June 2014 Issue | Kenneth Pelletier, PhD, MD University of Arizona & UCSF

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Welcome to June 2014 *Functional Medicine Update*. This is the third in a series of what I would call foundations of functional medicine, and we're very pleased that this month we have an individual who I have a long and rich history with, Dr. Kenneth Pelletier. Dr. Pelletier is going to really help extend this functional medicine/systems biology model from that of the individual to that of the workplace environment. That is, to a broader model where hopefully more people can be influenced in a positive way as it pertains to how to access this systems biology thinking.

As you probably know Dr. Pelletier was the author of a book that was, for me, very transformative when I was a professor at Evergreen State College. We actually used his book, *Mind As Healer, Mind As Slayer*, as a very important part of the curriculum of the course that I was teaching, which was really the presaging for me of my thinking about functional medicine.[1] I'd have to say that Dr. Pelletier's book and his concepts of the mind as healer, mind as slayer as a systems thinking model, and then moving into Dr. Fries and his work, and then of course later my knowledge of Dr. Leroy Hood's work as it relates to his concept of systems biology—those three together—framed an important foundation and cornerstone of what gave birth to the concept of functional medicine back in 1990.

With that in mind, we're really pleased to have Dr. Pelletier tell us about this history that he has been involved in as a principal in really opening up the construct of how these concepts can be applied both institutionally and organizationally to affect millions of lives. So with that, let's move to our discussion with Dr. Pelletier.

INTERVIEW TRANSCRIPT

Clinician/Researcher of the Month

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Here we are once again at certainly my favorite part of Functional Medicine Update and that's our clinician or researcher of the month section, which we really use to frame each month's issue, and we're very, very fortunate, and I personally feel extraordinarily fortunate to have an individual that I think can give us both a historical context for the evolution and development of the field that we all share, and also a forward-looking vision-tender as to where this field is going. I'm speaking to a colleague and friend who has actually been a mentor of mine and a great figure of my own education, and that's Dr. Kenneth Pelletier. Some of you probably go back, as I do, to the 1970s and what was his absolutely frame-shifting book called Mind As Healer, Mind As Slayer that I believe really gave birth to the field of psychoneuroimmunology and this whole burgeoning concept of the body as a web—as a network—rather than as a collection of piece parts of organ systems. That was really a step in the understanding of the new biology of the 21st century that presaged it by more than 20 years. It was the textbook in a number of courses that I used in the university where I was teaching. I taught literally thousands of medical students using that as a book. Dr. Pelletier has gone on and just done extraordinary things, so let me give you a couple of vignettes of his extraordinary background.

Presently he's a clinical professor of medicine at the Department of Medicine and Family Community Medicine at the University of Arizona School of Medicine, and he also has adjunct activities at the Department of Psychiatry, University of California School of Medicine, San Francisco. He was previously at Stanford. He's worked with UCLA in corporate health areas with Jonathan Fielding who was another colleague that I had the fortune of knowing back in the 80s. His work on corporate health promotion and integrated systems of health care are truly pioneering, and he probably has more feet-on-the-street experience in how to implement integrated health systems into corporate environments than anybody that I'm aware of that is presently living or maybe has ever lived. His ability to take divergent information and distill it down, integrate it together, and then find institutional places for it to be implemented I think is truly unique in our field.

He's also an active scholar and has published more than 50 papers in the peer-reviewed literature over the years that have really codified and I think defined the nature of this domain of corporate health promotion from an integrated perspective. He's been able to bring so many of these principles that we now consider new that are really—to Dr. Pelletier—old principles that he pioneered that have now become new in the minds of many who are just learning them, and starting to implement them successfully into systems that really I believe are going to improve cost effectiveness of health care and help us beat back this rising tide of chronic illness.

Ken, it's just so wonderful to have you as a Functional Medicine Update contributor. I could say so many other laudatory things about your background but I hope I have at least given a sense as to the domain and scope and breadth of your contributions over the years. Welcome to FMU.

KP: Thank you very much and thank you for those kind words. I would reciprocate with my admiration for your work, which I have followed for many years as well. This is actually quite fun. I've been looking

forward to this conversation.

JB: As I. Let's start back as the Mind As Healer, Mind As Slayer level. What led you into writing that book and really creating what I think has become a major discipline? What were the kind of presaging things that led you into that?

