These are somber times for children in the world. Not only the recent shooting in Littleton, Colorado, and the war in Kosovo, but also the worldwide surges of human immunodeficiency virus and tuberculosis and all of the new pathogens emerging in infectious disease, are killing children and creating orphans and producing great challenges for us all. In these somber times, it is good to have friends and to have the support of healers, creative people, innovators, and people who are persistent in enlarging the vision of what is possible to make life better for children. It is good to be with members of the Ambulatory Pediatric Association (APA).

Perhaps not surprisingly to those of you familiar with my professional interests, this address covers holistic medicine. This is not anything new to this audience. Holistic medicine is really just good medicine. It means caring for the whole child in the context of that child’s values, their family’s beliefs, their family system, and their culture in the larger community, and considering a range of therapies based on the evidence of their benefits and cost.

This idea is not new; some people might say it started in the APA. Among APA leaders who have inspired me to pursue this area have been Dr Robert Haggerty who coined the term “the new morbidity,” Dr Morris Green who coined the term “contextual pediatrics,” and one of my many mentors, Abe Bergman, who taught me the importance of child advocacy in the political arena as part of holistic medicine. Many other leaders in the APA have also inspired me to consider conditions ranging from depression, addiction, injuries, and violence to literacy, looking at community services, health care financing and health services issues, environmental issues, and using new technologies.

MEDICINE AS CULTURE/CULTURAL CHANGES

Medicine is really just part of the larger culture. It is based on a set of shared beliefs and values, and, as with any other cultural practice, it has dominant groups and minority groups. Ambulatory pediatrics, which at times has seemed to be in the minority, now seems to be in a position of dominance. But there are other subcultures within the larger culture of medicine that merit consideration. First, let us consider some of the changes in our environment that have affected the changing cultural practice of medicine.

There are important changes over time in cultures, and obviously contact with other cultures influence a dominant one. The shrinking world and closer contact through the media, including the Internet, speed these changes. Many times culture is invisible to us until we step outside of it. One of the advantages of looking at complementary and alternative medical practices as part of holistic medicine is the opportunity it affords us to see ourselves more clearly.

The last 30 years have seen a remarkable number of social changes, perhaps more rapid than in any other period of history. Feminism for one. Just look at the changes in the number of women at these meetings over the last 30 or 40 years. The civil rights movement, the sexual revolution, environmentalism, the peace movement, the human rights movement, globalism and global communication, consumerism (elevating the power of consumers), the human potential movement and new age spirituality, and technological changes—these are some of the major factors changing the practice of medicine and changing the practices of parenting in today’s world.

Access to information is just one of those changes. Many patients have access to information about herbs and other remedies through not just some fringe group but through mainstream publications like *Time* magazine, as well as other major media sources, the evening news, and the Internet.

There have also been remarkable changes in morbidity and mortality in the United States over the last 50 to 100 years. Whereas previously infectious diseases accounted for the majority of morbidity and mortality in children, Table 1 shows the growing and alarming increase in injuries, homicide, and suicide in children and adolescents. These changes in morbidity and mortality should inform...
our approach to intervention and to research, education, and advocacy.

There have also been frightening changes in the way medicine is practiced since the time my grandfather began practicing in 1910, when most medical care was provided in the home. Hospital care later came to dominate the scene, and the last several years have seen a change toward the clinic and now back to home again with access to care via the Internet and telephone for many families, as well as home visiting programs.

Changes have also taken place in the way care is paid for and in the providers of care, starting and continuing primarily with the family. Family members are still primary care providers; clinicians are there to help them, in the context of growing provision of care in the community and the emergence of complementary and alternative medical providers.

Approaches to the evidence for care provided has also changed over the last 30 years. We used to rely on tradition—what did our mentors say, what did our chief resident say, who are the authorities in the field? Now, more and more, we rely on scientific evidence and examine cost benefit analyses.

We have also seen growing specialization, regionalization, and movement toward primary care, quality assessment, ethics, outcomes, and an important emphasis on cultural competency, along with enormous changes in technology and some very exciting changes in genetics.

The last 30 years have seen a move in primary care pediatrics toward multidisciplinary care. These are just a few of the licensed therapists who participate in the mainstream medical culture in hospitals and clinics: physicians, both generalists and specialists; administrators; researchers and teachers; oral health specialists; various levels and types of nursing specialists; pharmacists; nutritionists; physical and occupational therapists; various medical technologists; speech, hearing, and language therapists; and those addressing social, psychological, and spiritual concerns. Care has become incredibly complex in mainstream medical institutions. But that is just the beginning of the story.

