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TOWARDS a WHOLISTIC MEDICAL MODEL

**Thoughts on Creativity, Health, Peace,
Spirituality, Wisdom and Well-being**

by

Robert M. Schmidt, MD, MPH, PhD, FACP
Professor of Medicine, Biomedical Laboratory Science, Hematology and
Preventive Medicine
Director and Chief Executive Officer
Center for Preventive Medicine and Health Research
Healthwatch International and Health Watch Programs
California Pacific Medical Center/UCSF/Stanford
San Francisco, California USA

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ABSTRACT

Advances in life long health into the third millennium are summarized, including the rapid development of ambulatory primary health care by medical providers throughout the United States, advances in research on health and aging to prevent and/or delay chronic diseases and improve effective function, integration of empirical findings from societal, futuristic and global perspectives, outcomes measurement and effectiveness of both conventional and alternative medical interventions, barriers to utilization of ambulatory care, especially by those most in need, and the role of health care reform efforts to address these issues of prevention-based health care services for all citizens of the world. Thus, the emphasis is on **life long health** rather than disease (**gerontology, not geriatrics**), based on individual health assessment integrating the best of **Conventional and Complementary/Alternative Medicine**. A **Global Holistic Health Model** emerges. This approach provides a base to build transition from productive individual aging to global, productive societal aging.

Health status assessment performed periodically during the entire human life span can provide person-specific data upon which to base rational, cost-effective, prevention-oriented interventions. Increasing emphasis on consumer/patient centered health care with physicians and other health care providers serving as partners in preventing disease and maintaining a long, productive life span have been embraced by many in the current global health care reform movement.

Results of the second National Institutes of Health (NIH) Office of Alternative Medicine Methodology Conference are summarized. Conference participants examined appropriate research methods for complementary and alternative medicine practices, defined quality in clinical trials, emphasized cross-cultural/system patient classifications, established standards

for interventions, discussed the role of placebo effects, and developed practice guidelines, outcomes measures and international research networks for qualitative and quantitative research.

Enough is known about extending the healthy life span to begin exploring the newly emerging paradigm of a patient/consumer<-->physician/provider<-->partnership based on an egalitarian, interdisciplinary health care system embracing biomedical, physiological, psychosocial, spiritual and health behavioral parameters.

We shall discuss currently emerging systems which provide convergence of existing, competing health care/medical interventions, thoughts on creativity, health, peace, spirituality, wisdom and well-being, measuring quality, outcomes and care, and the roles of consumers and healers.

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For human beings, health transcends biological fitness. It is primarily a measure of each person's ability to do what he wants to do and become what he wants to become. Good health implies an individual's success in functioning within his particular set of values, and as such it is extremely relative.

----Rene Dubos, PhD

Health, like happiness, cannot be defined in exact measurable terms because its presence is so largely a matter of subjective judgment.

----Walsh McDermott, MD

Most individuals do not worry about their health until they lose it.

----John H. Knowles, MD

When we try to pick out anything by itself, we find it hitched to everything else in the Universe.

----John Muir

Medical schools should be educating futurists--physicians who view their patients within the context of society.

----Donald B. Louria, MD

ABSTRACT

Advances in life long health into the third millennium are summarized, including the rapid development of ambulatory primary health care by medical providers throughout the United States, advances in research on health and aging to prevent and/or delay chronic diseases and improve effective function, integration of empirical findings from individual, societal, futuristic and global perspectives, outcomes measurement and effectiveness of both conventional and alternative medical interventions, the development of ambulatory preventive gerontology, and the role of health care reform efforts to address these issues of prevention-based health care services for all citizens of the world. Thus, the emphasis is on **life long health** rather than disease (**gerontology, not geriatrics**), based on individual health assessment integrating the best of **Conventional and Complementary/Alternative Medicine**. A **Global Holistic Health Model** emerges. This approach provides a base to build transition from productive individual aging to global, productive societal aging.

Health status assessment performed periodically during the entire human life span can provide person-specific data upon which to base rational, cost-effective, prevention-oriented interventions. Increasing emphasis on consumer/patient centered health care with physicians and other health care providers serving as partners in preventing disease and maintaining a long, productive life span have been embraced by many in the current global health care reform movement.

Results of the second National Institutes of Health (NIH) Office of Alternative Medicine Methodology Conference, held 26 through 28 April 1995, are summarized. Conference participants examined research methods appropriate for complementary and alternative medicine practices, defined quality in clinical trials, emphasized cross-cultural/system patient classifications, established standards for interventions,

discussed the role of placebo effects, and developed practice guidelines, outcomes measures and international research networks for qualitative and quantitative research.