Experiences Led to Structured Studies on Individual Ability to Regulate the Autonomic Nervous System

KP: Really two things. One was a personal experience; the other was professional. The personal experience was that I had spent some time in Greece and North Africa and Europe and the near East traveling (just hiking around). I had the time in the 70s to do that. And I happened to end up on an island in Greece named Kenos, and on Kenos there is a small chapel that is the equivalent for the Greek Orthodox religion of Lourdes in the French tradition—a place of miracles. I was there when there were pilgrimages taking place to that chapel. And at the time, I saw things that to me made no sense. People that were in extreme pain and would pray and enter the chapel and come out and they'd be walking and moving seemingly without pain, with greater limb movement. Skin conditions that would clear. I didn't see miraculous regeneration of limbs, but I saw enough that violated everything that I had been taught about how our physiology was supposed to react and I began to think, what was the role of belief? What had modified their ability to believe in themselves and believe what was possible to make these changes? So that was my personal experience and personal question.

I came back to UCSF School of Medicine and at that time Dr. Joe Kamiya was doing really the pioneering research on clinical biofeedback. And at that time there was a controversy about whether or not a human person could control their own sympathetic nervous system—their own autonomic nervous system. I had read about some research that Elmer Green had conducted at the Menninger Clinic with several adept meditators who were capable of controlling bleeding, pain, infection, but it had been done in a non-controlled way; it was really anecdotal. So in Joe's lab at UCSF, I set up the first structured studies where we looked at a series of adept meditators, in particular a man named Jack Schwartz, who was a Dutch survivor of a Nazi concentration camp who did a very unique thing of puncturing his bicep with a sharpened knitting needle and not bleeding, not experiencing pain, not having any infection from an unsterilized needle. And we documented his ability to do this and he made it very clear that we are able to regulate our own autonomic nervous system.

So the two events together made me really start to think about how powerful is the influence of the mind on our physiology, and the last thing I would add is it's not a matter of mind over matter. That's not the issue. My focus is that mind does matter, that it is a critical variable in determining our health and states of illness.

JB: I would say the impact that your book had on me when I picked it up was one of those great "ah-ha" experiences. I bet this was a general reaction that literally tens of thousands of other readers had as well, and that is you, for the first time, really started to help me understand the system that we later called systems biology and integrated systems—that there is no this division like angels on the head of the pin. There is this interactive system, which I think later got codified into terms like psychoneuroimmunology and where we have these integrated web-like interactions, and your book did an absolutely fantastic job of introducing that concept, and I think set forward this movement that we've seen over the last 35 or more years that has become the medicine of the 21st century.

KP: I would agree with that. One of the interesting things about Mind As Healer, Mind As Slayer is that, one, it is still in print and I'm always amazed at that, but in 1992, Dell Publishing decided to publish an updated anniversary edition of the book, and they sent it out to reviewers and they asked, should we update the text, or should we leave it as is and just have a new foreword? And the overwhelming response back was, leave it as it is, because it really did create the template. And we actually, even in the book, use the term psychoneuroimmunology way before it was in widespread use, but it was a way to try to describe this systemic linkage between mind and body, between mental states and physiology states, and also subtle energy systems.

So we just had an updated foreword to the book in 1992, and to me what was fascinating is when I had to go back into the book and write this update on the foreword, I realized that the science had progressed. Our understanding of the nature of mind/body interaction in a systems model—dietary influences, stress influences—had really progressed. But, the actual practices—the meditative disciplines that modify the mind/body interaction—have not changed in thousands of years. There was really nothing new to say about the meditative and mind/body practices that were new, except for the fact the science had finally caught up with the experiential part of our lives.

