

### THE PROBLEM: OUR GLOBAL HEALTHCARE CRISIS

- The **rapidly spreading epidemic of chronic disease** has compromised the effectiveness of our healthcare system and threatens to bankrupt both national and global economies.
- Alarming projections suggest that if current trends continue unchecked, **future generations will have shorter and less healthy lives** than the adults of today.
- **Current models of clinical medicine are outdated** and do not address the underlying causes and solutions for chronic disease, which are primarily driven by the lifelong, daily interaction between an individual's genetics, environment, and lifestyle choices.

### THE SOLUTION: FUNCTIONAL MEDICINE CHANGING THE WAY WE DO MEDICINE AND THE MEDICINE WE DO

- Functional medicine offers a **powerful new operating system and clinical model** for assessment, treatment, and prevention of chronic disease to replace the outdated and ineffective acute-care models carried forward from the 20<sup>th</sup> century.
- Functional medicine incorporates the **latest in genetic science, systems biology**, and understanding of how environmental and lifestyle factors influence the emergence and progression of disease.
- Functional medicine enables physicians and other health professionals to practice **proactive, predictive, personalized medicine** and empowers patients to take an active role in their own health.

### WHAT WILL IT TAKE?

**\$20 million dollars over the next five years** will fund vital initiatives strategically targeted at reversing the chronic disease epidemic and catalyzing momentum toward improved health outcomes and lower costs. A highly successful nonprofit educational institute, IFM's leadership is critical to the success of these initiatives.

# STRATEGIC OBJECTIVE: REVERSE THE EPIDEMIC OF CHRONIC DISEASE THROUGH EDUCATION, RESEARCH, AND COLLABORATION

## Education

- Train the healthcare workforce in effective treatment and prevention of chronic disease
- Set proficiency standards for the practice of functional medicine
- Diversify educational models and technology to reach and teach students and practicing clinicians

## Research

- Develop new research models for assessing whole systems practices
- Establish practice-based research networks to validate the most successful applications of functional medicine
- Ensure that emerging scientific evidence on new approaches to chronic disease is continuously integrated into the functional medicine model; collect, synthesize, and disseminate research in lifestyle, systems, and functional medicine

## Collaboration

- Collaborate with leaders in academic medicine to ensure the integration of functional medicine into medical schools and residency programs
- Work with employers, insurers, and government agencies to implement pilot programs to demonstrate how the functional medicine model will improve outcomes and reduce costs in the marketplace
- Educate and collaborate with policymakers to support initiatives aimed at transforming medical education, research, and practice

### THE PROBLEM

*A rapidly spreading epidemic of chronic disease has compromised the effectiveness of our healthcare system and threatens to bankrupt both national and global economies. Alarming projections suggest future generations may have shorter, less healthy lives if current trends continue unchecked.<sup>1</sup> Our current healthcare model fails to confront both the causes of and solutions for chronic disease and must be replaced with a model of comprehensive care geared to effectively treating and reversing this escalating crisis.*

### THE COST OF CHRONIC DISEASE

*Of total healthcare costs in the United States, more than 75% is due to chronic conditions.<sup>2</sup> In 2008, the U.S. spent 16.2% of its GDP (\$2.3 trillion) on health care.<sup>3</sup> This exceeds the **combined** federal expenditures for national defense, homeland security, education, and welfare! By 2023, if we don't change how we confront this challenge, **annual** healthcare costs in the U.S. will rise to \$4.13 trillion,<sup>4</sup> the equivalent—in a single year—of four Iraq wars.*

### THE GLOBAL BURDEN OF CHRONIC DISEASE

- “By 2020, it is predicted that **non**communicable diseases will account for 80% of the **global burden** of disease, causing 7 out of every 10 deaths in developing countries, compared with less than half today.”<sup>5</sup> From 1983 to 2009, the number of people in the world with diabetes increased seven-fold, from 35 to 225 million.<sup>6</sup> In 2010, 92 million diabetics and 148 million pre-diabetics were identified in China alone.<sup>7</sup>
- **In the United States**, about 133 million Americans—nearly 1 in 2 adults—live with at least one chronic illness, and chronic diseases *already* cause 7 in 10 deaths each year:
  - » **Heart disease:** 81 million people<sup>8</sup>
  - » **Cancer:** 11 million people<sup>9</sup>
  - » **Depression:** More than 1 in 20 Americans, 12+ years old<sup>10</sup>
  - » **Diabetes:** “In the past 20 years [in the U.S.], the prevalence of diabetes has doubled and will do so again in the next 16 years.”<sup>11</sup> “One in every 3 children born [in the U.S.] today will develop diabetes during his/her lifetime.”<sup>12</sup>