Sufficient knowledge exists about extending the healthy life span to implement the emerging paradigm of a patient/consumer \leftrightarrow physician/provider \leftrightarrow partnership based on an egalitarian, interdisciplinary health care system embracing biomedical, physiological, psychosocial, spiritual and health behavioral parameters.

We shall discuss currently emerging systems which provide convergence of existing, competing health care/medical interventions, thoughts on creativity, health, peace, spirituality, wisdom and well-being, measuring quality, outcomes and care, and the roles of consumers and healers.

Global Implications of the Epidemiology of Aging

Robert N. Butler recently spoke at a conference on longevity where he emphasized that although the increasing longevity of people in the industrialized world has been termed a revolution, to meet the challenges it poses will require another revolution, a drastic change in social policy (Marwick, 1995). Largely in this century residents of the United States gained in excess of 25 years of life expectancy at birth; only 40 years were gained in the past two centuries, nearly equal to what had been obtained during the preceding 5000 years of human history. Most epidemiologists attribute recent gains in longevity to reduction in infectious diseases and improvements in their treatment, along with improved public health measures (clean water, sanitation, immunizations), better nutrition, and other environmental factors, as the major contributors to extending life.

Most of the gain in expected life span "old old age" has occurred in persons born since 1940, when only 7% of Americans had a chance at birth of living to the age of 90. For Americans born in 1980, 24% had a chance at birth of living to 90 years of age. However, it was pointed out at the conference that the most rapidly growing age group in the United States is centenarians. In 1950, there were 4475 persons 100 years of age or older. In 1990, the number was 54,000. Other countries report similar figures, including France, where the number of 100+ residents increased from 200 in 1954 to 3000 in 1990, and a much-publicized woman who turned 120 in 1994. Gender differences in aging have also been well-reported in the United States. During the past two decades, on average, women have outlived men by approximately seven years, although a trend of narrowing this gap has begun, perhaps secondary to numerous psychosocial and health behavioral changes observed in the U.S. and most developed countries of the world.

A major acceleration in numbers of elderly in the United States will occur when our 75 million "baby boomers" born between 1946 and 1964 start turning 65 years of age in 2011. By 2020 to 2030 they will comprise most of the 20% of Americans over age 65. Other countries with 20 percent of population ages 60 and over by 2020 include Canada, Western and Eastern European nations, Israel, Japan, South Korea, Taiwan, Hong Kong, Singapore, Australia, and New Zealand. Perhaps more significantly, if countries attaining 12.5 to 20 percent of population ages 60+ are added to this list of rapidly aging nations, the former Soviet Union, China, Thailand, North Korea, Sri Lanka, Greenland, Albania, Cuba, Chile, Argentina, Uruguay, Colombia, Panama, and The Arab Emigrates are now included.

Concomitant with these demographic trends are alarming economic predictions, also reviewed at the conference summarized by Marwick (1995). Although many

studies attribute rapidly rising health care costs to aging of the globe, conference attendees were reminded that this is simplistic. For example, the United States currently expends 14% of its gross domestic product on health care, yet it is among the lowest of 12 industrialized nations in its percentage of elderly people (12.6%). In comparison, Sweden, where 17.8% of the population is already older than 65 years, only 7.5% of the gross domestic product is spent on health care. Nor are health care expenditures necessarily rising in countries that have increases in their percentage of elderly persons. In Japan, the elderly population increased by more than 30% from 1980 to 1990, yet only a 1.6% increase in the proportion of its gross domestic product went to health care during the same period. In the United States, where the percentage of those age 65 and older increased about 10% during the same period--approximately one third the increase in Japan--health care spending went up by 31.5% (Binstock, 1993). Thus, one cannot necessarily equate health care costs with the percentage of older persons in a population.

These demographic observations and consequent concerns for an aging population in the developed countries of Europe and North America, and in Japan, Australia and New Zealand, and the predicted trajectory of aging in most of the developing countries of the world by 2020, emphasize the need for innovation in medical and health care into the next millennium. Many biomedical and clinical gerontologists have emphasized the importance of initiating healthy habits early in life rather than waiting until a major medical event occurs or the ravages of chronic diseases accumulate through the life span before implementing medical interventions (Gunby, 1995).

A major theme of this paper is the enhancement of a healthy life span by promoting effective function. This involves disease prevention and health promotion

techniques at both individual and societal levels (see, for example, Rakowski and Schmidt, 1994). Further, the integration of conventional and complementary/alternative health methods will be considered as an holistic or total approach to concurrently meet demands of a rapidly aging world and mitigate limited resources available for health services.