JB: I'd like to segue a little bit from there. I don't want to skip over some critical parts of history, here, but I'd like the listeners to know about how these observations and communications that you brought to the field translate into some of the things that you have focused on to make them implementable and executable. I'm just going to cite a few of your earlier PubMed publications because I think it gives a little bit of a tapestry as to where you've taken these observations. A paper titled "A Wake-up Call for Corporate America," a paper titled "Mind-Body Medicine in Ambulatory Care: An Evidence-Based Assessment," a paper called "Population Health Management as a Strategy for the Creation of Optimal Healing Environments in Worksites and Corporate Settings," a paper on "Developing Self-Report Outcome Measure for Complementary and Alternative Medicine," "Care Management Program Evaluation: Constituents, Conflicts, and Moves Toward Standardization," "Review and Analysis of the Clinical Cost-Effectiveness Studies of Comprehensive Health Promotion and Disease Prevention," "Management Programs and the Worksite from 2000 to 2004."[2],[3],[4],[5],[6],[7] I'm just touching on the surface here just to give a little bit of a vignette as to how you've taken this information into implementable, executable strategy. It's interesting. Through the years you've—I know—worked with all sorts of major Fortune 100 companies, including Cisco, and IBM, and American Airlines, and Prudential, and Dow, and Disney, and Mercer, and Merck, and Pepsi, and Ford, and Pfizer, and Walgreens, and Microsoft, and NASA. BlueCross, United Healthcare. Tell me how you bridge these gaps. This is a pretty amazing domain to have impacted.

Early Mind-Body Work Leads to a Focus on Corporate Health and Wellness

KP: It is, and it is interesting to think about that progression initially from those first studies and demonstrations around mind-body and how we can influence and self-regulate our autonomic nervous system. What I began to think about is how often does that occur out of awareness, i.e. we create states of illness through decisions, through beliefs, through actions, through lifestyle changes that are dysfunctional, that are negative for us and create poor conditions for health. So that took me down the clinical path. But the other questions, as part of the Mind As Healer, Mind As Slayer, the mind as healer part always interested me more, which are the preconditions for health? How do we experience optimal health? And as I looked at that, a light bulb went off.

In 1980, actually, Bob Beck, who was the Senior Vice President at IBM, convened a group of five of us that were supposedly experts in preventive medicine. There really weren't any experts, but we were the closest I think they found. And we were going to develop the bid specifications for IBM's first health program for their total population of employees. It took us about three or four years of meetings to do that, and when we came up with the bid specs and put it out into the world we found there were no vendors—there were no providers—that could actually develop that program. You mentioned Jonathan Fielding earlier. He started a company called US Corporate Health Management, which was the provider of those programs for IBM, and I worked with Jonathan to develop the very first programs. That company was subsequently bought by Johnson & Johnson and became their Live for Life™ program, which was sold throughout the corporate world.

But the light bulb that went on for me then and remains driving my interest to the present day is that if you look in our society and you ask who has a vested interest in health, it's the private corporate sector. Companies want productive, active, functional employees. They have no interest in disease. They have no interest in hospitalization and dysfunction. They really want people who are alive and healthy.

That led, in 1985, when I started the Corporate Health Improvement Program (or CHIP), and Bob Beck at that point moved from IBM, and became Senior Vice President of Personnel at Bank of America in San Francisco. He invited companies that he thought would share this interest. I invited my academic colleagues, and we began a dialogue. This was at UCSF from 1985 to 1990. It was the beginning of that program.

Our mission since then and to the present day remains the same, which is to demonstrate the clinical and cost outcomes of health promotion and integrative medicine programs in worksites. So that's what we've done, and you mentioned some of the companies that we've worked with. CHIP is a group of 15 companies. We keep it at that level because our meetings, which are twice a year, are really as a working group. We develop projects that have been as short as one year with a mammography program. We did the first mobile mammography screening program at Levi Strauss in the early 80s, and for 10 years we were the worksite branch for the Women's Health Initiative. So we've really covered a lot of ground over that time, but my main thrust—so the common element—is how does an individual achieve optimal health, and what is the supportive environment that motivates, incentivizes, and supports optimal health? And since we spend so much more time at work than anywhere else (including sleep), that is a logical place where I would focus my attention.

JB: You, in 2011, had an article published that you authored titled "Reflections on Developments in Health Promotion in the Past Quarter Century from Founding Members of the American Journal of Health Promotion Editorial Board."[8] I think that that reflections concept is a very powerful concept with your perspective that probably is a unique n-of-1, looking at the past, present, and the future. Could you help our listeners understand a little bit of what I would call the good, bad, and the ugly of where you think we have been, where we are, and possibly where we're going in this field and how it can really help transform health care?