### OUTDATED CLINICAL MODELS

Despite notable advances in treating and preventing infectious disease and trauma, the acute-care model that dominated 20<sup>th</sup> century medicine is not effective in treating and preventing chronic disease.<sup>13</sup> *The primary driver of chronic disease is the interaction among genes, activities of daily living (lifestyle), and the environment.*<sup>14,15,16</sup> Adopting a **new operating system** for 21<sup>st</sup> century medicine requires that we:

- Recognize and validate more appropriate and successful clinical models
- Re-shape health professions education and clinical medicine so that health practitioners achieve proficiency in the assessment, treatment, and prevention of chronic disease
- Reimburse equitably for lifestyle medicine and expanded preventive strategies

## REFERENCES

- <sup>1</sup> Olshansky SJ, Passaro DJ, Hershow RC, Layden J, et al. A potential decline in life expectancy in the United States in the 21st century. *NEJM*. 2005;352(11):1138-45.
- <sup>2</sup> Centers for Disease Control. Accessed June 6, 2010 at <http://www.cdc.gov/chronicdisease/resources/publications/AAG/chronic.htm>
- <sup>3</sup> Centers for Medicare & Medicaid Services. NHE Fact Sheet. Downloaded from [http://www.cms.hhs.gov/NationalhealthExpendData/25\\_NHE\\_Fact\\_Sheet.asp](http://www.cms.hhs.gov/NationalhealthExpendData/25_NHE_Fact_Sheet.asp) on February 14, 2010
- <sup>4</sup> Estimate from the Millken Institute report: *An Unhealthy America: The Economic Impact of Chronic Disease*, <http://www.chronicdiseaseimpact.com/>
- <sup>5</sup> Boutayeb A, Boutayeb S. The burden of non communicable diseases in developing countries. *Int J Equity Health*. 2005;4(2). Online access at <http://www.equityhealthj.com/content/pdf/1475-9276-4-2.pdf>
- <sup>6</sup> Wild S, Roglic G, Green A, et al Global prevalence of diabetes: estimates for the year 000 and projections for 2030.. *Diabetes Care*. 2004;27(5):1047-53.
- <sup>7</sup> Yang W, Lu J, Weng J, et al. China National Diabetes and Metabolic Disorders Study Group. Prevalence of diabetes among men and women in China. *N Engl J Med*. 2010;362(12):1090-1101.
- <sup>8</sup> American Heart Association. Accessed June 6, 2010 at <http://www.americanheart.org/presenter.jhtml?identifier=4478> .
- <sup>9</sup> American Cancer Society. Accessed June 6, 2010 at [http://www.cancer.org/docroot/cri/content/cri\\_2\\_6x\\_cancer\\_prevalence\\_how\\_many\\_people\\_have\\_cancer.asp](http://www.cancer.org/docroot/cri/content/cri_2_6x_cancer_prevalence_how_many_people_have_cancer.asp)
- <sup>10</sup> Centers for Disease Control. Accessed June 6, 2010 at <http://www.cdc.gov/nchs/data/databriefs/db07.htm#H1>
- <sup>11</sup> American Diabetes Association. Standards of medical care in diabetes—2009. *Diabetes Care*. 2009;32(supp1):S13-S61.
- <sup>12</sup> Campbell RK, Martin TM. The chronic burden of diabetes. *Am J Manag Care*. 2009;15( 9): S248-S254
- <sup>13</sup> Jones DS, Hofmann L, Quinn S. 21<sup>st</sup> Century Medicine: A New Model for Medical Education and Practice. The Institute for Functional Medicine: Gig Harbor, WA, 2009.
- <sup>14</sup> Willett WC. Balancing life-style and genomics research for disease prevention. *Science*. 2002; 296:695-97.
- <sup>15</sup> Thorpe KE, Florence CS, Howard H, Joski.P. The rising prevalence of treated disease: effects on private health insurance spending. *Health Affairs*, Web exclusive, June 27, 2005.
- <sup>16</sup> Heaney RP. Long-latency deficiency disease: insights from calcium and vitamin D. *Am J Clin Nutr* 2003;78:912-9.