Preventive Health Care in the United States

The shift to a prevention-oriented system of health care from the long-accepted medical model is underway throughout the world. Preventive health care has been a major goal of United States health policy since publication of Healthy People: The Surgeon General's Report on Health Promotion and Disease Prevention in 1979 (U.S. Department of Health, Education and Welfare). Release of the 1989 "Report of the U.S. Preventive Services Task Force" provided rigorous assessment of the effectiveness of 169 interventions to prevent 60 different illnesses and conditions in primary ambulatory health care (U.S. Preventive Services Task Force, 1989). The Task Force assessed primary and secondary preventive measures useful in the clinical setting, with emphasis on screening test availability, counseling interventions, and immunizations and chemoprophylaxis. Community-based health promotion efforts were not assessed in this report. (To my knowledge, no comparable rigorous assessment with significant clinical outcomes analyses beyond single or limited health risk behavior modification has been published.)

The role of preventive medicine in the health care system of the United States was further enhanced with the release of Healthy People 2000: National Health Promotion and Disease Prevention Objectives in 1990 (U.S. Department of Health

and Human Services). This document lists three broad goals to be reached by the Year 2000:

- (1) Increase the span of healthy life for Americans
- (2) Reduce health disparities among Americans
- (3) Achieve access to preventive services for all Americans.

The concept of **healthy aging**, the core of a preventive health care system, derives from the definition of three levels of prevention which vary dependent on whether a clinical individual or population approach is used. **Primary prevention** involves those activities undertaken to prevent the occurrence of disease or illness. This requires a base-line assessment for clinical primary prevention and detection and elimination of risk factors that may lead to disease development in both *clinical* (personal health) and *population* (public health) primary prevention programs. **Secondary prevention** involves the detection of disease while it is asymptomatic (before symptoms appear) for that particular disease or is in an early phase, followed by appropriate intervention. **Tertiary prevention** involves activities undertaken to prevent the progression of symptomatic disease in individuals already diagnosed with a disease or illness and to facilitate rehabilitation. Clinical medicine has been based on tertiary prevention, although some insurance and reimbursement programs do include secondary prevention clinical services. Few citizens of the world receive comprehensive primary prevention services, either through personal or public health sources.

PREVENTIVE GERIATRICS AND PREVENTIVE GERONTOLOGY

New "specialties" are emerging in response to our aging society facing momentous quality of life issues. Preventive geriatrics and gerontology attempt to enhance autonomy and functional independence with advancing age coupled with evolving

concepts of normal/healthy aging and the "compression of morbidity" towards the end of a "natural life span" (Fries, Green, Levine; 1989). Bierman and Hazzard (1985) define the concept of preventive gerontology as the primary prevention of chronic diseases associated with aging, involving preventive interventions during middle or young age. Mayer-Oakes, Stuck and Rubenstein (1993) define **preventive geriatrics** as primary prevention or health promotion and secondary and tertiary prevention and comprehensive geriatric assessment in older adults. Major barriers for implementation of preventive geriatrics include a paucity of randomized controlled studies demonstrating efficacy for specific preventive interventions for the elderly (Fried, 1985). More recently, a number of well-designed outcome studies have demonstrated that it is never too late to begin health behavior modification, especially for physical activity, nutrition and stress reduction, in older individuals living in various settings (see for example, Schmidt, Wu, Okun, et al., 1990; Muir Gray, 1992; Mayer-Oakes, Stuck, Rubenstein, 1993).

The American College of Preventive Medicine, among other groups involved in the evolution of the United States shift toward healthy aging, urges policy-makers to address disease prevention and health promotion in a comprehensive fashion (American College of Preventive Medicine, 1993). This requires support for both **Public Health** and **Personal Health** services. Public health services include: assessment of the health status of communities; health education, monitoring and action to assure prevention; and outreach, screening and linkage to ensure that individuals needing health care are identified and receive appropriate services. Clinical preventive services provided to all individuals include three components: screening, counseling and immunization. Successful outcomes from either approach increasingly depend on the enhancement of the self-care movement which requires individualized comprehensive health counseling.

Health Watch Studies of Health Status and Behavioral Interventions

Outcomes of three studies of health status assessment to demonstrate the ability to implement gender- and age-specific health promotion and disease prevention programs in the primary care practice are reviewed. Emphasis is on the application of person-specific, computer-based Health Trend Charts and a Health Practice Index for seven health status and behavioral areas by a primary care physician in partnership with patients (Harnly and Williams, 1987; Regan et al., 1989; Schmidt, 1988; Schmidt and Wu, 1990; Schmidt, Wu, Williams, 1990; Wu, Kenen, Schmidt, 1989).