KP: Yes, that's a great question. I think to begin with, if you look at the private corporate sector, about half of the total annual medical expenditure in the United States is governed by what private companies do and do not select for their benefits plans. So that's a huge financial leverage point within a medical system that is disease-obsessed. I've actually referred to it in my publications as a disease management

industry rather than a healthcare system. “Disease management industry” really sounds pejorative, but it really isn’t—I mean, disease is the focus of medicine, management follows from that, and at one-eighth of the total US economy—2.2 trillion dollars in 2013—it’s certainly an industry. So we have this disease industry out there, but when we look at the corporate sector, to me the positive thing is that there is a potential for an industry that believes in better diet, improved nutrition, use of supplements, early detection, and exercise and nutrition, and the use of alternative practices that are evidence-based. If you can demonstrate, as we did with Ford, that a combination of chiropractic, mindfulness meditation, and acupuncture is more effective with back pain than traditional care in terms of clinical and cost outcomes, they have implemented that model in all 12 of their onsite clinics that are devoted to back pain. So there becomes a point of leverage where you can take an idea that may or may not be acceptable as an idea, but when you demonstrate that it really works, the private corporate sector is very practical and they’ll say, “That’s fine. It’s safe, it’s efficacious, it’s cost-effective. We will implement that.” So there’s a very receptive place out there for all of your listeners, all of your people that are in this network, to be able to think about taking your clinical skills and bringing it into the worksite. There is tremendous receptivity.

Addressing Criticism of Corporate Health Programs

I think you know the downside has been the hue and cry that somehow these programs are intrusive. That it is Big Brother. That people are being coerced into certain ways of being and certain ways of acting. But the reality is that if you look closely, these are really based on informed choice. No one is coerced into stopping smoking, or reducing their hypertension or cardiovascular risk, or changing their diets. They are incentivized. They are very often given financial or recognition incentives, which motivate all of us in our lives, but they are not coerced into doing that.

Most recently there has been some press from several critics of the field saying, “Well, the return on investment figures are not real.” I’ve written eight reviews of this literature over the last 25 years, and it is unequivocally clear that there are about 200 studies of worksite-based interventions. About half of those have been evaluated for cost outcomes, and of the cost outcome studies, only one failed to demonstrate a return on investment and that was because they factored in the cost of a two million dollar gymnasium into the cost side of the equation, so of course you’re not going to see an effect with that much money piled up on the cost side. But they are cost effective. They are clinically effective.

If I look out into the future with the Affordable Care Act, really what’s happened is it has placed more burden on the companies to begin to seriously take the role of themselves as promoting optimal health for their employees. I think there are more opportunities for individuals, for vendors, for companies to go in and demonstrate by whatever clinical method you have, be it nutrition, exercise physiology, chiropractic, herbal medicine, demonstrating that you can make a difference in a major chronic disease that, for them, they would like to be rid of, both in terms of carrying employees and in terms of cost. So I’m very optimistic about the future of this area. It’s certainly growing very rapidly. We’ve had more activity and interest from companies, both in the United States and abroad in the last two or three years than we’ve had in 26 years.

JB: That is very encouraging, and just for our listeners, to give you a couple of citations from the bibliography of Dr. Pelletier’s published papers, the Ford Motor Company discussion you had I think you included in a paper you published in the Journal of Occupational and Environmental Medicine in 2010, volume 52, page 256 titled “Integrative Medical Intervention in a Ford Motor Company Assembly Plant,”

and then your most current review of the cost-effectiveness was also in the Journal of Occupational and Environmental Medicine, "Review and Analysis of the Clinical Cost-Effectiveness Studies of Comprehensive Health Promotion and Disease Management Programs at the Worksite."[9] That was a 2008 to a 2010 review, and that was in the volume 53, page 1310 issue of 2011.[10] I just wanted to put those citations into the mix for people that might want to follow up on them.

So if we go back to ask the question why we, then, with all this very positive information in this more than three decades, going on four decades of rigorous work and evaluation, why there are still outlier—I'd like to call it—naysayer opinions. We see these things being written almost on a regular basis by people who have good pedigrees that are associated with good institutions who are saying all of this is bunk. It's all just a bunch of smoke and mirrors. None of this really works. It has no science. It's pixie dust. What is it that generates thinking people to come to this conclusion?

KP: Well, it's interesting because you're right. That has occurred and it continues to occur. Part of it is sheer inertia—the unwillingness to really look at the data and to take a serious unbiased, thoughtful look at the literature. What I have found in some of the recent critiques that have been written is that either the data is overlooked, or there is clearly a lack of citation of the enormous numbers of studies that are available.