There are new opportunities to collaborate with, learn from, study with, and educate a variety of other practitioners who are available in our communities to provide care to children: massage therapists, naturopathic doctors, chiropractic doctors, acupuncturists, physicians and naturopaths who do homeopathy, nurses and physicians who do therapeutic touch or other kinds of healing practices. I would like to focus on just one of those, chiropractors.

The graph (Fig 1) from the work of Cooper indicates the growth in the number of alternative providers. The alternative providers experiencing the most growth are chiropractors. In 1998 there were slightly >50 000 chiropractors in the United States. In the next 10 years, that number is expected to double and triple by the year 2015. The number of acupuncturists is also growing very rapidly, although not so dramatically as chiropractors; the number of naturopaths is also increasing with the opening of the fourth school for naturopathic medicine. These numbers represent a far more dramatic increase in growth than the increase in growth in physicians and particularly pediatricians.

THE EXAMPLE OF CHIROPRACTIC

Although chiropractors are the most numerous of the so-called alternative practitioners, it is hard to consider chiropractors alternative anymore, with licensed chiropractors in all 50 states. One third of adults with low back pain seek care from chiropractors; in 1998, approximately $4 billion were spent on chiropractic care in the United States. Nearly 1

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### Table 1. Leading Causes of Death for Children and Adolescents in the United States

<table>
<thead>
<tr>
<th>Rank</th>
<th>0 to 1 Years Old</th>
<th>1 to 4 Years Old</th>
<th>5 to 9 Years Old</th>
<th>10 to 14 Years Old</th>
<th>15 to 19 Years Old</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Congenital anomalies</td>
<td>Unintentional injury</td>
<td>Unintentional injury</td>
<td>Unintentional injury</td>
<td>Unintentional injury</td>
</tr>
<tr>
<td>2</td>
<td>Prematurity/low birth weight</td>
<td>Congenital anomalies</td>
<td>Cancer</td>
<td>Cancer</td>
<td>Homicide</td>
</tr>
<tr>
<td>3</td>
<td>Sudden infant death syndrome</td>
<td>Cancer</td>
<td>Congenital anomalies</td>
<td>Suicide</td>
<td>Suicide</td>
</tr>
<tr>
<td>4</td>
<td>Respiratory distress syndrome</td>
<td>Homicide</td>
<td>Congenital anomalies</td>
<td>Homicide</td>
<td>Cancer</td>
</tr>
<tr>
<td>5</td>
<td>Birth complications</td>
<td>Heart disease</td>
<td>Heart disease</td>
<td>Congenital anomalies</td>
<td>Heart disease</td>
</tr>
</tbody>
</table>

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![Fig 1](http://pediatrics.aappublications.org/) Number of professional complementary and alternative medical providers workforce projections.
billion dollars were spent in 1998 on chiropractic care for children, and about half of that care was paid for out-of-pocket. Medicare and most private insurance plans reimburse for some chiropractic services; however, no major teaching hospitals, at least pediatric hospitals, currently credential chiropractors for inpatient services. We are likely to see changes in that policy as the number of chiropractors and the demand for their services grow.

Another provider on the horizon always makes medical practitioners feel a bit threatened, and I think that is particularly so with chiropractors. In a survey we did in the Boston area (which is being presented at this year’s meeting), two-thirds of chiropractors reported that they had had some pediatric training and 79% said they used special techniques when treating children. However, there were less than one-third, 30%, actively recommended immunizations to children in their practice. And faced with a febrile 2-week-old, 72% would refer the child to a physician, 10% said they would take more history, and 18% said they would treat the child themselves. Somewhat disconcerting, those who treated more children were more likely to treat a febrile neonate themselves than to refer the child to a pediatrician. About 70% of chiropractors recommended herbal remedies and food supplements as part of their routine practice, and many of these chiropractors dispense herbs and nutritional supplements in their practices.

The initial analysis of these data worried me. I continue to be very open to all kinds of practitioners who care for children, but I was really worried that chiropractors were not recommending immunizations to children and did not have the fund of knowledge and the clinical judgment to refer these children consistently to pediatricians.