HEALTH WATCH, a longitudinal prospective study of healthy aging, was founded by Dr. George Z. Williams in 1970. This study was originally designed to characterize a healthy population of approximately 2200 men and women in the San Francisco Bay Area, 20 to 80 years old at entry. With the concurrent development of clinical preventive medicine, health promotion, self-care and self-efficacy programs, HEALTH WATCH was modified for use in primary care in addition to healthy aging research. Physicians and other health care providers use person-specific data to monitor health and to identify interventions, while researchers continue to assess aging effects and determinants of healthy aging. During the past 25 years we have developed a health monitoring system which can evaluate outcomes of healthy aging interventions, effectiveness of health promotion programs and the impact of primary prevention practices.

The HEALTH WATCH of San Francisco Study includes: (1) a **database** of clinical laboratory tests, health status and health behavioral information for over 2000 healthy men and women with an age range of 18 to 94, (2) a wide spectrum of

measures, including biochemical (n=17), hematological (n=8), physiological (n=6) and health status and health behavioral parameters (n=1334, covering 7 areas), (3) a **person-specific health assessment** which measures health status and behaviors in seven areas: medical events, general well-being, psychological well-being, physical activity, nutrition, alcohol use and tobacco use, (4) an **evaluation system** capable of detecting small yet significant changes in clinical tests, health status and health behaviors in participants over time, (5) a user friendly Macintosh **computer system** consisting of management, data analysis and patient feedback, (6) a monitoring system to detect early trends of unhealthy behavioral and clinical laboratory patterns prior to signs and symptoms of disease, using **Health Trend Charts** and a **Health Practice Index** which summarize individual longitudinal data on an annual basis, (7) the active practice of primary preventive medicine which emphasizes **self-efficacy** and a **patient-physician partnership** paradigm, (8) effective **healthy aging interventions** using person-specific health assessment, active physician-based healthy aging counseling, annual summary reports, advice letters and **HEALTH WATCH Behavior Change Prescriptions**.

The HEALTH WATCH Study was modified to assess health determinants of an oldest old cohort in Kauai, Hawaii in 1988, and to demonstrate clinical outcomes in a pilot intervention study among patients age 66 to 89 residing in a retirement community in the Sun Cities, Arizona in 1990 (Schmidt, 1990; Schmidt, Wu, Okun et al., 1990).

Outcomes of the HEALTH WATCH studies have been presented and/or published in national and international clinical and scientific meetings/journals. Continuing analyses of the HEALTH WATCH database are in progress. These data provide evidence for gender- and age- differences in biochemical, physiological,

hematological and health behavior parameters; impacts of health behaviors on aging (e.g. nutrition, physical activity, stress, spirituality); and effects of life events on aging (e.g. stress, menopause, retirement, autonomy.)

The HEALTH WATCH of San Francisco longitudinal study of healthy aging, the HEALTH WATCH of Kauai analysis of health determinants of the healthiest oldest old residents of the longest-lived island in the longest-lived state, and the HEALTH WATCH of Arizona Healthy Aging Intervention Study, provide strong evidence that a person-specific health assessment system to evaluate outcomes of healthy aging interventions, health promotion and preventive medicine can be implemented by a primary care physician with patients of any chronological age and baseline health status. Further, these studies demonstrate that (1) there are significant gender and age differences in physiological aging which must be considered by the primary care physician and other health care providers, and (2) it is never too late to alter unhealthy lifestyle habits and begin healthy/productive aging.

HEALTH WATCH provides a paradigm of individualized health monitoring and treatment for patients throughout the life span based on routine clinical tests, health behavior assessment, and healthy aging interventions performed by primary care physicians in the ambulatory primary care setting (Schmidt, 1993a,b; Williams and Schmidt, 1989; Mahler et al., 1993).

Healthy Aging

Healthy aging, termed "successful aging" by Rowe and Kahn (1987), and "productive aging" by Butler (1985), is most readily defined with reference to a continuum of:

accelerated/less healthy aging<->usual/normal aging<->successful/productive/healthy aging (Schmidt, 1993a, 1994a). Healthy aging, then, refers to individuals who demonstrate few or minimal physiological decrements that are due to aging alone and for whom there is less need for further modifications in personal habits or environments. Usual/normal aging involves significant physiological losses along with substantial reduced reserve capacity. A broad definition of healthy aging, therefore, suggests minimal interruption of usual function, although minimal signs and symptoms of chronic disease may be present. This contrasts with the World Health Organization definition of health, "a state of complete physical, mental and social well-being and not merely the absence of disease and infirmity."

Global Application to Clinical/Public Health Practice

Attempts to enhance autonomy and functional independence with advancing age coupled with evolving concepts of normal/healthy aging and the "compression of morbidity" towards the end of a "natural life span" have produced new areas of aging research, education and practice (Schmidt, 1994a,b,c). These efforts require coordination and a global approach across discipline lines, perhaps achieved by the World Health Organization and other agencies (e.g., the new International HIV/AIDS Agency coordinated by the United Nations).