Now, on the defense, if you will, of the critics, there is a great deal more to be done. The study designs are not as rigorous as they should be. It is very difficult to conduct a randomized clinical trial in a worksite. Some ways of getting around that is you'll intervene in one worksite and have a physically distant worksite as the control, so you have the same kinds of workers and the same kinds of issues. So there are ways to address the methodological limitations, which admittedly exist.

If you look back over these two hundred studies, you find that a lot of the early claims of return-on-investment were excessive. You had 10-to-1, and 15-to-1, and these really overblown estimates of return-on-investment. When you look at the more recent literature—the more rigorous studies—they look at around a 3-to-1 or 5-to-1 return on investment, so you're getting to more objective, more realistic kind of assessments that are taking place.

I think that's a variable, and the critics are correct. The methodology has not been the best. It is getting better. The last thing that I would say is that if you read…for instance, when Rand just this year published a study and the critics seized on that and said, "Well, the Rand study is proving that these programs do not work."[11] But if you look at the Rand methodology, it's terrible (the methodology by which the study was conducted). And the principal investigator has publicly and a then subsequently written up clarifications about the study saying, "Look, our study did not, in fact, disprove that these programs work." In fact, the evidence would indicate that they do, but they had extreme limitations on the size of the sample, the number of companies that they could look at, the nature of the database they received from the companies.

So there are some methodological flaws, if you will, in studies that are most often cited by the critics. But overall, when I look at my own analysis, usually every two or three years when I publish the review, the vast majority of studies indicate that these are both clinically and cost-effective, and becoming more so over time. We're learning. We're learning how to do these things better.

JB: People in this field, I think we can say that these are people that have decided to walk a different path—maybe a road less traveled. They've often given up certain economic incentives. They've often taken on some degree of scrutiny from peers. It's not necessarily the easiest decision for a career path to take to move your training into what I would consider the new medicine of the 21st century. They'll often ask me, "Do you think I can actually make a living doing this?" Because all of the incentives, as you pointed out, Ken, are really for ICD-9 coded disease treatment and not really related to what I would call a systems biology approach towards health promotion. As you've reviewed over the last three-plus decades (nearly four decades) do you feel that the environment is improving to incentivize docs to actually be in this field so they can make a living?

Integrative Medicine: Better Training, Higher Compensation, and—Now—National Certification

KP: It is, and it is grudgingly slow. You've traveled this path as well in your own career, and you know what it's like when you break outside of the normal reimbursement and compensation system to follow your own path, to make a contribution that's greater than compensation-only model. But having said that, it is more possible now for integrative medicine physicians, for integrative medicine providers of all type—nursing, exercise physiology—to all be providers of these programs direct to the general public. Certainly the spa industry—the day spa industry—is growing phenomenally quickly. Those provide positions and entre points for services that didn't exist a few years ago.

Secondly, the Center for Integrative Medicine at the University of Arizona, which is where I'm a faculty member, has trained over 1100 physicians in integrative medicine. That's a two-year postdoctoral program in integrative medicine. So there are now 1100, I think, and with the exception of maybe 40 or 50 they are all domestic (about 40 or 50 are international). So they are out there, back in clinics, in the hospitals, in free-standing practices, delivering integrative medicine services and being compensated for them, and being openly compensated for them by having appropriate coding of their billing. So it is possible for them.

And the third, to me a major development, is national certification, which we have in every medical specialty. In the fall of this year—the fall of 2014, probably October, I believe—will be the first national exams that will provide national certification in integrative medicine. There are thirteen of us that have been on the board developing the questions for the exams. These include Andy Weil, and Tieraona Low Dog, and Victoria Maizes, and Patrick Hanaway. These are people who have had a leading role in the field already—Roberta Lee, Mimi Guarneri—so it's been a very exciting group. But the national certification will certainly help to establish the credibility of providers, and credibility, then, in turn, compensation, and changes in coding will change.

I take all of those as indications that the tide has not turned. The predominance of compensation is still for staying within the conventional medical model, but it is changing, and it is changing in ways that there are now many more people making a good living teaching, training, delivering programs, delivering clinical services than has ever been up to this point in time. And it's going to continue.

