed. In these patients, eight cubic centimeters of cedilanid (lanatoside C) were administered intravenously.

Lewis the mechanism of relief is similar to that of referred pain. A tight scultetus binder across the chest was usually also very helpful. Immobilizing the chest with adhesive tape strapping has been strongly advised against, since complete fixation of the chest is undesirable, and severe blistering of the skin frequently results. Occasionally these measures do not furnish sufficient relief and the use of codeine is necessary.

Patients who coughed considerably frequently complained of upper abdominal and lower chest pain. This was apparently due to straining the abdominal musculature by paroxysms of coughing, and was usually completely relieved by a tight scultetus binder applied over the lower chest and upper abdomen.

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“In the last eight months, 517 patients with pneumonia were treated in this hospital with a gross mortality of 8.1 per cent. No questionable cases of ‘minimal pneumonia,’ ‘pneumonitis,’ or similar indefinite diagnosis were included in this series.”
Summary and Conclusions

1. In the last eight months, 517 patients with pneumonia were treated in this hospital with a gross mortality of 8.1 percent.

2. Sulfadiazine was advocated in the treatment of pneumonia in the following dosages: five grams of sodium sulfadiazine intravenously and two grams of sulfadiazine orally immediately on admission, then two grams of sulfadiazine orally every six hours thereafter. The advantages of this regime were: (a) the initial intravenous dose of sulfadiazine produced optimum therapeutic blood sulfadiazine concentrations within fifteen minutes; (b) there was a resulting lower gross mortality, lower incidence of relapse and complications, and better maintenance of optimum therapeutic blood sulfadiazine concentrations as compared to those of patients treated by lower doses.

3. No greater incidence of sulfadiazine toxicity occurred in this series as compared to others. Sulfadiazine crystalluria occurred in 7.7 percent of patients. Intravenous one-sixth molar sodium lactate solution was the most effective therapeutic agent in combating crystalluria.

4. Sterile pleural effusions developed in two percent of the patients. Empyema did not occur in a single patient.

5. Specific serum therapy, in addition to chemotherapy, was used in nine percent of the patients.

6. Other adjuvant therapeutic measures for associated or complicating conditions were used as outlined.+

Bibliography


Commentary by Elizabeth Anderson, MD, Infectious Disease Subspecialist at Oakland

I was fascinated and challenged upon reviewing this article by Dr. Collen and Dr. Dybdahl in the 1943 Permanente Foundation Medical Bulletin. Caring for 517 pneumonia patients in an eight-month period was a major accomplishment. The article demonstrates that our founding physicians had the energy and intellectual curiosity not only to care for a large number of patients, but also: (1) to confirm a specific bacterial diagnosis in 70% by identifying and typing the bacteria, (2) to administer a new antibiotic, sulfadiazine, (3) to perform pharmacokinetic studies of sulfadiazine to determine optimal doses, (4) to record clinical complications of both the disease and the medication in a systematic fashion, and, finally, (5) to describe their findings in writing clearly and concisely.

An analogous study in our time with a similar volume of data might well have resulted in four publications: one on the epidemiology of pneumonia in a specific population—young men, mostly 4F draft rejects, building ships in Richmond in World War II; a second on the pharmacokinetics of a new antibiotic; a third on the efficacy of oral vs. intravenous sulfadiazine; and a fourth on management of a common disease and its complications, comparing outcomes with other reported series of cases. The writing is a fluid narrative with interspersed tables, instead of the formalized structure of today—abstract, introduction, materials and methods, results, discussion, and conclusions. Statistical analysis was not usual in the 1940s; for example, the comparison of mortality with oral therapy (10/108 = 9.3%) compared with intravenous therapy (32/409 = 7.7%) were reported with no p value. To the author’s credit, no claim of importance of this mortality difference was made; in fact, one of his major concerns was that toxicity was not greater with intravenous therapy.

In evaluating a patient with pneumonia, clinicians today must struggle more to identify a pathogen. Published series from academic centers indicate a specific diagnosis in only ~ 50% of cases, despite far more sophisticated diagnostic tools. The Gram stain remains, although bacterial typing by the Quellung reaction is long gone. Just to name a few current techniques suggest the magnitude of the advances: direct fluorescent antibody stains, polymerase chain reaction amplification, viral culture techniques. Almost surely, a substantial proportion of more straightforward cases are not hospitalized and have or need little diagnostic testing. Failure to identify a specific diagnosis is probably related in many to partial treatment before hospitalization, selection of fragile hosts (poor cough or inability to mount a purulent response to infection), and higher prevalence of fastidious organisms (anaerobes, mycoplasma, chlamydia, pneumocystis carinii, legionella, etc).

We are now rich in choices of specific treatment, with hundreds of antibacterial, antifungal, and antiviral agents. Serum
therapy is relegated to a few specific, uncommon situations (eg, gamma globulin for congenital or acquired agammaglobulinemia, or IVIG for immunomodulatory therapy with acyclovir for cytomegaloviral pneumonia in bone marrow transplant recipients). Treatment of pneumonia complications (such as bronchospasm or heart failure) has improved. Nonetheless, the nonspecific treatments are the same: hydration, pain relief, oxygen.

Pneumonia remains a tremendous burden for Kaiser Permanente. Today, pneumonia is less often a devastating interruption in the life of working individuals and more often an end-of-life event for the aged, for persons with multiple organ failure, or an immunocompromised condition. The clinical challenge is the same as that faced by our colleagues in the 1940s. One should attempt to make a specific diagnosis, administer the proper antimicrobial drug, and always support the patient's comfort needs and recovery. Perhaps we do not often enough meet the intellectual challenge of our profession to systematically examine and record the details of experience, so that we may improve the care we give.

I remember a conversation with Dr. Collen shortly after I arrived at Oakland. I complained that it often seemed hard to provide much help to patients, and that doctors often couldn’t really do much to heal the sick. He gently chided me, reminding me of the great advances in medical treatment since the Richmond shipyard days. He painted a vivid picture of country boys from the South and Midwest, many rejected from the military because of illnesses like asthma or rheumatic heart disease. They came to California to build ships; many stepped off the train already exhausted and ill. When they were hospitalized with pneumonia, often to die, “all we had was oxygen, fluids by clysis, and sulfadiazine.” He added, “be thankful you are practicing today.”

Interdependency

"Interdependency ought to be as sought after as self-sufficiency."
Mohandas Gandhi
The Lighter Side of Medicine

**By Joe Oleniacz, MD, a Pediatrician for The Carolina Permanente Medical Group, PA.**

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**How to Use Humor to Stay Healthy**

Babies start to laugh when they are 10 weeks old; six weeks later they are laughing about once every hour. Four-year-olds laugh once every four minutes. The average grown-up is said to laugh only about 15 times per day. Sadly, our culture tends to inhibit humor. We learn to associate growing up with “getting serious,” and being “serious” is somehow equated with being solemn and humorless. We are ordered to “wipe that smile off your face” and told that things are “no laughing matter.” Sometimes we repress our good humor, because we’re afraid that others will think we’re frivolous or foolish. Our funny bone gets broken. Fortunately, a laugh prescription is not a bitter pill to swallow. Here are some suggestions for repairing your sense of humor and regaining healthy laughter:

- Expose yourself to humor
- Keep a humor journal
- Tell a joke
- Laugh at yourself
- Look for the funny side
- Exaggerate
- Try a retake
- Try humor instead of anger
- Use humor to handle anxiety
- Make up a comedy routine
- Hang out with happy people
- Put on a happy face

Adapted and reprinted with permission from “The Healthy Mind, Healthy Body Handbook” by David Sobel, MD and Robert Ornstein, PhD (Los Altos, CA: DRx, 1996) and “The Mind/Body Health Newsletter.” For further information about the book or for newsletter subscriptions, contact the Center for Health Sciences at 1-800-222-4745.

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**By Stephen Bachhuber, MD, an anesthesiologist for Northwest Permanente, PC.**
Cultural Competence in Health Care: Another Aspect of Kaiser Permanente’s Commitment to Quality

During 1997, the first handbook on delivering culturally competent care to a distinct set of ethnic populations, Latinos, was published under the sponsorship of the National Diversity Council. This is the first of a series of handbooks that summarizes epidemiologic data, health beliefs, and cultural characteristics that have implications for service delivery to special populations.

Carlos, an 11-year-old Mexican American, has been newly diagnosed with acute myelogenous leukemia. His physician feels it is important to include the boy in discussions about his disease, its treatment and its prognosis. The parents, Jesus (who speaks English well) and Elena (whose English is limited), are horrified at this suggestion and adamantly refuse to allow this discussion.

A medical director of a large Kaiser Permanente medical center located in the Southwest is concerned that the proportion of members with non-insulin-dependent diabetes mellitus (NIDDM) is significantly higher in that service area than in other areas in the division. This presents a cost-containment challenge, because, according to the National Medical Expenditure Survey, per-patient annual expenditures for diabetic patients are 3 to 4 times greater than for non-diabetic patients. The sizable proportion of diabetic patients also means that a great deal of effort will be required to meet the Health Employer Data Information Set (HEDIS)-driven clinical goals around retinal screening and proportion of diabetic members with good blood sugar control. Recently, the marketing director reported studies indicating that African Americans make up about 20% of local Southwest market members and that Latinos comprise 52%. About 65% of the babies born in the hospital are Latino.

Although at first glance the problems confronting the physician and the medical director appear to have little in common, more careful consideration reveals that they share a common thread: both are related to the unique cultural and medical needs of a specific population. Effectively addressing these needs will require skills currently being called “cultural competence.” In a recent editorial in the Annals of Internal Medicine (May 1996), cultural competence in health care is defined as “the demonstrated awareness and integration of three population-specific issues: health-related beliefs and cultural values, disease incidence and prevalence, and treatment efficacy.”

Recent newcomers may be from cultures with a history of long-standing medical traditions, such as Ayurvedic or classical Chinese, of folk medicine, a different set of popular (read ‘over the counter’) practices or, most likely, a mixture of biomedicine and several of these.

M. Jean Gilbert, PhD, a medical anthropologist, joined Kaiser Permanente’s Organizational Research Department in 1990. Prior to that, she directed cross-cultural epidemiologic research at UCLA and has published widely in the area of alcohol use and alcoholism. She is currently Director of Cultural Competence for the California Division, Pasadena.
as do varying concepts of gender roles, and sexual and reproductive practices. For example, physicians who are now seeing an increasing number of female patients from African nations find it hard to understand the belief systems that underlie the practice of female circumcision. However problematic such practices seem, they are deeply embedded in their practitioners' social reality and moral system.

Different groups also have distinctive beliefs about appropriate ways to interact with physicians, nurses, pharmacists, and other health care personnel and may have expectations about how they should be treated in the health care setting. As with all groups, they bring to the medical encounter the “invisible” culture of norms, values, and behaviors that affect their acceptance or rejection of treatment, prevention strategies, and their judgment of health care systems and personnel.

The Race/Ethnic Variable in Epidemiology

Along with age and gender, race and ethnicity are variables which are critical in defining risk factors and epidemiology patterns across groups. National studies of disease incidence and prevalence show statistically significant differences in the occurrence of many major diseases along race and ethnic lines. The reasons for this systematic variation are complex.

Some disorders have a hereditary basis, such as sickle cell disease in African Americans, Tay Sachs disease in Ashkenaz Jews, alpha- and beta-thalassemia in many Asian and Pacific Islander populations, neural tube defects in Southeast Asians, and NIDDM in some American Indian groups and in groups of American Indian mixture. On the other hand, some diseases hypothesized to be genetically linked, such as nasopharyngeal cancer among Chinese persons, may also involve cultural (especially dietary) factors in their etiology.

Social epidemiology—the study of how culture affects the onset, course, treatment, and outcome of disease—demonstrates that a cultural group’s beliefs, behavioral norms, and practices greatly affect its health status. Sexual norms prescribing who may have relations with whom, when, and how affect the transmission of STDs. For example, bisexuality and homosexuality are defined and understood differently across cultures, and norms governing heterosexual and same-sex intercourse vary widely. Dietary beliefs and customs affect the prevalence of hypertension, heart disease, and diabetes. Differing values related to beauty and body size affect acceptance of obesity. Adhering to or rejecting treatment may turn on how well the regimen is integrated with cultural understandings and social customs that are not well understood outside a patient’s culture.

Finally, disease patterns are sometimes linked to a specific group’s socioeconomic position through environmental factors and differential access. The prevalence of lead poisoning among African American and Latino children living in older buildings in inner cities is a case in point. High levels of asthma among inner-city dwellers are hypothesized to be linked to environments containing exceptionally high levels of pollutants.