Professional societies have already recognized the urgency of exploring interdisciplinary concepts of healthy aging (Schmidt, 1994a). The 1992 Biannual Meeting of the International Health Evaluation Association in Geneva (Williams, Collen, Schmidt, 1993a, b) and opening sessions of the American Association for the Advancement of Science Annual Meeting in February 1994 ("Increasing the Healthy Life Span: Advances in Health and Aging," Schmidt and Abrass, 1994) and accepted

for February 1996 in Baltimore ("Topics in Life Long Health: Beyond the Biomedical Model" Schmidt, 1996), the Prevention and Health Evaluation Informatics Working Group Fall annual meetings of the American Medical Informatics Association, and the International Health Evaluation/Japan Society of Multiphasic Health Testing and Services Conference on "Health Strategies in the 21st Century" held in Tokyo in May 1994 (Schmidt, 1994b) are typical of this rapidly evolving field.

Movement toward a health services system based on primary and, to a lesser degree, secondary prevention, depends upon active, meaningful interaction among health care professionals, including gerontologists and geriatricians, regardless of specialty or subspecialty training, and most importantly, a patient(client)/health care provider partnership based on trust and evidence of positive outcomes. Thus, the increasing fragmentation of gerontology can only delay implementation of successful health promotion and disease prevention programs to implement healthy aging. Colleagues, patients and clients must work together to achieve Year 2000 Health Goals in the United States and similar goals in other countries.

Successful outcomes from either personal or public health services interventions increasingly appear to depend on the enhancement of the self-care movement, the topic of the Fall 1993 quarterly edition of Generations edited by Robin Mockenhaupt. This volume brings together an interdisciplinary group of contributors who explore current approaches to self-care in older adults. The self-care movement requires individualized health assessment, comprehensive health counseling, appropriate interventions, and follow-up.

Increased efforts to fund comprehensive interdisciplinary research on preventive interventions, health promotion and self-care, with integration into global health

care delivery systems, are urgently needed. A *person-specific* health assessment system to evaluate outcomes of healthy aging, health promotion and preventive interventions can be implemented by physicians and other health care providers in patients of any chronological age and baseline health status. We have also learned much from population-based studies that have identified potential interventions to extend the healthy life span.

Major deterrents to implementation of routine age-specific health assessment in the primary care practice, especially in the United States, include the continuing "disease-of-the-month" or more worrisome, "**health-of-the-month**" approach to reimbursement for medical/health services, lack of universal health coverage, rapid escalation in health care costs discouraging phasing in of primary prevention services, inadequate training of medical students, residents and fellows in prevention-based health care, use of out-dated health risk assessment instruments rather than health status measures emphasizing quality of life, and continuing migration of recent medical school graduates to the higher paid specialties rather than to primary care.

Men and women in both developed and developing countries are living longer, although not always more productive, lives. Indeed, as we learn to live with chronic diseases, make several career changes, and recognize the importance of productive, quality of life domains, patient "self-efficacy" and evolution of a patient/physician partnership with emphasis on primary prevention is evolving without distinct third-party payment plans. Physiological age, rather than chronological age, is the important baseline for individuals to gauge their own (person-specific) health status.

The role of prevention in health care reform was recently summarized in a joint statement of 53 organizations concerned with public health: "PREVENTION should be a fundamental component of health care reform. A health care system that ensures health care for all persons cannot succeed in building a healthier America unless it addresses disease prevention and health promotion in a comprehensive fashion. This requires support for both PUBLIC HEALTH and PERSONAL HEALTH services according to the following principles." (American College of Preventive Medicine, 1993). A summary of these recommendations, with added emphasis on older adults, follows.

Public health services for disease prevention and health promotion must be universally available. These population-based services extend beyond the boundaries of any individual health provider or facility. They include:

- o **Assessment** of the health status of communities to identify the unique and most pressing health problems of each community, thus enabling rational, effective and efficient deployment of health resources through adequate planning and policy development.
- o **Health education** to provide individuals with knowledge and skills to maintain or improve their own health.
- o **Monitoring and action** to assure prevention of infectious and chronic diseases as well as the safety of air, water and food supplies.
- o **Outreach, screening and linkage** to ensure that individuals needing health care are identified and receive appropriate services. These are essential components of public health programs that reduce the tolls taken by such problems as vaccine-preventable diseases, tuberculosis, sexually transmitted diseases and chronic diseases.