JB: That is a really, really nice statement of great optimism about our future. I'd like to ask one last question. I will precede my question by saying I know there is no specific answer to this question, but you're such a great thought leader I would be interested in how you might approach an answer. The question goes something like this: We have a variety of individuals who are in decision-making positions

within the disease-care delivery system, both from the insurance side and from the health delivery side and institutional side, who are very resistive to change and feel that the system that we're now operating under is really the solution to the problem; it's just a question of providing excellence with regard to the present way that we're approaching the burden of disease. Yet when we look at the statistics on the cost-effectiveness of this system, even the most favorable observers would say that the cost-effectiveness is problematic and that we're really seeing some very distinctive trends where the global, or at least the United States economic system could be brought to its knees just on the basis of the burden of the nature of Alzheimer's and diabetes and other chronic disease that are so costly. My question is if there is this rising tide of recognition that the present system is not working, why is there, then, a resistance, do you feel, to something of change? Is it because we don't know how to change, or is it because that's the nature of systems that will resist change? Why is it that people will fight so hard to retain the present system when the evidence is it's not working?

KP: You've asked a very powerful question. Just a few thoughts about it, one with regard to the effectiveness of the current disease management industry in the United States. When you look at international health outcomes—heart disease, cancer, chronic diseases, infant mortality, homicide, etc.—we rank 37th in the world. That is the same as Bosnia; 37th in the world. And among the top 12 post-industrial nations, we rank last, or most expensive in terms of outcomes. So we are spending the most for the youngest, average-age population on the planet, and getting the least in terms of health outcome, so that's a given and there's really no arguing with that.

Why do we not change is because of the extraordinary vested interest and lobbying that occurs. If you look at the top ten lobbies in Washington, DC, in the top ten you have the California Medical Association, the American Medical Association, the American Pharmaceutical Association, the American Hospital Association. So four of the top ten lobbies in Washington have a common thread of business-as-usual—of keeping medicine as it is and as it is supposed to be. That's a lot of weight weighing against change.

Countervailing that is the fact that we literally cannot keep going in this direction. This is a cost-inefficient model to prevent disease in the way that you're describing, to use the kinds of alternative methodologies which are frequently less costly, fewer side effects, with better outcomes. The data is getting better, and that data is beginning to have an effect. For instance, just this morning I had a conversation with the President and CEO of Parker Hannifin. It's a company in the Great Lakes area. They have had a policy for the last almost ten years now of providing 80 percent compensation to an employee to seek any—literally any and all—treatments, be they conventional or alternative. It's a worldwide company. It's a thirteen billion dollar manufacturing company. They want to begin to look at the outcomes: How do you collect data on how well these people are doing? What's the clinical and cost-effectiveness of doing this? But that's astounding that such a company would have done this. They've seen their pharmaceutical costs go down. They've seen their chronic disease incidence go down. Hospitalizations have been decreased. Use of supplements has increased. Use of preventive services has increased. Exercise, etc. So they've seen, by having this policy in place—now, not all of their employees are using it, and they do want to see more people do that—but they are having to educate, and to me, I think the bottom line is informed choice.

What we really need is for every individual that looks at what they can and cannot do with his or her health to make informed choices, be it conventional or alternative or a hybrid of the two, that's why I like

the integrative medicine. Integrative medicine is basically taking the best evidence-based conventional medicine and the best evidence-based alternative medicine and fusing them into one treatment methodology that's effective for the individual. That, to me, is the future, and I think we are moving toward that partially out of economic necessity, and partially because the research is getting better and the awareness of these methods through the Internet, through programs like this, is increasing people's awareness of what their options are to exercise informed choice.

JB: I can't tell you how much I feel privileged to have this conversation and also to have had our friendship and collegial relationship over the last 35 years. It's truly remarkable when you take a snapshot of a person's life—you as a Woodrow Wilson Fellow, back when—and see where you're career track is taking you and the impact that you're discoveries and explorations have had on social change. I want to applaud what you've done. I want to say we've got a lot of work ahead of us, but the voice that you've given us is a very, very optimistic and forward-looking thought that the paradigm will shift and that we're near something that I think makes really good sense in light of the new biology of the 21st century. I want to thank you very much for spending this time with us on Functional Medicine Update.

KP: Thank you, this has been very enjoyable. It's really a pleasure to talk with you, Jeff.

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