The National Diversity Council’s handbooks on culturally competent care highlight these differences in epidemiologic patterns across groups and draw implications from them for planning service delivery and patient care. Cultural beliefs and orientations that may impact health care utilization and treatment adherence are also discussed. Major groups within the glosses “Latino,” “African American” and “Asian” are distinguished.

Special Treatment or Quality Care?

Many health care professionals are concerned about focusing on ethnic differences among patients, saying that patients want to be treated the same regardless of background. They are rightfully fearful of stereotyping. A very small minority of physicians see a disease process as being the same in all patients, whatever the factors that have provoked its onset or mediated its course and treatment.

Patients from specific groups often do state that they want “the same treatment as others.” Questioned, they mean the same good treatment, treatment of equal quality to that which others receive. What they do not mean is that their beliefs and life circumstances should be ignored or that a one-size-fits-all approach should be taken.

The paradox is that in order to provide the highest quality of care to persons from all groups in Kaiser Permanente’s membership, knowledge of epidemiological, cultural and linguistic factors that affect their health status, that is, group differences, is important.

The handbooks sponsored by the National Diversity Council present information on different groups as statistical probabilities and as generalizations based on research studies. Also presented are factors that effect important intragroup variation.

Changes in the Regulatory/Legal Environment

The importance of physiological and cultural variation as it impacts health care status has attracted the attention of regulatory and accrediting agencies. Many states which send Medicaid recipients into managed care programs (such as California, New York, New Jersey, Illinois, Massachusetts, Rhode Island, and Wash-
ington) have written cultural and linguistic requirements into their contracts, usually to be triggered by defined concentrations of specific groups within service areas. Foremost among these stipulations is the cultural training of health care providers who care for these patients. The Health Care Financing Administration is currently studying these issues in relation to Medicare risk eligibles. As more of the nation’s medically underserved children (and their parents) come into Kaiser Permanente medical offices through the new federal and state programs as well as through our own Kaiser Cares for Kids program, the diversity of our patient population will grow.

The National Committee for Quality Assurance, in its first HEDIS for Medicaid-capitated beneficiaries, includes the assessment of cultural-group concentrations and tracking of language needs. The Joint Commission for the Accreditation of Healthcare Organizations recommends cultural training for health care professionals. And, finally, The Wall Street Journal reported in September 1997 that some medical malpractice insurers were offering 2% to 5% premium discounts to doctors who attended a workshop on cultural differences in medicine!

In response to these needs, medical schools such as Stanford University School of Medicine and the Robert Wood Johnson School of Medicine are incorporating cross-cultural medicine in their curricula, and the family practice educators have developed a detailed training curriculum in this area. Kaiser Permanente’s Handbook on Culturally Competent Care, Latino Population has drawn high praise from Professor Ronald Garcia, MD, of Stanford and Professor Robert Like, MD, of Robert Wood Johnson.

**Market-Leading Performance**

Attention to the needs of specific groups that make up the Kaiser Permanente membership is another way to demonstrate market-leading performance and make clear our organization’s social purpose. It will also enhance our attractiveness to segmented markets of health care consumers.

Perhaps as important, a heightened awareness of the cultural aspects of health care enriches the practice of medicine. In the words of one physician upon reviewing a handbook manuscript, “This is fascinating stuff. Throughout human history health and healers have been central to all civilizations. I have learned so much from my patients from different cultures, not just about medicine, although that is important, but about how people adapt to different circumstances, how they can learn and change. How people see their bodies and their functioning tells us a lot about how they see life.”

The provider’s handbooks on culturally competent care are an integral part of the National Diversity Council’s Strategic Action Plan for Diversity. The Council views the diversification of the United States population as an opportunity to focus on quality health care for specific markets and members. Driven by data that verify the large number of cultural groups among Kaiser Permanente’s current and potential membership, the handbooks offer practical information in highly readable format. Funded and administered by the diversity department at Program Offices, each handbook is well researched, extensively reviewed, and accompanied by a reference list of the best publications available. The review panel for each handbook consists of a physician champion and physician reviewers, all particularly familiar with the groups being considered. The material is researched and prepared by doctoral-level students, overseen by the series editor (this author), and submitted to the review panel for suggested revisions. The final draft goes through the same exhaustive peer review process. Publication of the African American handbook is projected for February 1998, and the Asian American handbook will be available in early spring 1998.
The Presidential Commission and Health Care Reform

In monarchies, when the king dies, the people say "The king is dead; long live the king" because there is always another monarch in the line of succession ready to accept the crown at the moment of the king's death. So it is with health care reform.

In 1993, the Health Security Act (HSA), that mammoth 1342-page Clinton/Magnitzer blueprint for a better health care world, the very one that Harry and Louise debated and decried in every living room in America, sank to the bottom from its own weight. There were some who said that health care reform was dead in our lifetime, and even jokes appeared: Hillary Clinton asks God if we will ever see health care reform. God replies: "Yes. But not in my lifetime."

Four years later, after some modest interim changes in federal health policy such as improved guarantees for insurability (established by the Health Insurance Portability and Accountability Act of 1996 (HIPAA)) and some tinkering with mental health parity and hospital maternity length of stay, we are at it again. The Balanced Budget Act "BUBBA," signed into law on August 5, 1997, lays the groundwork for conversion of the Medicare program into a "managed competition" model, not unlike the essential organizing principle of Clinton's HSA. Quickly emerging on the scene is the report from the President's Commission on Consumer Protection and Quality in the Health Care Industry. The Commission will first enunciate a Patient Bill of Rights this fall, followed next spring by a more technical document describing various approaches to quality in health care and allocating responsibility to the various parties: purchasers, providers, consumers, and government. This Commission's report is intended to create a framework for new legislation, the forebears of which are already in the Congressional hopper. Next year, with elections blowing in the El Niño winds, members of Congress and their campaign opponents will want to impress the electorate with their concerns for all the problems caused by managed care. Look forward to a major debate on consumer protection standards in health care and to possible legislation during 1998.

The President's Commission Bill of Rights product, delivered before Thanksgiving 1997, is familiar to many of us in Kaiser Permanente. Access to emergency care and to specialists, choice and continuity of care, information disclosure, and appeals of health plan determinations, participation in treatment decisions, confidentiality of medical information, quality improvement, and nondiscrimination among health plan members are essential elements also of the Kaiser Permanente Principles for Consumer Protection, announced in September with our partners Group Health Cooperative of Puget Sound, HIP Health Insurance Plans, Inc., AARP, and Families USA. It surprises none of us to see these principles defined in the Commission's report. What the Commission has not recommended is how to implement these concepts. Powerful and opposing forces from the business and health plan and insurance communities on the one hand, and from consumer advocates on the other have paralyzed the Commission and torpedoed any hope once entertained that we would know what to do with the principles, once articulated. For that reason, do they deserve the lofty title "Bill of Rights," as guaranteed by the highest of our laws? The principles, unless they become legally enforceable national standards, will have moral standing only. Congress will wrestle with the implementation issue for the next year and will probably fail to resolve the conflicts of federal versus state regulation or of private accreditation versus governmental mandates.

In an election year, don't place your bets too early. Senator Jim Jeffords, Chair of the Senate Labor and Human Resources Committee, has circulated several drafts of a proposal that would establish broad standards by law and would set up a Health Quality Council to fill in the details and to monitor compliance. Warm-up hearings on the House side this fall have considered Rep. Charlie Norwood's bill (HR 1457), which carries some of the same notions forward in a much more punitive and heavy-handed fashion. Several other copycat bills are already crowding into the inside-the-beltway marketplace of ideas. Do not be astonished at the large number of cosponsors claimed by some of the principal sponsors of these proposals. Every House seat and a third of the Senate seats open for the constituents' pleasure just a year from now. What is better grist for the campaign stump speeches than a claim to protect all consumers from the ravages of managed care? Many politicians will want to carry that message home. Rhetoric, however, does not guarantee passage of legislation.

If something does pass next year, will that appease the angry health policy gods once and for all? If pigs could fly ... unfortunately, the process does not end until we regain a steady state in the health care sector. With the burgeoning size of the aging population and the specter of both a crumbling Medicare system and increasing numbers of uninsured persons in the years to come, turbulence will continue, perhaps for the professional lifetimes of all who read this. Many have written off a new
"baby boomer" Presidential Commission already organizing to consider long-term solutions to the Medicare problem. The prospect of renewed inflation and steep premium increases in the private medical markets has everyone worried about the implications for our country’s miraculous sustained economic growth of the economy during recent years. A steady-state equilibrium seems far away. Look forward to many years of legislative interest in health care reform.

The old saw, “To a hammer, the world looks like a nail” accurately describes the legislative process. Some believe there is no problem so complicated that a simple legislative solution will not fix it. Unfortunately, unintended consequences of the most well-meaning and well-crafted laws are likely, especially in a field as complex as health care. More powerful than the logic of reasoned policy, however, is the political pressure to demonstrate fulfillment of campaign promises. Next year will be hairy for all involved in the health policy arena. Now is the time for all committed health care professionals to learn the issues and to voice their views about the nature of the problems and about the desirable choices for solutions to these enigmas.

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Life is a Juggling Act

“The death knell in juggling is to watch any individual object. Our instinct is to look at each ball or task separately, because we want to have control. It’s a very insecure feeling; you influence something, and then you can’t influence it, and then you’re expected to catch it. But if you’re tied to each little specific, you’ll lose sight of the big picture. Concentrate on seeing all the patterns. If you look at things in many different ways, you’ll develop a depth perception that allows you to unscramble several patterns and see them all at once.”

Michael Moschen, Fast Company
October:November 1997
“Punchbowl Falls, Oregon” by Stu Levy, MD. Dr. Levy’s photography is also featured on the cover.
Keeping Anewst of Permanente in the News

Who at Kaiser Permanente has not been cornered and pummeled with questions about health care at a family gathering, community meeting, or dinner party in the last few years? I suspect that the number is small, given the ongoing national debate. The sheer amount of news coverage which managed care receives illustrates the point. A computer scan of a national news database for the term “managed care” for the first 11 months of 1997, for example, turned up 28,801 references—on average, 86 stories printed or broadcast per day across the United States.

As a result, Permanente physicians may be caught off guard. Many face being asked questions for which they do not have answers simply because they were not even aware something had become a public issue. Frequently, questions are generated by stories published in newspapers or aired on newscasts which we neither read nor saw. Topical range from criticism leveled by a politician against Kaiser Permanente to a problem in a medical office across town or across the country.

Media relations staffs are responding by developing prototypical systems for keeping physicians better informed about the news via e-mail and perhaps someday by an Intranet system, so they can be better prepared to tell Kaiser Permanente’s story. This is precisely the reason that the media relations staff in the California Division has been experimenting with an electronic news clipping service that allows Kaiser Permanente leaders and physicians to keep up with news headlines and with full texts of news articles via e-mail on a daily basis.

The idea stems from old paper-based news clippings that media relations staffs have used for years. These services would photocopy key news articles about the organizations they serve and distribute them to key leaders, usually from a few to perhaps 30 or 40 people. In late 1995, we realized just how difficult it was becoming in the computer age for anyone to keep up with the sheer volume of news in the world. We saw, too, how many more people need to have information—and need it quickly. We began to develop an electronic news clipping service, and to look for ways to give wider distribution to news about Kaiser Permanente.

One illustration of how the world of information has changed, and how it affects Permanente physicians, is how chain ownership of newspapers once owned locally now makes virtually all local news national. Two years ago, for example, a story in the daily newspaper in Walnut Creek, Calif., about Kaiser Permanente’s medical center in that city wouldn’t have mattered much to someone in Ohio. Not anymore. Since Walnut Creek’s hometown newspaper has been purchased by the Knight-Ridder chain, that same story is now instantly available to editors at three dozen Knight-Ridder newspapers across the U.S. Nine are in communities served by Kaiser Permanente, including newspapers in divisions serving Colorado, Kansas, North Carolina, Ohio, and Texas in addition to California. Likewise, stories about Kaiser Permanente in any one of those newspapers can be “shipped out” instantly over the Knight-Ridder newswire to all those papers. Compound this by the fact that more than 80% of newspapers are now owned by chains. Add that to the instantaneous ability of television and radio to move information via satellite and fiber-optics. The effect is obvious: We at Kaiser Permanente must face the fact we live in a public relations fishbowl.

Today, this means everyone at Kaiser Permanente is in the public relations business. How well each one of us can tell the Kaiser Permanente story—be it a media relations representative at a news conference or a physician at a community meeting—depends on how well we keep ourselves informed. We need to know not only who and what we are as an organization, but also to understand how we are viewed by the media and by the people who read newspapers, watch television, listen to the radio, or track information on the World Wide Web.