So what should general pediatrics do about this? Our initial tendency may be to say that chiropractors should not take care of children and they should stick to treating adults with low back pain. That strategy is too late. Chiropractors have for the last 10 years increasingly marketed their services to children and families. Many call their practices family chiropractic, and they care for substantial numbers of children. In most pediatric surveys, chiropractic is the number one therapy or alternative therapist seen by children.

This growing presence leads me to make a couple of radical suggestions. First, we should begin to work with chiropractors and to talk with them about the things that we know and have learned about child health supervision. The majority of chiropractors in the United States belong to the American Chiropractic Association, and they do primarily focus on low back pain. Their treatment of children focuses on well-child care and health promotion. It will help us to share with chiropractors what we have learned about what does work: about safety seats, immunizations, hot water temperature, and poison control centers (as examples). The other key item is letting them know the real truth about immunizations and how helpful they are.

Second, chiropractors should be licensed to provide immunizations. Currently, chiropractors have no financial incentive to deliver immunizations. If children visit chiropractors for primary care, they are missing an opportunity to receive immunizations. So if we are really concerned about improving access for kids to immunizations rather than protecting pediatric turf, one possible consideration would be to allow and encourage chiropractors to deliver immunizations.

INCREASED ACCESS TO SELF CARE THROUGH TELEMEDICINE

Teleconsultation trends in the United States indicate another huge change in the practice of medicine with 0 consultations in 1993 and almost 90 000 in 1998. Telemedicine has become a remarkable opportunity for us to consult with each other and with our patients.

CHANGE: RESISTANCE AND OPPORTUNITIES

Change always engenders resistance. Many will sing anthems to the good old days and how much better things were in the days of house calls in horses and buggies, or of fee-for-service with patients coming into the clinic. Threats also raise tremendous concern about the ability to continue to do what we do and have grown comfortable doing. Some degree of bargaining may occur before reorganizing the changes that have already occurred.

All this change and uncertainty provides opportunity to return to our roots in research and education. One opportunity that complementary and alternative medicine offers is to think broadly about outcomes, not only for the patient and the family but also the impact of various interventions and approaches on the community and on providers.

Are dietary supplements like herbs really effective, particularly things like St John’s Wort for depression, a very serious condition? Does it work? How well does it work compared with medications? How safe are these things, now that pediatricians are familiar with this particular herbal product?

I hope that you counsel your patients about one herbal product every day (cigarettes). This product is 100% tobacco; there are no additives—a completely pure and natural product. Physicians in the 1950s used to recommend the menthol varieties to treat bronchitis and sore throat and other respiratory ailments. Tobacco had been used for thousands of years in both religious ceremonies and other settings, including medicine. Only in the last 40 to 50 years have we become aware and convinced of the hazards of this herbal remedy. This history informs us in our caution about other herbal products and the need to evaluate carefully their safety in the pediatric setting in particular.

Baby gripe mixture is a dill mixture that is common in British colonies, Great Britain, and Canada as well. Dill seed has been used to calm upset stomachs and treat infant colic for a long time. Its use raises some questions: What is the impact of cautioning parents or talking with patients on their...
sense of culture and family connectedness and so forth?

Physicians are very used to talking about a variety of dietary supplements, whether it is regular vitamins, iron supplementation for anemia, or calcium to prevent osteoporosis. Pediatricians have been responsive to changes and data. We used not to think very much about folate, and now it is almost routine in pediatric practices to encourage all women of childbearing age to take folate supplements.

**Lifestyle**

It is clear from randomized trials that intensive lifestyle changes can reverse serious coronary heart disease in adults. But what about pediatrics? What are we doing to help children? We need to help them to eat a heart-healthy diet from an early age, so they do not need to engage in radical changes in lifestyle later, when it is much more difficult. Growth in the intake of soda and decreased milk (a major source of protein and calcium) intake, represent another major dietary change. These important changes in lifestyle affect the entire society.

Pediatricians have an important role in understanding this and affecting behavior change early on, starting with the newborn period and promoting the most healthy beverage of all, breast milk, and promoting a healthy diet including fruits and vegetables. Although we encourage these behaviors, we need to be aware of possible risks with any vegetables. We need to think very much about folate, and now it is almost routine in pediatric practices to encourage all women of childbearing age to take folate supplements.