Clinical preventive services must be provided to all individuals. Effective clinical preventive services promote health, reduce the risk of illness, injury and premature death and enable early detection and treatment of illness when it occurs. Preventive services provided to individuals of all ages include three components:

- o **Screening**, including history and risk assessment, physical examination and laboratory tests.
- o **Counseling**, to explain the relationship between risk factors and health and to assist patients in acquiring the knowledge, motivation and skills to adopt and maintain healthful behaviors.

Disease prevention and health promotion are the responsibility of all publicly or privately financed health insurance programs. All preventive services must be treated as insurable expenses.

Preventive services, regardless of age of recipients, and as defined in the Joint Statement, include three components: 1.) *screening* (history and risk assessment, physical examination, laboratory tests), 2.) *counseling* to explain the relationship between risk factors and health and to assist patients in acquiring the knowledge, motivation and skills to adopt and maintain healthful behaviors, and 3.) *immunization and chemoprophylaxis* (vaccination against infectious diseases and medication to prevent future diseases). The preventive services included in any minimum package of health benefits should have the following characteristics, especially important for older adults: 1.) they have been demonstrated by scientific criteria to be *clinically effective*, 2.) they are *tailored to age, gender and other individual risk factors, i.e., person-specific* (Schmidt, 1993a,b; 1994a), 3.) They are provided with a *frequency* determined by age, gender and other risk factors, 4.) They are *modified* as new scientific evidence concerning effectiveness becomes available.

Preventive services are provided optimally within the context of a *periodic health examination*. However, preventive services should be covered also when provided in the context of a visit undertaken for other purposes. This is important for several reasons. An illness visit may be the only opportunity to offer preventive services to persons whose access to care is limited by factors other than ability to pay. Certain services, such as pap smears, mammography and some screening procedures for high risk individuals, should be provided at a frequency that differs from the appropriate frequency for a periodic health examination. Some preventive services, particularly counseling, require repeated reinforcement over several clinical encounters.

Important areas not covered in the Joint Statement are details about methodology of health risk and health status assessments, recommended instruments to assess quality of life and outcomes of preventive interventions, and the role of various health care providers in providing preventive services. These issues increasingly involve all parties to delivery of health services, including patient/client/consumer, the many health professionals currently providing health services, professional and lay health/disease organizations, and, perhaps currently most important, state and federal government agencies responsible for health care services policy, implementation and funding.

Integration of Conventional and Complementary Medical Interventions

The broad domain of complementary (alternative) medicine encompasses all health systems, modalities, and practices that are not intrinsic to the dominant health system of a particular society of culture. Complementary medicine includes all such practices and ideas self-defined by their users as preventing or treating illness or promoting health and well-being. Boundaries within and between complementary

medicine and the dominant system are not always sharp or fixed. For most countries the dominant health system is biomedicine, at least in terms of the allocation of health care resources. Any therapy that is considered unorthodox or outside the domain of conventional medicine in several countries is considered pertinent to the complementary medicine field. Complementary medicine comprises a spectrum of delivery modes ranging from primarily self-help (e.g., botanicals, health food, meditation) to primarily provider-dependent (e.g., chiropractic, panchakarma, acupuncture). Thus, chiropractic is arguably integrated in the national health care system of Switzerland and the United States; Ayurveda, Unani and Siddha are integrated in the Indian health care system but not elsewhere (Kaptchuk, 1995).

In the United States, the shift to a prevention-oriented system of health care from the long-accepted allopathic medical model is under way. This has been largely due to the demand of patients/consumers rather than leadership by any of the major players in the vast medical/health services arena. Eisenberg and his colleagues at the Harvard Medical School recently reported results of their national survey to assess usage of "unconventional" medicine, including such therapies as acupuncture and chiropractic (1993). They limited their study to 16 commonly used interventions neither taught widely in U.S. medical schools nor generally available in U.S. hospitals, with emphasis on prevalence, costs, and patterns of use, for a national sample of adults 18 years of age or older in 1990. One in three respondents (34 percent) reported using at least one unconventional therapy in the past year, and a third of these saw providers for unconventional medical services (the other two-thirds performed self-care unconventional medical practices). The group using providers made an average of 19 visits during the preceding year, with an average charge per visit of \$27.60. The frequency of use of unconventional therapy varied

somewhat among socioeconomic groups, with the highest use reported by nonblack persons from 25 to 49 years of age who had relatively more education and higher incomes. The majority used unconventional therapy for chronic, as opposed to life-threatening, medical conditions. Among those who used unconventional therapy for serious medical conditions, the vast majority (83 percent) also sought treatment for the same condition for an allopathic medical doctor; however, 72 percent of the respondents who used unconventional therapy did not inform their medical doctor that they had done so. Extrapolation to the U.S. population suggest that in 1990 Americans made an estimated 425 million visits to providers of unconventional therapy. This number exceeds the number of visits to all U.S. primary care physicians (388 million). Expenditures associated with use of unconventional therapy in 1990 amounted to approximately \$13.7 billion, three quarters of which (\$10.3 billion) was paid out of pocket. This figure is comparable to the \$12.8 billion spent of out pocket annually for hospitalization in the United States.