To date, the help we have provided in this endeavor in California included a daily news clipping service which resulted from the recent merger of two services in the former Northern and Southern California Regions. Using a combination of computer databases, Internet sites, and e-mail services, the California Division News Bureau, (a Public Affairs division) electronically scanned as many daily newspapers in California as possible and collected transcripts of key radio and television newscasts to assemble a daily electronic packet of news. The focus is on stories in which Kaiser Permanente is specifically mentioned as well as on articles and newscasts about key health care trends. California Division Daily News Clippings are distributed daily via e-mail to hundreds of people in leadership roles, and are made available on one e-mail system for tracking by any physician.

The format includes a headline summary, because no one has time to read everything. This strategy allows the recipient to quickly scan the headlines and names of news organizations. The reader can then make a judgment about the need to know more and can skip directly to the article he or she wants to read. The clippings can also be stored for later use.

TOM DEBLEY is Director of Media Relations for the California Division. He has been with Kaiser Permanente since 1995. Prior to that he was with the University of California as Assistant Director of the Berkeley campus news office, Public Affairs Director for Hastings College of Law, and Chief of News Services for the UC Office of the President.
later retrieval. Likewise, a physician leader who knows he or she will be going to a community meeting in the evening can read that day's news in which Kaiser Permanente has been mentioned. That physician can then contact the local public affairs or community and government relations staff for additional information that may be useful for answering questions.

While California has been experimenting with these new techniques made possible through information technology, the Program Office also has begun work in this area and is currently exploring the feasibility of a Program-wide approach to a uniform system that can serve all divisions. Program Office already has in place a news-clipping prototype from which a full national service can grow.

In California, the California Division Daily News Clippings are increasingly being supplemented with more widespread internal distribution via e-mail of news releases prepared for distribution to the media, with postings on Kaiser Permanente's World Wide Web site, and dissemination through various Web locations, including America Online. Well over 100 news releases were distributed this way in 1997 alone.

As these systems are developed, the goal is to give Permanente physicians and others access to up-to-the-minute information so they can be better communicators. In the meantime, any physician who uses the World Wide Web can set up his or her own interim system to capture news about Kaiser Permanente. Following are two examples. At America Online, you can go to the “News” section on the “Channels” page that is part of your opening screen. Click on “Search & Explore,” then click on “Search.” Once you are on the search page, bookmark it so you can come back to it easily. Fill in the search box with “Kaiser Permanente” and run your search. You should come up with 25, 50, or more recent articles or news releases. The second system is the Excite! “News Tracker.” For this free service, you need only go to the page at http://nt.excite.com/. Look for the “News Tracker” box and follow the instructions from there to set up a search for Kaiser Permanente. Once you have saved (bookmarked) this site, you can come back anytime. Just click on the name you have given your search, ie, “Kaiser” or “Permanente,” and up will come any current stories from the database’s News Tracker searches. And just remember, the next time you think you will be in a setting in which you will be pummeled with questions, arm yourself with a quick scan of recent news. After all, when people ask you a question it is because you are their expert source at that moment.
Introduction

The request for manuscripts by The Permanente Journal generated tremendous response from the Permanente community. Interestingly, most articles submitted to the Health Systems Management section of the Journal dealt with issues concerning referral-system challenges, specifically the difficulty of creating systems that result in acceptable access to specialists. Clearly this is an issue that all Permanente Medical Groups are dealing with.

For this edition of The Permanente Journal, six physicians from six different Permanente groups recently discussed what their groups are doing to address this Systems Challenge. By sharing their experiences, these physicians will help us all take the first steps toward a Program-wide solution.

- Lee Jacobs, MD, Editor

Dr. Lee Jacobs: I would like to start the discussion by asking panel members to give our readers their perspectives on the relationship between the primary care practitioner and the specialists, especially as it impacts the specialty referrals. What has been the experience of your groups?

Dr. Andrew Golden: In San Diego, the problem of access to specialists has been essentially resolved by programs implemented over the past few years. However, at times there is definitely tension between the primary care physicians and the specialists. This problem gets to be more significant when there is an imbalance in the workload of one or the other, either as a perception or by objective measures, especially during times of rapid membership growth.

Dr. William Caplan: I would agree. Certainly there has been a tension within Northern California. Primary care practitioners have felt they were being asked to manage the health needs for these large populations, and because our Medical Groups have been organized around specialty care, there have been feelings by primary care of not being adequately supported.

Dr. Steve Lieberman: I think that there is built-in tension between specialists and primary care physicians. It goes back to our training, when the specialists had to do more years of training, had to be on call more, and when we finally went out in practice, the specialists got paid more, worked different hours, and had different lifestyles.

Dr. Patricia Behlmer: In Georgia, we are slightly different from the California and Northwest Regions in that we are probably more primary care-focused and probably have a greater number of specialists who have had significant private practice experience. At least initially, these specialists tend to be a little less questioning as to the appropriateness of referrals because of their past experiences in which fee-for-service referrals were encouraged. With that said, we also experience a level of tension, not so much with the non-discretionary referrals—that is, referral of the cancer patients, or patients with acute appendicitis—but rather with the discretionary situations.

Dr. Tony Bianchi: In Colorado, one major contribution to this tension is the manner of allocating FTEs in primary care and specialty care. Primary care is given resources as membership grows, whereas specialty care more often than not remains the same. The intent is to have more of the patient’s care provided by a primary care provider, implying that the scope of practice of the primary care physicians must continue to expand in the future as they are given the time and resources. The optimum scope of practice is obviously a source of controversy between specialists and primary care physicians.

Dr. Walid Sidani: Specialty access in Ohio has been a major problem for several years. We had an operational gap between the specialists and the primary care providers as well as a gap in relationships. At times,
written referrals just seemed to be lost. We have taken measures to close this gap, primarily by getting specialists and primary care providers to solve problems together.

**Dr. Jacobs:** Tell our readers about some of the programs your Regions have instituted to deal with this challenge.

**Dr. Lieberman:** Several years ago in the Northwest group, we initiated the “Urophone” program, in which one of our six urologists would be available by cellular phone for the primary care physicians. We have strongly encouraged, but it is not mandatory, that primary care physicians call on any referral during office hours. If a referral is inappropriate, we have the opportunity for one-on-one education and resolve the issue. If a referral is to be scheduled, we can recommend the most appropriate lab tests and x-ray films before the visits, many times eliminating extra unnecessary follow-up visits with us.

**Dr. Jacobs:** What kind of response have you received from primary care providers?

**Dr. Lieberman:** Pediatricians like it a lot. Busy primary care providers resent having to pick up the phone and call us. My contention is that it is easier to pick up the phone and call than it is to initiate a referral in another way.

**Dr. Caplan:** Northern California has been experimenting with this Northwest Region cellular phone approach in orthopedics and urology, and in a variety of different departments. Our model is basically the same. One of the real, nice aspects of this is that if the specialists are nearby, they can go to the exam room of the primary care physician and essentially perform a co-visit at that time, basically a consultation on site. This model accomplishes many things, one being an educational component in the transfer of knowledge one on one, especially helpful in orthopedics, where you can demonstrate a procedure or technique in the office setting. Most important, members have really liked this. Overall, it has worked out quite well.

**Dr. Lieberman:** We do a lot of that also. It is amazing how much the members like that kind of service. For example, I can come from across the street to quickly assess a scrotal mass of a patient in the exam room of the primary care provider. Members are incredibly satisfied with this kind of service.

**Dr. Sidani:** In Ohio, we have adopted the Northwest model but had to switch to a pager system because the cellular phone did not work in many of our buildings. Now we have nine specialty departments available daily on a “consult pager.” I do agree with what’s been said. Our experience has been that this type of primary care specialty communication has greatly resolved our access problem and has enhanced collegiality in our group. Primary care practitioners in Ohio have been extremely pleased that they now have someone to talk to.

**Dr. Jacobs:** Sounds like what you all are describing is the integrated group practice in action. Andy, as a primary care physician, what is your response to this consultant phone or pager system?

**Dr. Golden:** I guess I have a mixed reaction to this system. I’m a little skeptical that the phone or pages would actually get answered in a timeframe that would meet my needs. If I am reassured that it does, then I would be more accepting. I like the aspect of having the patient prepared for the consult. I’m also fairly realistic in realizing that if you have to call rather than write out a consult, you might think more before requesting a consult. So I can see how it would work if it is convenient for the primary care physician to make that call. I would be interested to hear what percentage of calls would actually result in an appointment rather than telephone advice. That may be hard to sort out because sometimes I just call up the urologist to ask questions without the intent to refer.

**Dr. Lieberman:** In terms of the prompt response, the only limiting factor is cellular phone technology, as Walid mentioned. When we are in certain parts of the hospital, the basement, or in x-ray, the phones just won’t ring or we get cut off during a conversation; it’s extremely frustrating to the physicians. In terms of appointments, we actually studied this. A third of the calls would be seen that day, a third would be given routine appointments, and a third would not need to be seen. In addition, we surveyed the primary care physicians, and 85% were overwhelmingly satisfied. We probably need to repeat this survey again, because use of the Urophone has decreased recently, probably secondary to the influx of new physicians.

**Dr. Bianchi:** In Colorado, we have a mandatory telephone consultation process for the gastroenterology, neurology, and cardiology departments, and are planning processes for the urology and head and neck departments. We have good, objective data to measure primary care acceptance. In gastroenterology, for example, 80% of primary care physicians were extremely satisfied. Primary care physicians must know what to ask specialists. Also, they must know their patients well to supply specialists with the requested information. We need to measure and value this type of telephone work. Special-
ists need to be good teachers, have good telephone manners, and to see this as a valuable service.

**Dr. Jacobs:** What other strategies have your Regions undertaken?

**Dr. Golden:** In San Diego, we developed a solution for the long wait times for specialty appointments. We established an absolute standard of 80% of referrals being seen within 2 weeks of the date of referral, and developed a monthly monitor that reported if the access. If a specialty did not meet that standard in two consecutive reporting periods, the department would have to work two extra unpaid hours per week. If the standard was still not met after another month, the required extra work increased to 4 hours. As a result of making these consequences clear, most departments rearranged their priorities and made enough appointment slots available for consultants, sometimes at the expense of returns and even of OR time. Implementation of such a program raises the issue of resource needs. Our program developed a basis to allocate resources, then available. If a department was unable to meet the 2 week access standard despite working the 4 hours of extra unpaid work each week, they would be in a priority position to receive additional resources. This model set up a format for departments to prove that they need increased staffing.

**Dr. Lieberman:** The Northwest also adopted this San Diego approach. What’s interesting is that this gave specialty departments the incentive to fix their system problems in order to be more efficient.

**Dr. Jacobs:** I would think that as an educator, the specialist is in a good position to use referrals to teach the referring physician and maybe decrease what they feel are inappropriate referrals. Have your groups tried any strategies to facilitate constructive and timely feedback from specialists to the referring physician?

**Dr. Behlmer:** In Georgia, hoping to increase the quality of feedback to the referring physician, we added a section to the bottom of our referral form for the specialist to comment if guidelines were followed or not. It didn’t really work. Specialists were reluctant to relay true feelings, even though the focus was on helping the primary care provider and not on judging them. Shareholder voting and peer input during our appraisal process reinforced this hesitancy to give feedback. We probably need to focus on those providers that send high-quality, appropriate referrals. Specialists know who these physicians are who acquire new skills and knowledge. They need to be recognized and in some way presented as role models.

**Dr. Sidani:** We also tried several attempts to resolve the problem with this kind of feedback, but we were only partially or temporarily successful.

**Dr. Golden:** We have also tried many different approaches in San Diego, and none of them have been very successful. We have tried having the specialist put a sticker on the consult copy returned to the referring physician when the referral did not meet guidelines. These stickers were preprinted with a specific guideline on each. The enthusiasm for doing this quickly waned. For a period of time, the orthopedic department tried to call for “clarification” of referrals that they found lacking and to suggest further care prior to referral. We also tried a “Referral Assessment Form” to be completed by the consultant and sent to the referring physician with opportunities to improve identified. It was seldom used.

**Dr. Jacobs:** Andy, why do you think these initiatives were not successful?

**Dr. Golden:** I think everyone is busy enough, and understanding and tolerant enough, that on a day-by-day basis individuals don’t feel it is worth taking the time. They would rather just direct their energies to taking care of patients scheduled and the other demands of the day.

**Dr. Jacobs:** Have any of you undertaken an initiative that attempts to decrease referral demand through primary care provider CME-related education?