**Pediatricians** have an important role in understanding this and affecting behavior change early on, starting with the newborn period and promoting the most healthy beverage of all, breast milk, and promoting a healthy diet including fruits and vegetables. Although we encourage these behaviors, we need to be aware of possible risks with any suggestion we make, eg, outbreaks of *Escherichia coli* from unpasteurized apple juice. So we need to ensure that our food supply is safe, and it may not be too long before we talk about gardening techniques and people growing their own fruits and vegetables as part of comprehensive pediatric care.

Exercise is particularly important, and we need to apply our knowledge of behavior change to help learn how to get kids into the swimming pool and the playground and away from the television. For the home environment, pediatricians have been in the forefront in the medical field in promoting literacy within the family. When people think about environmental therapies and holistic medicine, exercise is the first thing that comes to mind. Sound therapy, nice aroma therapies, and high-tech environmental medicine are all kind of interesting and cool, but the major lesson and opportunity for us has to do with other aspects of the larger environment.

Just because lead poisoning is on the wane in the United States does not mean that children no longer face substantial risks from the physical environment, from toxic waste sites, medical incinerator sites, air pollution, or water supply. But perhaps an even greater threat is our social environment. Our society focuses on violence, and pediatricians have a vital role in intervening in societal forces, reporting the impact of the availability of guns and the portrayal of violence in the media.

Massage feels wonderful, and there is a growing body of evidence that proves that it is helpful to children with a variety of conditions. More research is needed to look at the cost effectiveness of massage as well as other therapies in children with all of these different conditions, particularly the effectiveness of teaching parents to provide massage to their children. What impact does it have on the child and on parent-child interaction, a sense of security, and perhaps social outcomes like a tendency toward violence?

Some therapies, like acupuncture, seem mysterious and distant from our usual practices, but they help us to look at our own assumptions about why things work the way they do. We can learn something about our own assumptions about the world by considering Eastern concepts of energy flow, balance and harmony; contrast, for example, the Eastern emphasis on restoring harmony with our Western models of conflict/conquer–based medicine. They restore harmony; we kill the invading pathogen.

The last kind of therapy I’d like to discuss is perhaps the most important: spiritual beliefs and the power of prayer. Nearly 90% of Americans believe in the power of prayer to effect healing in themselves and in children. Many surveys have shown that families of patients want to talk to their physicians about these issues.

Whenever we give a family a diagnosis of a serious or life-threatening disease or congenital malformation in their child, that family faces a spiritual as well as a medical crisis. Clinicians need to step into the breach and to be open to discuss spiritual issues with families because this is really where their hearts are, affecting their whole lives and their community, their sense of their place in the world.

So far, I have focused mainly on the “yang” side of medicine. In Chinese medicine, the yang forces are those that involve doing, going out, affecting things in the world; the technician and the techniques that we use whether it is time, touch, talk or various other therapies. We have a great deal of experience in evaluating, implementing, and improving these yang aspects of our care.

The challenge for the next century and perhaps the next millennium is looking at the “yin” side of medicine. Looking at the yin means looking at ourselves, the quality of our presence, at who we are as healers, at being present as a witness to listen and understand and model healthy lifestyles and healing behaviors.

For too long, training programs and lifestyles have glamorized the heroes in medicine, where we do not need sleep, our families make sacrifices, we do not eat right, and we survive on caffeine. We need to change the culture of medicine to reflect healthy lifestyles and balance. Remember what healers really do. We focus on our underlying intent that all of us in medicine started with, an underlying compassion and desire to be helpful. We need to focus on:

* being present with patients and remembering our intent on being peaceful, whole, and balanced ourselves;

**SUPPLEMENT**

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maintaining compassion and focusing on patients’ ability to heal, our belief in patients and families in our cultures to move toward wholeness and wellness; and
• to do our treatment, to do what we need to do, and then detach and allow things to proceed on their own path and return to that place of wholeness and peace within ourselves.

There is a great diversity of things that need studying, and fortunately this organization represents a tremendous diversity of interest, talents, and abilities. We need every single one of you to come together to explore all of these possibilities and create a future for our children that is healthy, harmonious, and balanced with one another and with the world. I am grateful for the opportunity to meet these incredible challenges together with you.

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The online version of this article, along with updated information and services, is located on the World Wide Web at:
http://pediatrics.aappublications.org/content/105/Supplement_2/214