Eisenberg and colleagues concluded that the frequency of unconventional therapy in the United States is far higher than previously reported. Medical doctors should ask about their patients' use of unconventional therapy whenever they obtain a medical history. Many of us would go a step further and interpret these findings as support for the integration of allopathic (conventional) and complementary (alternative, unconventional) medicine in the United States as the first step toward improving quality of life throughout the life span and as a mechanism to reduce spiralling health care costs and increase patient/consumer compliance.

The National Institutes of Health (NIH) has recognized the need to assess outcomes of medical interventions and published a number of guidelines for specific diseases. In April 1995, the Office of Alternative Medicine of the NIH convened a

Complementary and Alternative Medicine Research Methodology Conference. Some 78 Panel members from 10 countries and the World Health Organization were charged with making recommendations in eight areas. The recommendations are currently undergoing final review and will be published in late Fall 1995. Presented here are draft recommendations submitted by The Working Group on Outcomes Measurement and Research Networks co-chaired by Russell Jaffe and Robert M. Schmidt. These recommendations are especially germane to this paper.

The Working Group on Outcomes Measurement and Research Networks was responsible for two major areas of the Conference:

- (1) Develop standards for producing appropriate, patient-centered and comprehensive outcome measurements for comparative research of various complementary and alternative (CAM) systems, and
- (2) List, describe and provide examples of existing approaches and systems for the reliable and rapid acquisition of outcome data and the infrastructure and design to acquire and monitor that data in the clinical setting, with emphasis on cross cultural, cross population and cross system comparisons in the Primary and Ambulatory Care Practice. Time permitting, recommend practice research networks for preliminary, primary care and effectiveness research.

Existing instruments and systems which measure **clinically relevant outcomes** for conventional health assessment and medical interventions were reviewed by the Working Group. It was soon evident that most of these were developed to assess risk of disease and therapeutic outcomes for specific disease entities, rather than overall health of individual participants or assessment of intervention impact on individuals with multiple diseases. Additionally, cost-effectiveness was frequently emphasized at the expense of clinical utility (see, for example, Asch and Hershey,

1995). In an attempt to make recommendations for generic assessment of clinically effective outcomes, the Group defined our broad-based responsibilities outlined above to include a review of group member research in the area of health status assessment which includes rigorous generic, i.e., total health, measurement before and after interventions to modify individual health parameters.

Outcomes indices and health status assessment systems and instruments which meet the needs of individuals and providers of health care were reviewed. The Working Group recommends that outcomes used to assess alternative medicine interventions emphasize health-based quality of life rather than existing morbidity- and mortality-based and utilization of care measures. Further, we recommend that outcomes should be suitable for any health intervention, that is, for both conventional and alternative medicine.

The Group heard presentations from Group members actively involved in outcomes research. These included:

- (1) An overview of The Health Institute of the New England Medical Center Outcomes for Patient Satisfaction (formerly, the Rand studies),
- (2) A summary of Health Watch of San Francisco, Kauai and Arizona studies, with emphasis on the controlled, prospective Sun Cities Study,
- (3) The Nova Scotia Environmental Medicine Clinic Study.

A review of the world literature, including key papers of potentially useful outcomes, was covered during Group deliberations. For example, a summary of information about widely-used general health surveys was presented by Group members. Specific physiological, clinical chemistry, hematological and health habits and health behavioral assessments used to assess health, rather than individual disease outcomes, were summarized from Health Watch studies.

Recommendations presented to the full Panel and Conference audience on the last day reflect these deliberations.

A fully integrated health care system that combines clinically effective (Asch and Hershey, 1995) conventional and alternative/complementary interventions throughout the life span is long overdue throughout the world (Schmidt, 1995). This shift would not only expedite fulfillment of World Health Organization goals of total health for all citizens of the World but would also provide necessary funds and health research scientists and practitioners to adequately assess outcomes and medically effective interventions for both allopathic and alternative/complementary approaches to health care.*

CONCLUSIONS

How are we to cope with our rapidly aging world unless we embrace the concept of healthy/productive aging?