**Dr. Golden:** We have a model for doing so that I wish was used more often. Our gastroenterology department did a study of referrals, identified those they felt were inappropriate, and placed them in categories. They found that the highest number of inappropriate referrals was based on the inaccurate diagnosis of iron deficiency anemia, leading to refer-

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### Panel discussion summary

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<td>Mandatory two-week minimum waiting time for specialty appointments</td>
<td>High</td>
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<tr>
<td>Specialty feedback to PCP after referral</td>
<td>Low</td>
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<tr>
<td>Specialty educating PCPs after study of inappropriate referrals</td>
<td>High</td>
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<tr>
<td>Referral guidelines</td>
<td>Low-moderate</td>
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<tr>
<td>“Open Access” to specialties</td>
<td></td>
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<tr>
<td>New Member</td>
<td>High</td>
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<tr>
<td>Others</td>
<td>Low-moderate</td>
</tr>
<tr>
<td>Direct booking by PCP</td>
<td>High</td>
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</table>
Dr. Lieberman: We also have a set of guidelines in written form; we call it the “Urophone Yellow Pages.” These guidelines address the 10 most common reasons people are referred to urology, determined by my review of over 1000 patients referred to urology. We then went to various clinics to educate providers and to discuss use of the Urophone, emphasizing what information should be obtained before the phone call.

Dr. Behlmer: An integral component of our redesign efforts in Georgia has been to assist primary care health care teams in expanding their capabilities, with an initial focus on teaching dermatology and orthopedic skills. Although the programs have been extremely well received by primary care providers, we have not yet documented a change in practice habits among the teams. We realize that we will have to adjust scheduling processes, both to get patients to the primary care team for problems previously dealt with by specialists, and change visit types so primary care practitioners have time to apply their new learning.

Dr. Bianchi: Since we have computer tracking of referrals by physician, we can identify primary care physicians who refer at a significantly higher rate than their peers. If subsequent chart audits suggest a need in this area, the primary care physician is encouraged to use CME time in this specialty area. With this strategy, we have actually seen an improvement in individual’s referral rates. By the way, these decisions were made by primary care peers along guidelines.

Dr. Caplan: We have defined the scope of practice for primary care practitioners, which is basically a list of skills and competencies which they can be expected to possess, and which are established in collaboration with primary and specialty chiefs. For the first time, we have spelled this out in detail. Similarly to what Patricia mentioned as one of Georgia’s strategies, these lists have been developed as part of the redesign across Northern California.

Dr. Jacobs: Are your guidelines online in the Northwest?

Dr. Lieberman: Yes, they are online and very easily accessed, but they are still not commonly used. I can only speak for my department, and I don’t think the guidelines have impacted the number or quality of our referrals.

Dr. Caplan: In Northern California we’re implementing a large redesign of primary care and part of that has been the recognition that we have to find a more effective way of offering specialty service to this primary care population. There has to be a much more collaborative and integrated approach than in the past. We’re doing this by developing a set of specialty interface agreements between each of the specialty services and primary care, with the intent being to support the primary care teams that will be caring for these defined populations of members. These agreements really help define and clarify the referral and relationship issues. To develop these, each specialty group meets with its primary care colleagues using a template which outlines the basic set of agreements to be reached, and describes expectations for both sides and how access will be offered. I believe that these agreements will be extremely helpful. We’re doing this based on the recognition that traditionally, we have not worked particularly well together.
Dr. Lieberman: We address this problem in our chiefs’ meetings, where the expectations of one department to another have been developed. We would take two or three departments at each chief’s meeting and ask a specialty department if they have met the expectations of the primary care department and how they could do better. In turn, the specialty department would describe what they would expect from primary care physicians, such as assisting in managing hospitalized patients.

Dr. Bianchi: In Colorado, we have had specialists work in the primary care department so they could teach while providing hands-on patient care. This has worked well. We would like to see primary care physicians work in specialty departments and then become the primary care experts in this area.

Dr. Jacobs: Let’s focus for a few minutes on access. I would like to hear how our panelists react to the phrase “open access to specialists.”

Dr. Caplan: I think this is something that is very active in the California marketplace. However, when our competitors market open access, frequently they are selling open access with a price tag. They might charge increased copayments or have a different premium structure or a more limited list of providers. So it is something that people are using in Northern California to try to get a competitive advantage. We have not felt as yet the need to develop open access models.

Dr. Golden: I’d say the same thing for San Diego. Recently our membership has grown dramatically. We cannot say that lack of direct access to specialists is having a marketing impact. We still promote ease in getting to a specialist when needed, and we monitor that using the STAR survey. So I would say, no, we haven’t felt the pressure to develop an open access system for specialty care.

Dr. Lieberman: We also have not done anything in open access, and there really isn’t any pressure in the market to do so.

Dr. Bianchi: With regard to open access to specialists, I believe we have to be very careful that in giving the patients what they want, instead of what they need, we are not compromising their overall care. The specific focus of specialists may not be as valuable overall as the broad approach of primary care physicians. We are also a complex organization, and for the system to work well, we need the primary care physician or team to help patients get through the system. So while I agree that we need well-functioning referral processes, direct access to the specialists may result in inferior care. It doesn’t serve us or the patients well.

Dr. Caplan: We don’t feel that direct access is precluded by the relationship of primary care and specialists. In fact, in certain situations, a patient probably should have direct access to specialists, such as when multiple visits are required for a condition, or for a specific type of clinical problem. Criteria would be worked out in service agreements between specialty and primary care departments.

Dr. Jacobs: So advice nurses might be able to send a patient directly to specialty care, depending on protocols created from these agreements?

Dr. Caplan: Yes, based on the presenting complaint.

Dr. Golden: We also have a special intake process that we promote for new members. Any new member who has been actively seeing a specialist

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before joining Kaiser Permanente can have their care transferred and appointments arranged with our specialist without going through primary care to be referred. These patients are then referred back to primary care as appropriate. It is not really a very high volume of referrals.

**Dr. Lieberman:** We do the same thing.

**Dr. Jacobs:** Any other related initiatives?

**Dr. Golden:** As a result of the 2-week appointment standard being monitored, the concept of directly booking referrals when patients are in the primary care office was initiated. In the past, we wrote referrals and told patients that the specialty department would call them. However, as it became important for the specialty department to get the patient into their office, specialists became more supportive of scheduling taking place while the patient is still in the office. Now, 30% of our patients leave the office with an appointment already booked with the specialist.

**Dr. Caplan:** We are doing the same. The direct booking guidelines get reviewed by the specialists. Certainly it is extremely well received by the members.

**Dr. Lieberman:** If the patient needs an appointment and is still in the office when we talk to the primary care physician, we have our appointment clerk call the primary care office and give the patient an appointment. The member really appreciates this service. In the past they were never certain when they left their primary care provider's office if and when they would hear from the specialist.

**Dr. Sidani:** In Ohio, the step from the pager system to direct patient booking has been a tough one for us. By opening up specialists' schedules to primary care, pre-referral pager calls have markedly decreased. Our goal is to give our patients an appointment with the specialist before they leave the office of the referring physician. We all have work to do in this area.

**Dr. Jacobs:** Any final comments?

**Dr. Lieberman:** Refining our referral process is very important to the overall success of the delivery systems. If our changes are always in the best interest of patients, and provide them with the right care, then I think it will be done in the right way. It can be our advantage over any of the captivated systems.

**Dr. Behlmer:** I believe that this is the most important issue facing our Medical Groups. Our patients expect that they are being cared for by a collaborating group of physicians with a unified mission, and do not expect to fall between the cracks. The quality of the specialty-primary care interface should be the strength of a well-integrated group model.

**Dr. Caplan:** I believe that if we can do this right and have a rational plan for providing specialty care, it is a very powerful advertisement for Kaiser Permanente.

**Dr. Jacobs:** I do want to thank our panelists. I believe that you have successfully defined the challenge, offered some solutions to the Permanente community, and I am sure that your comments will stimulate a dialogue—a very necessary dialogue—across the country. As the Advisory Board Company states: “the successful medical groups in the future will be those groups which resolve the service issues around specialty access.” Thanks again for participating.

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**To our readers:** I invite your response to this roundtable discussion. I’m sure much more can be said and that many other innovations are in place in other Kaiser Permanente divisions. Please send your comments to Merry Parker, Managing Editor; via fax at (503) 813-2348 or, mail to 500 NE Multnomah Street, Suite 100, Portland, Oregon, 97232. We will publish a representative sampling of responses in future editions of *The Permanente Journal* as the dialogue on this key systems challenge continues.

- Lee Jacobs, MD, Section Editor, Health Systems Management
Achieving Clinician Use and Acceptance of the Electronic Medical Record

Introduction
This article addresses the important role clinician acceptance plays in successful implementation of an Electronic Medical Record (EMR) system. It discusses various barriers and challenges as well as strategies for overcoming them.

The Kaiser Permanente Medical Care Program has embarked on a national information technology strategy. The Program intends to invest considerable resources in the next few years to develop and implement a Clinical Information System across the country. The expected benefits include improved quality of care, improved information management, increased efficiency of practice, decreased practice variability, and improved cost structure. Installing an EMR system in a large organization is a great undertaking with a variety of hurdles to overcome.1 Perhaps chief among the barriers is achieving user acceptance and successful use. Unless achieved, the system may otherwise be very acceptable while the project remains a failure.2 How does one ensure user acceptance?

The Northwest Division is now the second largest of seven divisions of the Kaiser Permanente Program. Through its constituent members (Kaiser Permanente Northwest, Group Health Cooperative, and Group Health Northwest) it serves over one million members in three local markets in Oregon, Washington, and Idaho. In 1994, Kaiser Permanente Northwest, serving Northwest Oregon and Southwest Washington, began implementation of a comprehensive EMR system, EpicCare (Epic Systems, Madison, Wisconsin).3,4 Today, our system is in daily use by more than 800 physician and allied health clinicians, more than 1300 other clinical staff users, directly serving 418,000 plan members in our local market. To our knowledge, we have the largest installation of a comprehensive outpatient medical record system in the country. The members of our project team are often asked, “How did you do it? Did you meet any resistance along the way? What can you share with others who are about to embark on a similar journey?”

This article will address the issue of clinician “buy-in.” It will discuss the types of resistance we met. It will draw upon our experience and the literature.

“We’re in this together?”
Like other individuals, clinicians want to feel invested in projects that require them to change and exert substantial effort.

“How did you do it? Did you meet any resistance along the way? What can you share with others who are about to embark on a similar journey?”

“Like other individuals, clinicians want to feel invested in projects that require them to change and exert substantial effort.”

“Resisters” can be of many types, each with a different resistance style. The first type in our project was the time-pressed individual. This person perhaps did not see the importance of a project, did not feel enough time to make the change, or was not too busy to attend the “user” sessions. Newsletters and user tips were no help. The second type, the wooly drain-clogged individual, overwhelmed with details and often too busy to attend the “user” sessions, was predictably not interested in the communications. Clinicians who choose not to make use of the opportunities to provide input must still be aware that such opportunities exist. Otherwise, “resisters” will be quick to point out that “No one asked my opinion.”

Making this a reality is difficult. Despite considerable effort, we were unable to meet all the goals set out in our communication document. Clinicians were often too busy to attend the “user” sessions; predictably, users most in need of the sessions were often least able to attend them. Newsletters and user tips were also more sporadic than intended or optimal and were not of consistent quality. This should be someone’s clear and important accountability.

“It’s not MY system”
Clinician “buy-in” will require that their involvement is substantial and real. The project team must have strong clinician representation from the outset and throughout the project, including the planning, implementation, and post-implementation phases.5,6

By Michael A. Krall, MD

Michael A. Krall, MD, is a Family Practice Physician who has worked for Northwest Permanente, PC since 1983. He is a former Chief of Primary Care of the Salem, Oregon medical offices and has worked on clinical information projects in the Northwest Division since 1991. Dr. Krall is currently enrolled part-time in the Masters in Medical Informatics program at the Oregon Health Sciences University.
Clinicians need to believe that the decisions they make matter. This group should include “regular” practitioners and formal and informal leaders and opinion makers. It should include computer neophytes as well as more computer- or technology-oriented clinicians. Individuals who resist this technology are quick to criticize an implementation or planning team that has largely non-practicing or reputed “computer nerd” clinicians. Representing a variety of specialties, level of practitioner, and geographic settings will also prove important in most instances. Each department and facility will perceive that they have unique needs. Unless they have ample opportunity for input, they may become disgruntled. Even the best efforts in this regard will fall short at times. Although our ten-member project team included an internist, a family physician, and an obstetrician/gynecologist, all of whom were in clinical practice at least 50% of the time, we heard from primary care clinicians that they did not feel represented. The team also included a clinical pathologist. Later, we added an oncologist.

