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Integrative Medicine and the Future of Healthcare Reform: Important Doors are Opening

In 2005, in a preface Dr. Bland wrote for the *Textbook of Functional Medicine*, he stated, “Health care is an enterprise focused on the alleviation of human suffering caused by disease and dysfunction. Disease has its start as a functional impairment (a *dysfunction*) that, left untreated, becomes a diagnosable disease that has a past, a present, and a future tied to the progressive loss of function and vitality.” Data for this preface was collected from a variety of sources and key statistics were included: 78% of all healthcare expenditures are now for the treatment of chronic diseases; and at a time when the United States spends twice as much per capita for health as any other country, it is 37th in the world in terms of health outcomes. REF #1-6

Reforming the United States healthcare system and implementing an effective approach to chronic disease has become a call to action in recent months. In February 2009, the Institute of Medicine (IOM) and the Bravewell Collaborative partnered to convene a summit that explored the science and practice of integrative medicine. The meeting reviewed the state of the science, assessed the potential and the priorities, and began to identify elements of an agenda to improve understanding, training, practice, and other actions that might help improve the prospects for integrative medicine’s contributions to better health and health care. REF #7

As an attendee of the recent IOM summit, Dr. Bland reflects on how far integrative medicine has come over the last 30 years of diligent work by its proponents. He discusses predictions made decades ago by author Lewis Thomas, and the transitions in medical thinking that are being witnessed today. REF #8-9

Also in February, the Senate Committee on Health, Education, Labor, and Pensions received verbal and written testimony on the future of healthcare reform from integrative medicine leaders. In response to this testimony and the IOM Summit, Senator Edward Kennedy, Committee Chair, issued written statement which included the following: “Genuine healthcare reform therefore requires a major transformation in our national mindset on how we care for ourselves and others. It must incorporate and encourage disease prevention activities and lifestyle changes that promote long-term health and well-being. The current incentives in our healthcare system that lead to over-treatment and mistreatment must be changed to promote high-quality, appropriate, and coordinated health care. The nation’s alarmingly high and growing rates of obesity and chronic disease today are a clear call to action. By preventing diseases before they start and adopting a broader approach to medicine, we will actually reduce costs in the long run, and we will extend and improve the quality of life as we do it. To achieve this

fundamental shift in our nation's healthcare mindset, it will be necessary to reform how medicine is practiced." REF #10

A Recent Publication on the Role of Genetic Variants

Dr. Bland discusses a 2009 study published in the *Journal of the American Dietetic Association* that aimed to address recent data suggesting that choline requirements may be altered by polymorphisms in the phosphatidylethanolamine *N*-methyltransferase gene. This was a controlled feeding study, and the results suggested to researchers that polymorphisms in genes relevant to choline metabolism modulate parameters of choline status when folate intake is restricted. The authors state that additional studies with larger sample sizes are needed to examine the relationship between these genetic variants and varied choline intake in populations with increased demands for choline (e.g., pregnant women). REF #11

Issues Related to Statin Myopathy

More than 30,000 individuals in the United States suffer from severe life-threatening symptoms of statin-induced myopathy that may, in some cases, persist long after the cessation of therapy. This statistic appears in a 2008 review published in *Current Opinions in Rheumatology* titled "Genetic Predisposition to Statin Myopathy." The author of this article, Dr. Georgirene D. Vladutiu, states, "Technological advances now make it possible to identify genetic variation in the human genome that reveals disease-causing mutations and single nucleotide polymorphisms associated with disease." She suggests that genetic analysis for variants and disease-causing mutations relevant to statin myopathy will provide predisposition testing for this and other drug-induced disorders, and that this testing will become an integral part of personalized medicine. REF #12

A number of interesting articles were published in 2008 on the subject of ubiquinone (coenzyme Q10) and myopathy in statin users. The mechanism through which statin use causes muscle toxicity is unknown. One theory is that statin therapy reduces coenzyme Q10 levels in muscle mitochondria, which leads to muscle injury and myopathy. Coenzyme Q10 is an essential cofactor in the mitochondrial electron transport pathway, and is also a lipid-soluble antioxidant. It is endogenously synthesized via the mevalonate pathway, and some is obtained from the diet. In addition to statin myopathy, coenzyme Q10 deficiency has been implicated in several clinical disorders, including heart failure, hypertension, Parkinson's disease, and malignancy. The research on coenzyme Q10 and statin myopathy has been inconclusive to date: the only two trials of coenzyme Q10 for statin-induced muscle problems contradict each other, with one showing supplementation had no effect of muscle pain, and the other showing modest benefit. All of the articles Dr. Bland reviews conclude that present evidence does not support coenzyme Q10 supplementation in statin-induced myopathy, but future clinical trials may determine if coenzyme Q10 has an important clinical role and if there is a case for measurement. REF #13-15

Vitamin K and Coronary Heart Disease

Vitamin K-dependent proteins have been demonstrated to inhibit vascular calcification. Dr. Bland discusses an article published in *Nutrition, Metabolism, & Cardiovascular*

Diseases in 2008 that examined the relationship between dietary vitamins K₁ and K₂ intake, and its subtypes (MK-4 through MK-10), and the incidence of coronary heart disease (CHD) in women. The conclusion of this study was that a high intake of menaquinones, especially MK-7, MK-8, and MK-9, could protect against CHD, but more research is necessary to define the optimal intake levels of vitamin K intake for the prevention of CHD. REF #16

Clinician/Researcher of the Month

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Dr. Victor S. Sierpina, MD, is Professor of Family Medicine with tenure at the University of Texas Medical Branch (UTMB) in Galveston, Texas. He is the first designated W.D. and Laura Nell Nicholson Family Professor of Integrative Medicine at UTMB. He graduated from the University of Illinois Abraham Lincoln School of Medicine as a James Scholar and completed Family Practice Residency at MacNeal Memorial Hospital in suburban Chicago. Since medical school he has integrated holistic medicine, alternative therapies, and wellness promotion in primary care. Dr. Sierpina is board certified by the American Board of Family Medicine and the American Board of Holistic Medicine. He was recently recognized as one of the Best Doctors in the USA in Family Medicine. He is recipient of two NIH grants supporting his educational and research efforts in integrative medicine.

In his introduction of Dr. Sierpina, Dr. Bland describes him as a “doctor’s doctor.” They discuss Dr. Sierpina’s personal journey and his work as a pioneer in the field of integrative medicine, with a particular focus on Dr. Sierpina’s work in curriculum development and with the Consortium of Academic Medical Centers. They also discuss the recent Institute of Medicine (IOM) Summit meeting, which Dr. Sierpina helped to organize. Dr. Bland and Dr. Sierpina share personal thoughts about the role integrative medicine will play as healthcare reform becomes a priority in the United States.

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