Person-specific health assessment systems, sensitive to gender and age as well as cultural, ethnic, environmental, geographic, and other variables, which transcend biological, clinical, psychosocial, spiritual, and the entire range of holistic health parameters, must be further developed to begin our move from a disease-oriented allopathic health care system in many developed countries to an integrated,

* The rapid acceptance of alternative medicine in the United States is illustrated by the appearance of three new peer-reviewed journals in 1995: *Alternative Health Practitioner*. The Journal of Complementary and Natural Care. Carolyn Chambers Clark, Editor. Springer Publishing Co, 536 Broadway, New York, NY, 10012-3955. (Triannual publication); *Alternative Therapies in Health and Medicine*. Larry Dossey, Executive Editor. Aliso Viejo, CA: InnoVision Communications, a division of the American Association of Critical Care Nurses. Telephone: (800) 899-1712. (Bimonthly publication); *The Journal of Alternative and Complementary Medicine*. Research on Paradigm, Practice and Policy. Marc S. Micozzi, Editor-in-Chief. Mary Ann Liebert, Inc., Publishers, 1651 Third Avenue, New York, NY 10128. (Quarterly publication).

prevention-oriented conventional and alternative/complementary system, similar to those being refined in the capitol cities of China.

Movement toward a health services system based on primary, and to a lesser degree secondary, prevention depends on active, meaningful interaction among health care professionals regardless of degree, specialty or subspecialty training,

It is time to break down artificial interprofessional barriers and develop innovative, interdisciplinary solutions to our health care crisis (Schmidt, 1994c; Seltzer, 1994).

An interdisciplinary team to assess health status through the life span, similar to geriatric assessment teams in the United Kingdom and the United States, could be a new approach funded by all payors. It is too late to perform such assessments at the time of terminal tertiary disease or during the 11.7 years of dysfunction extant at the end of a current life in the United States.

A global health care system based on preventive health services is a concept whose time has come. Increased efforts to fund comprehensive interdisciplinary research on preventive interventions, health promotion and self-care, with integration into global health care delivery systems, are urgently needed. A *person-specific* health assessment system to evaluate outcomes of healthy aging, health promotion and preventive interventions can be implemented by physicians and other health care providers in patients of any chronological age and baseline health status. We have also learned much from population-based studies that have identified potential interventions to extend the healthy life span.

The good news is that it is never too late to modify the major determinants of health: physical activity (productive activity and exercise), nutrition, well-being (managing stress, enhancing the immune system). Longitudinal studies of healthy men and women age 20 to 100+ suggest these determinants plus "extended family" and spirituality are more important than genetics. In fact, if individuals survive accidents and violent acts in the early to middle years, by age 70, genetics appears to play an increasingly minor, if any, role in aging.

Healthy aging research designed to identify and modify risk factors for loss of function and premature morbidity and mortality, and to identify mechanisms for enhancing function, competence and independence throughout the life span applicable to preventive health services was emphasized in this chapter.

Each individual should monitor personal health status with appropriate guidance from a primary health care provider. Taking responsibility for one's own health will promote healthy aging and postpone chronic problems, supporting a long, productive life. Personal physicians alone cannot effect this. The most powerful action for achieving and maintaining personal robust physical and mental functioning into old age is awareness of self-efficacy, an individual's judgment of their capability to execute given levels of performance and to exercise control over events (Bandura, 1986). Each person takes full responsibility for actions to improve and preserve good health with guidance from his or her physician. With the advent of the self-care movement concurrent with the availability of personal home computers, we believe that future primary care practitioners will emphasize self-health monitoring and management in the ambulatory primary care setting (Schmidt, 1989; Williams and Schmidt, 1989).

Measures of healthy aging evaluated in studies emphasizing **individual differences**, i.e., **physiological age** rather than chronological age can be applied to the major chronic diseases which decrease effective function, quality of life and potential life span. Risk factors which contribute to acute and chronic infectious diseases, especially emerging knowledge about immune function and host susceptibility (psychoneuroimmunology), can be identified in individuals, with active intervention provided.

Expensive tertiary preventive medicine can no longer be the basis of our health care system in a rapidly aging world. Health policy which places emphasis on primary preventive medicine must be implemented. Incentives to stay well, payment for annual health assessment programs, emphasis on individual trends of aging, awareness of gender and physiological age change points during the life span which provide opportunities for early intervention, and movement toward primary prevention of disease should be emphasized. Few other cost-effective mechanisms are ready for implementation in our high technology society where secondary and tertiary prevention prevail (Williams and Schmidt, 1989). Likewise, we must avoid "blaming the victim" when acute and chronic diseases require tertiary preventive interventions.

United States national health policy already mandates this approach. Just as all Americans should lobby for appropriate reform in the health care delivery system to implement existing YEAR 2000 health policy through sufficient funding for preventive health services, we must also collaborate with international colleagues to make these services available world-wide. It is a most exciting time to be working in the health care arena.

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