Implementers must understand the needs and expectations of their customers. They also should have a good understanding of their state of readiness for this innovation, and for change generally. Counte reported in 1987 that individuals who report the greatest difficulty adapting to medical information systems have a more negative orientation toward change in general. In our surveys of users before and after implementing EpicCare in two medical offices, we found the factor most highly correlated with a negative opinion of the computer system was disagreement with the statement “At work I like new challenges.” Gender, age, and attitudes toward or experience with computers did not correlate.

The user community should have a clear understanding of what the system can and cannot do. Customers who are accepting of the technology may have unrealistic or inflated expectations about what it will accomplish, especially in early phases. They may not appreciate that it is a tool which requires substantial configuration with local business rules and with data before realizing much of its promise. They must achieve a sense of “ownership” of these decisions and of this work. This process can be quite difficult and time consuming and must begin early. In achieving the local understandings and agreements, users begin to feel it is their system, provided their involvement in the process is substantial and real. Users should understand that the product is dynamic and that it is undergoing constant improvement. Communications regarding changes under development should be frequent. Users should see results as rapidly as possible so they feel they are being heard and supported.

Implementers must understand the needs and expectations of their customers.
not enthusiastic. Training allows opportunity to reinforce the rationale and organizational imperative for the EMR system and to hear and address the concerns of users. To be effective, this requires that representatives of the project team and clinicians are active in training. For effective use and acceptance of an EMR system, training cannot be overemphasized. Special attention must be paid to the unique requirements and learning styles of adult learners, and there must be ample opportunity for practice and for achievement of mastery. We found advanced training after 6 to 12 weeks of use very helpful. We tailor training to individuals based on their identified needs, with the primary aim being increased efficiency.

"What's in it for ME?"

The best preparation aside, when users actually start to work with the EMR in a real setting, acceptance hinges on usability of the software. What do clinicians want most? Speed and performance. At the very least, they insist, “Don’t slow me down!” The system must be fast and easy to use, and the user interface must behave consistently.¹ Users will generally expect sub-second performance for most operations and will become increasingly impatient if response time exceeds 2 to 3 seconds. This window may be extended when benefit or time saved is perceived to be greater than provided using previous methods. When clinicians perceive the time is completely nonproductive, even short waits will be intolerable. Reduced performance with new versions or features will be especially poorly accepted. The system must also make sense in the context of the clinician’s practice and workflow. Users must perceive that the system supports instead of interferes with the performance of their jobs as they define them.² Users are supportive of systems which support their work patterns, their professional status, and professional values such as impact on patient care, professional autonomy, relationship between physician and patient, and the art and science of medicine.³

The issue of authority and autonomy will affect acceptance. Important questions arise: “Will the new system enable administrators to monitor or control physician practice behavior and decrease departmental independence or professional decision making? Is there a shift in the balance of power between clinical personnel and managers, between departments, and between the institution and attending physicians?”⁴ Such changes should occur only when carefully considered and intended, when clearly justified, or when unavoidable. Even then, they must be honestly acknowledged and thoughtfully communicated.

For every system, implementers should ask, “Whom does it benefit, and who incurs its cost?” If the benefit accrues to someone other than the individual doing the work or experiencing the inconvenience, the result will likely be dissatisfaction. With clinicians it is preferable whenever possible to use the “carrot,” not the “stick” approach to motivation. We try to add value for clinicians so that they prefer using the system. Our constant refrains are “make the system so easy they want to use it” and “make it easy to do the right thing.” Unfortunately, we are not always successful. Experience has shown how important these principles are to user acceptance.

That there are costs and barriers associated with using an EMR system must be clearly acknowledged to users and potential users (Table 1). Learning and training time, and lost productivity during learning or training may be particularly difficult in small departments or in settings where it will be difficult to “back fill.” Systems that depend on clinicians entering clinic notes and orders inevitably impart some significant cost to them. Expecting this aspect of the system to be time neutral or better is very optimistic. While some notes and orders may be done more

### Table 1. Costs and barriers for clinicians associated with using an electronic medical record

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<th>Costs</th>
<th>Barriers</th>
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<tr>
<td>• Learning and training time</td>
<td>• Energy required to overcome the inertia of the status-quo</td>
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<td>• Lost productivity during learning</td>
<td>• Perception that entry is clerical work</td>
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<td>• Time for order entry and electronic charting</td>
<td>• Perception that current system is adequate</td>
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<tr>
<td>• Time and changed workflow required by alerts and reminders</td>
<td>• Lack of agreement on benefits</td>
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<td></td>
<td>• Dislike or disagreement with guidance offered by the system</td>
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<td>• Perceived lack of flexibility of system in interpretation and enforcement of rules</td>
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quickly, especially those which use panels or templates, others may be slower. Our experience is that a more realistic goal is to achieve sufficient time savings in some tasks such that the total impact on a clinicians’ day is favorable. New tasks associated with the EMR system and alerts and reminders to do more for each patient, carry time costs. Clinicians sometimes disagree with or feel constrained by the advice, and this may be a barrier.

There are additional potential barriers to clinician acceptance. There is an “energy” cost to overcome the inertia of the status quo. Clinicians may have “work-around” or local solutions that allow them to function, even though these solutions create inefficiencies elsewhere in the system. Multiple isolated records or filing systems may be an example of this. Changing from these systems to the EMR system requires a degree of effort and disruption. The perception that the current system is adequate and the new system is inflexible and of uncertain benefit also can be hurdles.

Fortunately, the potential “rewards” or benefits of such systems are also substantial (Table 2). Communicating the potential rewards genuinely is important. “Over marketing” them then failing to realize the benefits can yield dissatisfaction and mistrust. Clinicians clearly understand the importance of legible charts and ready access to prior notes and other data. The paper record is often unavailable or unreadable or the information may be misfiled or awaiting filing. When appropriate and not overly intrusive, alerts, reminders, and decision support may improve both the quality and efficiency of clinicians.

Horak described the relation between user productivity and time which results after introduction of an information system. He developed a model based on experiences implementing 5 integrated hospital information systems. After switching to the information system there is a predictable decrement in productivity as the new technology and workflows are adopted and learned. Later, productivity gradually returns. Our experience suggests a similar impact on user satisfaction during this period. In our pilot study, satisfaction had dramatically improved to 4 to 6 months after implementation (Figure 1). Anticipating this effect allows better planning and more successful management of expectations. Strategies can minimize the depth and breadth of the decline. The efforts of trainers, support personnel, and implementation teams are crucial. System modifications made in response to user requests may also contribute substantially.

<table>
<thead>
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<th>Table 2. Benefits to clinicians associated with using an electronic medical record</th>
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<tr>
<td>• Legible charts</td>
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<td>• Ready access to prior notes and other data</td>
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<tr>
<td>• Remote and simultaneous access to the medical record</td>
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<tr>
<td>• Ability to easily sort and trend past data</td>
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<tr>
<td>• Reduced need for reentering data</td>
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<tr>
<td>• Alerts, reminders, decision support with improved quality</td>
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<td>and efficiency</td>
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Fig. 1. “EpicCare is worth the time and effort to use it.” Results of user survey 2 and 4-6 months after “go-live” in the Kaiser Permanente Northwest pilot implementation. At 2 months, 52% agreed, and 39% disagreed (n=33). At 4-6 months, 85% agreed, and 6% disagreed (n=34).

“Users want to be heard, understood, taken seriously, acknowledged, empathized with, and responded to quickly.”

“What have you done for me LATELY?”

Credibility and support from the user community must be earned every day during and following implementation. First, the system must perform reliably. In addition, there must be opportunity for ongoing user input. Users want to be heard, understood, taken seriously, acknowledged, empathized with, and responded to quickly. Like other users, clinicians tend to have short memories about the good, long memories about the bad, a seemingly infinite capacity for wanting changes to the software, and a lack of patience for what it takes to change it and maintain it.

Well beyond the initial rollout, ongoing user input is necessary. Formats may differ somewhat from the early phases, but opportunities must be constant. These include phone, e-mail, onsite support personnel, and personal contact with members of the implementation team. User meetings are extremely helpful. They may take place at lunch time
“The site specialist is a trained, onsite troubleshooter with a clinical and/or Information Systems background.”

“Where were you when I NEEDED you?”

Continuous and immediately available user support is absolutely necessary. When clinicians are in the midst of seeing patients, they are frequently running behind, over-scheduled, and under a variety of pressures. Even momentary unavailability of the system or delayed ability to perform some task is unacceptable. If they need an answer about a hardware problem or how to perform a task such as generating an uncommon order or coding an unusual diagnosis, they want help immediately. Five minutes later is frequently too long because before then they need to be on to the next task. Providing this kind of support may be difficult and expensive. We hired and trained a group of professionals known as “site specialists.” During rollout, we assigned one to each clinic. After rollout, there is about one site specialist for every two clinics, but they are available by beeper at all times. The site specialist is a trained, onsite troubleshooter with a clinical and/or Information Systems background. These individuals not only provide timely user support but coordinate trouble reports, user tips, and updates.

“Oh, brother. One MORE new thing.”

It is a cliche as well as a truism that change is a constant today. Our division and local market, like others, are undergoing major restructuring. This includes closing a hospital and entering into new alliances, more than doubling the hospitals we cover. In addition, there is major reorganization of primary care services, major member access improvement initiatives, major changes in physician compensation, major geographic expansion, and more. In such an environment, implementing an EMR system is even more challenging as people may be unable to absorb new content and behaviors, even if these promise benefit. Furthermore, along with the EMR system come new tasks. Although many of these are not requirements of the EMR itself, the perception may be that they are. Various constituencies in the organization see the advent of the EMR as a means to introduce or enforce policies designed to accomplish a variety of goals. New tasks for our clinicians include diagnostic coding, evaluation and management coding, clinician order entry and prescribing, and more prevention reminders. With all the initiatives combined, clinicians find they are expected to do more in less time.

Introduction of computer systems in health care organizations result in changes on several levels. These include changes for individuals and their jobs, departments as a whole, and for performance of the department’s work. It also may affect the structure and functioning of the entire organization, as well as the quality of both service and medical care which patients receive.

Techniques for overcoming resistance to change include gathering benchmark data (establishing the imperative for change), and analyzing benefits (providing the justification). These techniques include assessing the general organizational climate (understanding and acknowledging the context for the change), and finding physician champions (overcoming inertia and resistance). They will also involve developing general ownership (“buy-in”), and establishing realistic expectations (engaging peer leadership and support). Timely training (adequate and thorough preparation), extensive support (readily available help), and system stability (an absolute requirement) will also be important. Successful implementers will also find ways to protect physician egos (keeping them “on board”), and to plan end-stage fun (rewards).

Achieving user acceptance and mastery of new technologies is far from a new problem. Doctor Henry Plummer experienced it in 1907, when he introduced the system of central medical records at the Mayo Clinic. “It was not easy for all the doctors to make the change. To some of them the new way seemed more cumbersome than the old, just a lot of unnecessary red tape. It seemed much simpler to jot down a few notes in a ledger lying open on the desk than to fill in all the blanks on a form sheet, much easier to pull out one’s own volume and look up what old record was there than to call for an envelope and wait till it was brought from the file. At first some [doctors] just forgot about the record blanks and used their ledgers when they were very busy, but in time they all saw the worth of the new system, and it became a routine followed without question and with tremendous benefit.”

Those who introduce EMR systems in the late 1990s can hope for as much success.

Acknowledgments: The author wishes to thank and acknowledge the other members of the Kaiser Permanente Northwest Clinical Information System Project Team: Dan Azevedo, Homer Chin, Larry Dworkin, Dawn Hayami, Brad Hochhalter, Gary Huscher, Peggy McClure, Nan Robertson, Nick Scootch, Paul Wallace, Richard Wong, and Jackie Zehner.
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"Toupees by Al" by Evany Zirul, DO, MFA. Another piece of her work can be seen on page 14.
The Coming Tidal Wave: Genetic Testing

A number of new technologies now exist that are likely to have a major impact on the practice of medicine over the next several years. Telemedicine is in its infancy, with teleradiology probably the most advanced.

The area that should have the greatest impact on society is the advances in genetics and genetic testing. The Human Genome Project has been underway for about 6 years, and will finish identification of the structure of human DNA over the next several years. Around 4000 single-gene disorders exist, and this project will characterize the specific location of these defects. That knowledge will provide greatly enhanced ability to provide prenatal or population screening and specific genetic therapies.

In addition to the single-gene disorders, a lot of work is going on to characterize the interaction of many chronic and degenerative disorders that have a genetic predisposition as well as the environmental and behavioral factors that may enhance their expression. Many cancers, heart disease, diabetes, arthritis, and a number of mental and neurodegenerative disorders are in this category. Over the next 20 years or so, it will be possible to prenatally test for the potential to develop a wide range of illnesses during a lifetime.

Let’s think about the implications of this on society if there is large-scale prenatal screening and case and carrier finding. Who will have a stake in knowing the genetic status of individuals besides the family and caregivers? How about governments attempting to prioritize budgets? Employers who want healthy, productive employees? Insurers who will write life and health insurance? Social agencies and the educational systems to plan their roles? What will happen to the confidentiality of this information? Despite laws to protect the confidentiality of HIV test information, it is now a required test to obtain most life insurance. This guideline was later modified to a set of recommendations to primary care providers about who should be referred for counseling and possible testing. Jake believes that lengthy discussions by trained genetic personnel will be required to review the benefits and harms of such testing. At least 4000 single-gene disorders and many chronic medical problems have a genetic component. According to John Thompson, MD, the NWP,PC chief of pathology, there are currently 140 “misspellings” of the gene for cystic fibrosis, each with a slightly different expression.

The major implication I glean from this is that the reliance on computer databases to support medical decision making will become mandatory. Large systems that can aggregate population information and make the investments to make this information readily available will have an advantage.

The implications of the work of the Human Genome Project are just being appreciated. A Working Group on Ethical, Legal, and Social Implications, has formed a Task Force on Genetic Information and Insurance. This Task Force has recommended vigorous protection of genetic privacy, while still acknowledging that insurance companies and others will probably gain access to this information.

Recently the President has proposed federal legislation to limit use of genetic testing information. Last year, nine states enacted genetic testing legislation (Alabama, Arizona, Arkansas, Connecticut, Florida, Illinois, Indiana, Tennessee, and Texas). Most of these laws ban the release of genetic test results without informed consent of the individual tested; and six ban insurers from refusing to issue or renew policies to individuals or creating differential premiums on the basis of genetic information. Some exceptions to absolute confidentiality have been recognized, such as use of the testing information for research, as long as it is anonymous and cannot be traced.

As both a very large insurer and a provider, Kaiser Permanente will have to wrestle with all the ethical, legal, moral, and social issues of widespread genetic testing. I can’t think of any medical technology that could affect the lives of our children and grandchildren more.

When the Genome Project is finished, some 50,000 to 100,000 genes, and later their specific products, will be identified and catalogued. Tests will be available to pinpoint defects in single genes, and the presence, absence, or partial expression of the gene product. Rapidly, new generations of therapies will become available designed to replace defective gene products, modify their function, or stop production of unwanted proteins.

Consider the impact on the practice of medicine of having this body of knowledge available. We have a glimpse of this future with the identification of the BRCA1 and BRCA2 genes for breast/ovarian cancer susceptibility. Jake Reiss, MD, from NWP,PC led a national effort to develop a guideline for determining who should be identified and tested. This guideline began as a huge probability spreadsheet, covering six or seven pages of analysis and interaction of risk factors, developed in order to guide the discussion with the patient of why or why not to be tested, and what a positive or negative result means. Due to its complexity the guideline was later modified to a set of recommendations to primary care providers about who should be referred for counseling and possible testing. Jake believes that lengthy discussions by trained genetic personnel will be required to review the benefits and harms of such testing. At least 4000 single-gene disorders and many chronic medical problems have a genetic component. According to John Thompson, MD, the NWP,PC chief of pathology, there are currently 140 “misspellings” of the gene for cystic fibrosis, each with a slightly different expression.

The coming tidal wave of genetic testing is in its infancy, with teleradiology probably the most advanced.
available to clinicians will attract the best and brightest clinicians to the practice of medicine, not to mention create enormous value for members.

There are clearly major cost implications. I suspect only a few laboratories will have the resources to run all the very specific genetic tests, and they will be expensive. The therapies, if the few current genespecific agents are an indication, will also be very expensive. Which agents are experimental, which are not; and who will be a candidate for therapy at what level of probable risk will keep new technologies committees busy for decades.

My fear is that the potential explosion in the cost of medical care, given our society’s value of “I want everything possible available,” will make health insurance less and less affordable, even further widening the gap between those who have access to everything, and the rest.

The third area of impact on us will be the availability of personnel trained to deal with all the genetic information and to counsel patients on its interpretation. Right now, NWPPC is one of only four Permanente Groups with an in-house genetic service. In fact, we support our geneticist, Jake Reiss, MD, in consulting with the State of Idaho because they don’t have similar resources in that state. I suspect all the Permanente Groups will have to pool resources and link them electronically to provide a consistent level of service around the country and to make sure that we are getting the best information possible to our members. There simply aren’t enough training programs in the world to meet the potential needs.

The last area of impact I want to mention is confidentiality. Despite the current legislation in a number of states, I think there will be enormous pressure to have genetic profile information available. The line between general medical information and genetic information will become hopelessly blurred. Does your child have recurrent ear infections? Is it a result of a gene defect controlling immunologic response and therefore a pre-existing condition that will contribute to other disorders later in life? This may be a little far-fetched but not very. I have no answer to the issue of confidentiality; I suspect it will be played out in the courts and the legislatures.

These issues are all a little way off in the future. They may not seem important now as you struggle through the day, or with EpicCare, our clinical information system—but they will be, and probably sooner rather than later. ✤

Inside Microsoft’s Brain

“Research is a little like conducting a dinner party. You don’t interrupt the conversations and tell people what they should be saying and thinking. If you pick the right people to convene, more and better things happen than you could have planned.”

Nathan Myhrvold, Chief Technology Officer
("Chief Propeller Head")

Fortune, December 8, 1997
Gracie in My Heart

Well, Gracie,
you’re in there.
 You made it,

but-

 but, I don’t think
this is what you had in mind.
Sure, you were hand-picked
when you were a baby or a cub
or a piglet
or whatever newborn pigs are called.
And you were raised in special
sanitary surroundings
a “pure porcine environment,” they called it.

So, now you are in my heart, Gracie,
or at least part of you is.
Your perfect aortic valve has replaced
my disfigured one,
and though you will not know any more
of your own life,
part of you has joined and is prolonging the life
of a poetic sort of creature,
a human creature.

I think, Gracie,
I want to think, Gracie,
that when you were whole
and had your own integrity as a creature
that you once or twice hesitated,
 lingered,
to look a moment at a sunset,
or cocked your round head,
to listen to a bird call,
or heard and wondered about
the laughter of children,
the cries of newborn baby pigs younger than you.

So Gracie, here we are.
Inseparable for the rest of my life
and for the rest of the life of your
aortic heart valve.
We two, we are one.
It's not quite like the oneness of marriage.
You see, it wasn’t a minister that knit us together.
It was a surgeon,
a surgeon of the heart,
a skilled compassionate heart surgeon,
a female like you,
and your name is Gracie, and hers is Nora,

Nora Burgess to tell the whole story.

I’m sure glad the three of us met.
Are you also glad, Gracie?
I hope I can do continuing honor
 to that most precious part of yourself
that was given to me.

Know that yours
is a place of honor in my heart,
a place of gratitude

and honor. ♦

Gracie in My Heart

By Bob Randolph

BOB RANDOLPH, a Kaiser Permanente member, is very active in the world of poetry. He has published 6 books of poetry, hosts two radio programs regularly, and is a guest on several others where he discusses and recites his poetry. He wrote Gracie in my Heart in August 1994, after having an operation to replace his aortic valve with a porcine valve—given to him by a pig he named “Gracie.”
Couplets to a Pre-Existing Condition
By Ronald R. Louie, MD

- For H.J.R.

O Solomon! what wisdom is needed for the physician who deals with a child and a “pre-existing condition”: of all known miseries, the one that presupposes a definable beginning, and presumptively imposes a linear relationship of time to illness, with no respect for the sublime that turns lugubrious, ending with antecedents circular, and predicated upon a bureaucratic vernacular; Which for the peripatetic pediatrician presents a peculiar imprecision: when caring for very sick children or infants, with cystic fibrosis or leukemia, for instance, whose spirits hold hostage parental emotions; Are these children just some post-conceived notions, begging their epistemic question, with exons existential, full of knowing and pre-knowing, (the code confidential)? Can we now really judge origins, without pre-maturity, or assess a person’s, or a population’s risk-pool purity, and not mock the politics of self-determination? Yet Media-tricians trumpet the research’s implication for these progenitor cell products in our age of new genetics, these innocently assorted alleles, (admittedly, at times, pathogenic), whose critical pre-existing condition is birth, with no consideration of bottom-line net worth?

Retirement
By Gopal Nemana, MD

Whither your journey, Oh lonely man? In this forest of health care Prowling as a hungry wolf Realizing nobody will care. It’s time to play your game of golf and be joyful that you are again a man.

When you are through with unsalvageable code blues Realize you should start singing your own life’s blues. Lately, I have been kept awake by the rumor of a golden handshake.

In reality it’s a kick from a golden boot It hurts more than one from a leather boot It doesn’t matter, no one will pay a hoot It is a horn you can no more toot.

Pay attention to that call from yonder Go on the trail, be lonely and ponder Appreciate nature’s beauty and wonder At God’s creation and all its splendor.
Heritability of Longitudinal Changes in Coronary Heart Disease Risk Factors in Women Twins

Numerous studies have demonstrated genetic influences on levels of coronary heart disease (CHD) risk factors, but there also may be genetic effects on the intraindividual variation in these risk factors over time. Changes in risk factors are likely to reflect genetic-environmental interactions and may have important implications for understanding CHD risk. The present study examines the heritability of changes in CHD risk factors, using data from the two examinations by the Kaiser Permanente Women Twins Study, performed a decade apart. The sample consisted of 348 pairs of women twins who participated in both examinations, including 203 MZ pairs and 145 DZ pairs. Average ages at the two examinations were 41 and 51 years, respectively. By means of three different statistical analytic approaches, moderate heritability estimates were demonstrated for changes in LDL cholesterol \( h^2 = 0.25-0.36 \) and in HDL cholesterol \( h^2 = 0.23-0.58 \), some of which were statistically significant. Although small to moderate heritability estimates were found for systolic blood pressure \( h^2 = 0.18-0.37; p < 0.05 \) for some estimates), no genetic influence on changes in diastolic blood pressure was detected. Based on longitudinal twin data in women, this study demonstrates a genetic influence on changes in both lipoprotein risk factors and systolic blood pressure over a decade.

Epidemiology and Outcome of Patients Hospitalized with Acute Lower Gastrointestinal Hemorrhage: a Population-Based Study

Objectives: Population-based data on the epidemiology and outcome of patients hospitalized with acute lower gastrointestinal hemorrhage (ALGIH) are lacking. This survey of the incidence, etiology, therapy, and long-term outcome of patients with ALGIH was conducted in a defined population.

Methods: In a large health maintenance organization, discharge data and colonoscopy records were used to identify adults hospitalized with ALGIH from 1990 to 1993. Data were collected by record review and telephone calls.

Results: Two hundred nineteen patients had 235 hospitalizations, yielding an estimated annual incidence rate of 20.5 patients/100,000 (24.2 in males versus 17.2 in females, \( p < .001 \)). The rate increased >200-fold from the third to the ninth decades of life. Diagnoses were: colonic diverticulosis, 91 (41.6%); colorectal malignancy, 20 (9.1%); ischemic colitis, 19 (8.7%); miscellaneous, 63 (28.8%); and unknown, 26 (11.9%). Eight (3.6%) patients died in the hospital (5 of 206 (2.4%) with hemorrhage before admission versus 3 of 13 (23.1%) with hemorrhage after admission, \( p < .001 \)). Follow-up of 210 of 211 (99.5%) survivors was 34.0 +/- 1.1 months. In the 83 diverticulosis patients without definitive therapy, the hemorrhage recurrence rate (Kaplan-Meier method) was 9% at 1 year, 10% at 2 years, 19% at 3 years, and 25% at 4 years. In the 89 diverticulosis patients who survived hospitalization, all-cause mortality rates (none from hemorrhage) were 11% at 1 year, 15% at 2 years, 18% at 3 years, and 20% at 4 years.

Conclusions: Hospitalization with ALGIH is related to age and male gender. After hemorrhage from colonic diverticulosis, the leading cause, rates of ALGIH recurrence and unrelated death are similar during the next 4 years.

Specialty Differences in the Management of Asthma. A Cross-Sectional Assessment of Allergists’ Patients and Generalists Patients in a Large HMO.

Objective: To examine the differences in medical management and quality of life between patients with asthma who receive their primary asthma care from allergists and those who receive their care from generalists in a large health maintenance organization (HMO).

Methods: We conducted a cross-sectional study of patients with asthma in a large HMO (Kaiser Permanente, Northwest Region, Portland, Ore). Participants were 392 individuals aged 15 through 55 years with physician-diagnosed asthma, taking anti-asthma medications, reporting current asthma symptoms, and receiving asthma care in an allergist or from a generalist. Primary outcomes included characteristics of asthma, health care utilization, and quality of life.

Results: Patients cared for by allergists tended to have more severe asthma than those cared for by generalists \( (p < .01) \). The allergists’ patients tended...
to be older (38.6 +/- 9.6 years vs 35.7 +/- 12.6 years, p < .01), more atopic (91% vs 78%, p < .01), and more likely to report perennial (rather than seasonal) asthma (26% vs 36%, p < .04) than the generalists' patients. Patients receiving their primary asthma care from an allergist were considerably more likely than generalists' patients to report using inhaled anti-inflammatory agents (p < .01), oral steroids (p < .01), and regular (daily) breathing medications to control their asthma (p < .01). Allergists' patients were more likely to have asthma exacerbations treated in a clinic setting rather than an emergency department (p < .01). Furthermore, allergists' patients reported significantly improved quality of life as measured by several dimensions of the SF-36 scale (physical functioning, role emotional, bodily pain, and general health: p < .05).

Conclusions: These findings suggest that specialist care of asthma is of benefit for patients with asthma in a large HMO. Specifically, the allergists' patients conformed more closely to national asthma management guidelines and reported better quality of life than did the generalists' patients.

**Extending Health Maintenance Organization Insurance to the Uninsured: A Controlled Measure of Health Care Utilization**


Objective: To investigate the utilization of health care services of previously uninsured low-income patients after becoming insured by a health maintenance organization (HMO).

Design: Retrospective study of utilization in a previously uninsured study group compared with an age- and sex-matched randomly selected control group of commercial HMO enrollees.

Setting: Group model HMO

Patients: A study group of 346 previously uninsured low-income patients and 382 controls.

Measures: Outpatient visits of primary and specialty care, outpatient pharmacy, laboratory, and radiology use, and inpatient admissions and hospital days over a 2-year period. Self-reported health status measures were obtained to control for differences in health status.

Principal Findings: There were no differences between the study and control groups in hospital admissions, hospital days, and measures of outpatient laboratory, pharmacy, and radiology use. The odds of having an outpatient visit per patient per month was 30% higher for the study group than did the generalists' patients. While both groups utilized more services in the early phase of their enrollment, the intensity of this start-up was similar for both groups.

Conclusions: Compared with a commercial group of the same age and sex, the patterns of utilization were similar and the financial costs of care were only moderately more for a previously uninsured group provided with comprehensive HMO insurance. With the growth of managed care, these data should be beneficial in the development of health care programs for the growing number of uninsured Americans.

**Efficacy and Cost-Effectiveness of Multihole Fine-Needle Aspiration of Head and Neck Masses**


To determine whether the specimen from fine-needle aspiration (FNA) biopsy of head and neck masses has greater diagnostic accuracy when using multihole needles than when using conventional, single-hole needles, we did a prospective, randomized, single-blinded study comparing diagnoses obtained using both types of needles in FNA biopsies of head and neck masses. Eighty-eight patients served as their own controls and had 91 FNA biopsies with both multihole and single-hole, 22-gauge needles. Order of biopsy was randomized and was unknown to the cytopathologist. No statistically significant differences were noted in quantity of specimen material obtained, quality of fixation, or diagnostic value between the multihole and conventional needle. We found no advantage in using the more costly multihole needle in FNA biopsy of head and neck masses.

**Heritability of Factors of the Insulin Resistance Syndrome in Women Twins**


The insulin resistance syndrome (IRS) is characterized by a combination of interrelated coronary heart disease (CHD) risk factors, including low high-density lipoprotein cholesterol (HDL-C) levels, obesity and increases in triglyceride (TG), blood pressure, small low-density lipoprotein particles (LDL), and both fasting and postload plasma insulin and glucose. Using factor analysis, we previously identified 3 uncorrelated factors that explained 66% of the variance among these variables, based on data from women participating in examination 2 of the Kaiser Permanente Women Twins Study in Oakland, CA during 1989-1990. The factors were interpreted as: 1) body mass/fat distribution, 2) insulin/glucose, and 3) lipids: TG,
The rate of freedom from progressive HD was 92% (95% confidence interval [CI] 88% to 96%) for patients treated with STLI and 87% (95% CI, 81% to 93%) for patients treated with VBM and regional radiotherapy. Six of seven patients who relapsed are alive and in remission following successful second-line therapy.

Conclusion: Given the caveat of a small number of patients, the results of extended-field radiotherapy and VBM and regional radiotherapy are comparable with a median follow-up period of 4 years. VBM serves as a paradigm to reduce late effects in favorable early-stage HD. We do not advocate its routine use in clinical practice, but instead encourage participation in clinical trials with the objective of maintaining efficacy while reducing toxicity in CS I and II HD.

Marijuana Use and Mortality


Objectives: The purpose of this study was to examine the relationship of marijuana use to mortality.

Methods: The study population comprised 65171 Kaiser Permanente Medical Care Program enrollees, aged 15 through 49 years, who completed questionnaires about smoking habits, including marijuana use, between 1979 and 1985. Mortality follow-up was conducted through 1991.

Results: Compared with nonuse or experimentation (lifetime use six or fewer times), current marijuana use was not associated with a significantly increased risk of non-acquired immunodeficiency syndrome (AIDS) mortality in men (relative risk [RR] = 1.12, 95% confidence interval [CI] = 0.89, 1.39) or of total mortality in women (RR = 1.09, 95% CI = 0.80, 1.48). Current marijuana use was associated with increased risk of AIDS mortality in men (RR = 1.90, 95% CI = 1.33, 2.73), an association that probably was not casual but most likely represented uncontrolled confounding by male homosexual behavior. This interpretation was supported by the lack of association of marijuana use with AIDS mortality in men from a Kaiser Permanente AIDS database. Relative risks for ever use of marijuana were similar.

Conclusions: Marijuana use in a prepaid health care-based study cohort had little effect on non-AIDS mortality in men and on total mortality in women.
Some of us remember with trepidation the experience of anesthesia with ether drip in the 1930s—without pre-medication and administered by a non-anesthesiologist. Dr. Fisher tells us about the quantum leap of anesthesia in the forties and fifties. For my gallbladder surgery in the 1990s, Dr. Bhawar Singh told me he used midazolam IV preop for sedation and anxiolysis, induction with IV propofol and maintenance with Levoflurane and at times succinylcholine, a short-acting curarelike drug. Perfect nirvana, no nausea, and no more fear.

- Ek Ursin, Editor

Ether, nitrous oxide, cyclopropane, and pentothal were used in 95% of general anesthetics in the 1940s and 1950s. Other agents used occasionally were chloroform, Avertin (tribromethanol), used rectally with nitrous oxide, chiefly for craniotomies. Induction was quiet and lasted a long time. Also in use was Vinethene (divinyl ether), developed by Chauncy Leake, our professor of pharmacology.

Ether was the most common agent because it was the safest in random hands. (I have a friend who had a hysterectomy in a hospital in Aspen where the janitor gave the anesthetics.) Ether was capable of producing deep relaxation but was slow being absorbed, which gave more time to react to abnormal situations. Inductions could be a battle. It was a matter of pride to be skillful enough to do a smooth induction with considerable vocal suggestion. About 40% of patients had nausea post anesthesia, and because the anesthesia was flammable, that meant danger when electrocautery came into widespread use.

Nitrous oxide was used for operations where relaxation was not necessary such as radical mastectomy, thyroidectomies, and most orthopedic procedures. We used heavy premedication with barbiturates and narcotics. Typical might be 200 mg of pentobarbital at 6:00 a.m. and 15 mg of morphine at 7:00 a.m. for an 8:00 a.m. induction. At 7:30 a.m., we would look at the patient. We wanted patients to be rousable but asleep if left alone. We gave another dose of morphine if they were not that sleepy. Induction was quiet, and within 5 minutes they were into first plane with loss of wink reflex. A flow of 2 liters of oxygen and 6 liters of nitrous oxide was used for induction and through the denitrogenation period. In later years it was reduced to 1 and 4 liters for all patients. The theory was that patients who could breathe adequately on room air would be all right with a 20% oxygen mixture. This sounds horrendous now, but I have to believe that we did no damage. We always kept a finger on the temporal pulse, a fingernail in direct view, constantly watching the color of the blood in the operative field, and frequently took blood pressure readings. The most significant observation was that whether surgery lasted 1 hour or 8 hours, the patient would wake up within 5 minutes after the nitrous oxide was turned off and would usually be able to answer questions. Perhaps one reason patients did so well was that there were not a lot of different drugs mixed in. If anesthesia was lightening, we would give another dose of morphine intramuscularly (so it would act smoothly without depressing respiration significantly).

Cyclopropane was used extensively because it allowed a more pleasant and rapid induction than ether. It depressed respiration, so to produce full relaxation we had to pump it in with a bag manually. It took about 30 to 40 minutes to saturate the patient enough to do a cholecystectomy comfortably. A fast surgeon would often complain when he would get there first. The molecule with three double bonds was highly flammable and explosive. A fellow resident and I tested it at the beach. We set off a balloon filled with cyclopropane plus oxygen. A 2-inch plank which we put on top of it was blown 50 feet in the air. Standing about 50 feet in front of it felt like the concussion of a six-inch gun. Although surgeons increasingly depended on electrocautery, there were strict rules about when and how an inflammable agent could be used, including control of static. I never heard of more than 4 or 5 explosions in the whole country.

When I was an intern just before WWII, any drug used for anesthesia was expected to do the whole job by itself. That is the way that pentothal was used when it was first available. It never occurred to us to mix agents or to put a mask on the patient’s face. We taped a bit of cotton on the nose to watch the breathing while we were out on the arm holding a syringe and needle in place. Laparotomies were attempted in this manner with no great success. The surgeon would often ask for some local anesthetic to infiltrate the abdominal wall. This manner of using pentothal was the reason for the many anesthesia-related deaths at Pearl Harbor. However, the word got around that pentothal induction was pleasant and they all asked for “pentothal anesthesia” and told everyone that they had a “pentothal anesthetic” although they probably had only a few milliliters for induction only.
After the war, trained anesthesiologists began to be available in significant numbers. They were divided into two schools with quite different approaches. One was based on the teachings of Ralph Waters at the University of Wisconsin. Followers of this approach tended to be purists, using single agents mostly and taking all the time necessary to do a careful job. They considered anesthesia the practice of pharmacology and physiology. The others were followers of Lundy at the Mayo Clinic. This approach also spread to the army. We called it “Slug ‘em, tube em’ and bag em”. Followers of this approach were highly skilled in the techniques of anesthesia and did everything rapidly. It was fascinating to watch them. They used pentothal for all inductions, no matter what the main agent might be. Later teachers added different agents, and different schools developed greater diversity; therefore one cannot trace the ideological heritage of present trainees.

WANTED

Writers and storytellers for our historical column, “A Moment in Time.” You can be quite serious in your style, or you may mix in an appropriate amount of levity and laughter to describe crises and their resolutions. Subject matter could discuss such topics as how your region came into being, how the main players went about it, or, in the distant past, how your work was organized in your specialty and how it compares with the guideline strategies of today.

Please send us an outline of your ideas and we will write or call you to discuss how it will fit into our plans, and approximately when we will be using your work in The Permanente Journal. The suggested total length of approximately 1000 words is somewhat negotiable.

A Slip Away

“A ship in port is safe, but that’s not what ships are built for.”
Grace Murray Hopper
Most primary care physicians suffer a common problem: our patients keep coming in with skin problems that we cannot identify. This scenario is frustrating to patients, personally embarrassing, and costly to the medical group. Dermatology referrals often ensue for what turn out to be minor problems. Rarely, serious problems are overlooked.

Though one might attempt to learn dermatology from the well-organized, erudite, and well-written texts that have been put forth for years by Walter Shelley or from the fine new text and color illustrations of Habif, in fact those books are not satisfactory for non-dermatologists when a patient is immediately at hand because they are not designed for rapid use. Gary White, the new chief of dermatology in San Diego, has filled a need with his ingenious idea for a color atlas based on characteristic location rather than etiology. That, of course, is the way patients come in: with a rash on the ankle, or blistering on the inner forearm.

The Atlas is divided into sections, including the scalp, forehead, nose, anterior neck, nape, buttocks, gluteal cleft, perianal area, and more. All lesions are well photographed in color. Each of the more than one thousand photos is accompanied by a brief text, advice on treatment, and references to the literature. The book is well indexed; inside each cover is a rapid guide to pages of the various body locations that are used.

The Color Atlas of Regional Dermatology by Dr. White is cleverly suited to be immediately useful to primary care practitioners, definitively so in most instances. I usually find it helpful a few times each week, occasionally it is a jumping off place to something I otherwise never would have learned about. For the practitioner who wants practical assistance in identifying skin lesions, this easy-to-use book is a valuable workaday tool.

Additional Books Received for Review:

On a pilot basis during the next year, a book review column will be published in each issue; reader response will determine its usefulness. Preferential review will be given to Permanente authors of recent medical works. Authors should request their publisher to send a review copy to the Journal; in the case of multiple authorship, please specify who is the Permanente author. While not all submitted texts can be reviewed, all will be acknowledged in print, with their authors.
Letters to the Editor

To the Editor.-I just received my first copy of The Permanente Journal (Volume 1, No. 2). I am very impressed with the professional quality of the Journal.
Susan Yee
Laboratory Administrator
California Division, Berkeley

To the Editor.-I have been meaning to tell you that I really do appreciate— and like— the Journal. I used some of it for inspiration (and quotes) for the recent rating agency presentations. I hope that there will continue to be such articles as those written by Oliver, Dave, and Merv, as well as the clinical contributions. By the way, I remember when I joined in 1989, in my interview time with Paul Lairson, just being incredulous that there was not such a compendium of clinical research articles by Permanente physicians... so eureka! And good job!
Janice Murphy
Vice President & Treasurer
Kaiser Foundation Hospitals/Health Plan

To the Editor.-Very excellent format and content.
Bruce Locke, MD
Administration/Surgery
The Permanente Medical Group, Walnut Creek

To the Editor.-I want to congratulate you on The Permanente Journal I just received (Volume 1, No. 2). It is very professional in appearance (equal to what one sees in a bookstore) and well written. While I am not medically trained, I did find some of the articles interesting and within my "span of understanding."
You deserve to feel good about it. Keep up the good work.
Ed Denton
Director, Design and Construction Consulting Services
Program Offices

To the Editor.-I have received both copies of The Permanente Journal and am quite impressed with the quality of production. You have a much bigger staff than our first two journals and it shows. Morrie Collen did most of The Permanente Foundation Medical Bulletin by himself. Ruth Straus and I did most of The Kaiser Foundation Medical Bulletin. I have no significant criticisms. At my age I would prefer a larger font, but if I had to choose between a larger font with less content I would choose the present way.
I can't help but be quite interested in the beginnings of your project.
Carl Fisher, MD
Anesthesiologist, retired
The Permanente Medical Group

To the Editor.-I just read the latest Permanente Journal and it is terrific. You and your team should feel enormous pride in the quality and scope of this wonderful publication. My sincere congratulations to all involved.
Peter Hohl
Director, Alliance/Acquisition Services
Program Offices

Flypaper Meeting:
"A spontaneous gathering that takes place after two people begin talking in the hallway or an office cubicle, then draw passersby into their conversation."
Gareth Branwyn, Wired, August 1997
Announcements

8th Interregional Conference on Primary Care, Occupational Health, and Musculoskeletal Medicine

Conference will be held April 4-11, 1998, at the Aston Wailea Conference Hotel in Wailea, Maui, Hawaii. For information or a brochure contact Ferdy Massimino, MD at (510) 987-4856, or via e-mail at ferdy.massimino@ncal.kaiperm.org.

Health Plan Institute's Core Program

This 3.5-day program will provide the participant with an overview of the rapidly changing contemporary health care marketplace and Kaiser Permanente’s place in it. It can assist in helping understand the context of one’s work, and what KP is doing to meet their customers’ evolving requirements.

The program will be held July 12 – 15, 1998 at the Claremont Hotel in Oakland, California. For additional information, contact David Marton, Health Plan Institute, at (510) 987-2375.

Managed Care in Occupational Health Practical Approaches to Managing Today’s Job-Related Injuries and Illnesses

The American College of Occupational and Environmental Medicine (ACOEM) offers a new in-depth, 2-day course for physicians and other occupational health care professionals. It is conducted by a nationally recognized team of occupational health experts who are proficient in all facets and models of managed occupational medicine. An intensive orientation, the course exposes licensed physicians and other health care specialists to a variety of managed care models. ACOEM has customized the course to meet varying levels of expertise and interest. Special breakout sessions on day 1 are designed exclusively for physicians and allied health professionals including nurses, health care administrators, and others involved in health care.

The course, which is being held April 25-26, 1998 in Boston, and October 16-17, 1998 in Phoenix, offers two opportunities for CME credits. ACOEM is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to sponsor continuing medical education for physicians. ACOEM designates this continuing medical education activity for 15 credit hours in Category 1 of the Physician’s Recognition Award of the American Medical Association. ACOEM also designated 15 hours of prescribed hours from the American Academy of Family Physicians.

For more information, call toll free 1-888-634-7465.

Interdivisional Occupational Health Meeting

The Interdivisional Occupational Health Kaiser-on-the-Job meeting is planned for April 24, 1998. All interested physicians and managers are encouraged to attend this informative program. The intent is to share program development and best practices: a collaborative effort in workers’ compensation business and occupational health services. The meeting will be held in Boston to support those attending the ACOEM/Kaiser Works, Inc. pre-conference program or the ACOEM annual meeting.

For more information, call toll free 1-888-634-7465.

Second Interregional Educational Symposium for Nurse Practitioners, Physician Assistants, Certified Nurse Midwives, and Certified Registered Nurse Anesthetists

This conference will be held August 20-22 at the Hyatt Newporter in Newport Beach, California. Brochures will be mailed this spring.

For more information, contact Wendy Friedman at (626) 564-3075.

Editing Help with Your Manuscripts

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 Oakland-based Kaiser Foundation Research Institute, 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.

KP Clinical Practice Exchange

http://www.kpexchange.org

KP Clinical Practice Exchange is a secure Internet-based environment for health care professional access to clinical resources, communications, and information within Kaiser Permanente. Search for the latest findings from colleagues, discuss research efforts and share common interests, locate colleagues around the corner or across the state, and contribute to the diversity and value of the Exchange with your documents.

Contact Rachelle.Mirkin@kp.org for further information.
Kaiser Permanente Clinical Best Practices in Otolaryngology Symposium

In conjunction with the Pacific Coast Oto-Ophthalmological Society (PCOOS), Kaiser Permanente is sponsoring a Clinical Best Practices in Otolaryngology Symposium. This symposium will be held on June 24, 1998, the final day of the 82nd Annual Meeting of PCOOS, at the Kauai Marriott Resort and Beach Club in Lihue, Hawaii, June 20-24, 1998. For meeting information, contact Mireya Jones, Society Manager, at (626) 564-8114 or fax (626) 564-9722.

The purpose of the Best Practices in Otolaryngology Symposium is to provide the audience with information which will help them evaluate and manage their patients in the most efficient, cost-effective manner with the best possible outcomes. Presentations should demonstrate creative, innovative, successful ways to evaluate and/or manage patients who present with either common or complex otolaryngologic/head and neck surgery problems.

For Best Practices Symposium information, contact:
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1998 Nike World Masters Games

The 1998 NIKE World Masters Games will be held in Portland, Oregon from August 9 to 22. 25,000 athletes and 100,000 people are expected. Kaiser Permanente is the only medical sponsor for the games, though shares sponsorship with 15 other national and international companies. There are many opportunities to volunteer to participate in field response and organization for the medical services.

While KP will not be supplying all of the many volunteers needed for medical support and organization, we want as many KP people involved as possible. Please send us a letter, e-mail or fax if you are interested. We will send you more details about the location and exact days of each of the thirty sports.

KP will also sponsor a Sports Medicine Symposium slated for August 7-8, preceding the Games. Let us know if you have an interest and sports medicine expertise to join the national and international speakers we already have commitments from.

This will be the largest sports event in the world in 1998 and we want our national organization to demonstrate a strong presence. Thank you for your interest and let us forward to your participation.

For additional information, please e-mail Reed Paulson at paulsonre@kpnw.org, Tom Janisse at janisseto@kpnw.org, or The Permanente Journal at permjournal@kpnw.org. Additionally, you may request information via fax at (503)813-3883.
Instructions for Authors

Send all manuscripts to:
Merry Parker, Managing Editor
The Permanente Journal
500 NE Multnomah St, Suite 100
Portland, OR 97232
(503) 813-2659

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 daily 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.)

Articles, editorials, letters to the editor, and other text material in the Journal represent the opinion of the authors and do not necessarily reflect the opinion of Kaiser Permanente.

Authors submitting a manuscript do so with the understanding that if it is accepted for publication, copyright of the article, including the right to reproduce the article in all forms and media, shall be assigned exclusively to the publisher. The publisher will grant any reasonable request by the author for permission to reproduce any of his/her contribution to the Journal.

Types of Papers

There is no length requirement, although concise, readable, and practical articles 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 Management
  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 clinicians 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, preferentially 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.

Manuscript Preparation and Processing

A 3 1/2” disk containing the article and one complete paper copy of the manuscript must be submitted, along with a photograph of the author(s) labeled with name and a 2-3 sentence author profile. (Please, no photos smaller than 2x3 or larger than 5x7.) If more than four authors, submit the authors’ profiles only—no photographs.
Manuscripts must be typewritten in a word-processing program (identify program and platform used), double-spaced, with margins of at least 1 inch. All parts of the manuscript must be included in a single file on the disk, and the disk file must match the printout. Tables and illustrations are typeset from hard copy and need not be included on the disk. The 3 1/2" disk must be labeled with the first author's name, an abbreviated article title, the file name, the disk format (e.g. Mac), and the word-processing software used (e.g. Microsoft Word 6.0).

The first page of the manuscript should contain the following information: 1) title of paper; 2) authors' names; 3) name(s) of Kaiser Permanente Division and medical office in which work was done; 4) name and address of author to whom communications regarding the manuscript should be directed; 5) telephone and fax number of the communicating author.

The second page of a Clinical Article is to contain an Abstract of 250 words or less with a conclusion. Non-clinical Articles need only include a brief summary preceding the article. Also list key words and terms, in alphabetical order, under which you believe the article should be indexed.

Begin the text on a new page. Define all abbreviations except those that have been approved by the International System of Units for length, mass, time, electric current, temperature, luminous intensity, and amount of substance. Provide a footnote or box at the beginning of the article to define abbreviations when great numbers of abbreviations are used. Do not create new abbreviations for drugs, procedures, or substrates. Use generic drug names. If a brand name is used, insert it in parentheses after the generic name.

**Preparing Illustrations and Tables**

Illustrations and tables are desirable, and highly encouraged, to expand the value of the article. Tables and illustrations must be cited in order in the text using Arabic numerals. Submit one complete set in glossy prints or high-quality laser prints. Do not staple, clip, or write heavily on the back. Paste a label on the back of each illustration indicating its number in order of appearance, author's name, and the top edge of the picture. Legends for illustrations should be typewritten, double-spaced, on a separate sheet, and included at the end of the manuscript. A legend must accompany each illustration.

Figures, especially charts, graphs, and line drawings, are generally reduced in size for publication. To maintain legibility, all numbers, letters, and symbols should be large enough originally so that when reduced they will remain at least 2 mm high.

Each table should be typed on a separate sheet and appropriately numbered. Abbreviations used in the table should be defined in the legend to the table; legends should be typed on the same sheets as the tables. Any figure, table, or long portions of text that have been previously published must be accompanied by a letter of permission to reprint, signed by the publisher, at the time of submittal. It is the responsibility of the author to obtain such permission.

**Legal and Ethical Considerations**

Avoid use of patient's names, initials, and health record numbers. A patient must not be recognizable in photographs or case descriptions unless written consent of the subject has been obtained.

**References**

References must be numbered with Arabic numerals and cited in the text in numeric order. The reference list at the end of the article must also be in numeric order (do not list references in alphabetical order). The list should be double-spaced, under the heading REFERENCES. Abbreviations for title of medical periodicals should conform to those used in the latest edition of Index Medicus.

**Examples.**

Journal article, one to four authors


Journal article, more than four authors


Journal article in press


(Note: A copy of the manuscript must be included.)

Complete book


Chapter of book


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Contributors are provided with galley proofs and are asked to proofread them for typesetting errors. Important changes in data are allowed, but authors are requested to not make excessive alterations. Galley proofs should be returned within 48 hours.

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- 3 1/2" disk labeled with author name, article title, file name, word count, disk format, and word-processing software used.
- Cover letter
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- Title page
- Author profile (2-3 sentences)
- Author photo (no smaller than 2x3, no larger than 5x7)
- Structured Abstract (limit: 250 words): include key words
- References (double-spaced on a separate sheet)
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