### THE SOLUTION

*The primary drivers of the chronic disease epidemic are the complex daily interactions between an individual's genetics, environment, and lifestyle choices. A comprehensive clinical model—a new operating system—is needed to address these underlying causes of disease and train healthcare practitioners to help their patients manage this complex, interconnected web. Functional medicine provides just such a powerful new operating system and clinical model to replace the outdated and ineffective acute-care models carried forward from the 20<sup>th</sup> century. Three “engines” will drive progress toward achieving the strategic objective of reversing the epidemic of chronic disease: Education, Research, and Collaboration.*

#### EDUCATION

- *Create a comprehensive blueprint* for the specific knowledge and skills required of a trained functional medicine clinician
- *Develop innovative teaching methods and instructional technologies* suited to the needs of practicing clinicians
- Prepare a *functional medicine curriculum for health professions schools* and residency programs; develop apprenticeship and mentorship programs
- *Set standards and assessment methods for certifying proficiency* in functional medicine practitioners from a variety of healthcare disciplines

#### RESEARCH

- *Build and maintain a practice-based research network (PBRN)* to assess and validate the most successful functional medicine approaches to specific conditions
- Contribute to the national effort to *develop and validate whole systems research models* and comparative effectiveness studies
- *Continuously monitor the emerging scientific evidence* about the underlying causes of—and effective approaches to—chronic disease; integrate the evidence into every level of functional medicine education

#### COLLABORATION

- *Identify and partner with key insurers, employers, and government agencies to implement pilot projects* that will demonstrate the marketplace practicality and clinical validity of the functional medicine model
- Identify and partner with organizations that can help *build out and validate the functional medicine model*, with a particular focus on educational technology and clinical tools
- Collaborate with leaders in academic medicine to *integrate functional medicine education into health professions schools and residency programs*
- Educate and collaborate with policymakers to *support initiatives* aimed at transforming medical education, research, and practice

### THE RESOURCES

*Reversing the epidemic of chronic disease is, of course, a global challenge requiring initiatives not only in education and clinical practice, but also in public health, environmental quality, research, technology, reimbursement, and consumer/patient education. Three pivotal initiatives—building upon IFM’s record of achievement and reputation for leadership—include (1) continued development and expansion of the new clinical model, (2) educating/training much larger numbers of practitioners (and students) to practice it, and (3) validating it through research and pilot projects. These will require approximately \$20 million over the next 5 years.*

#### EDUCATION (\$6,865,000)

- **Comprehensive blueprint: \$1,700,000.** A flexible, continuously updated plan charting the minimum knowledge and skills required of functional medicine practitioners, the blueprint will be developed by experts (including IFM faculty and staff) and reviewed by experienced practitioners.
- **Innovative teaching methods and instructional technologies: \$2,250,000.** Teaching methods that improve the conversion of knowledge to practice, that are suited to the needs of practicing clinicians, and that use evolving technology to create efficiency and efficacy will be integrated into IFM educational offerings.
- **Functional medicine curriculum development for health professions schools and residency programs: \$1,100,000.** One of IFM’s highest priorities is to train today’s medical students so that we don’t have to re-train tomorrow’s practitioners. We will engage with 50 different schools and programs to develop appropriate course work (both classroom and online learning). Our goal: within 5 years, 25 schools/programs will offer such courses.
- **Standards and assessment for certifying proficiency: \$1,515,000.** The Functional Medicine Certification Program will work from the comprehensive blueprint and the educational curriculum to shape entry-level competency-based standards for a functional medicine practitioner. Assessment methods will be thoroughly researched, implemented, and maintained.
- **Masters’ series: \$300,000.** We will interview functional medicine’s most expert clinicians and teachers to develop an educational series that documents the history, best practices, and legacy of those with the highest level of knowledge and skill.

#### RESEARCH (\$2,870,000)

- **A practice-based research network (PBRN): \$2,120,000.** To assess and validate the most successful functional medicine approaches to specific conditions, IFM will build a network of practitioners who are willing (a) to be trained in clinical research methods and (b) to utilize standardized functional medicine protocols. Over the five years of this plan, 5 conditions will be investigated and reports on each will be published.
- **Whole systems research models: \$375,000.** Key IFM faculty and staff will engage with the national effort to develop research models suitable for investigating whole systems practices and the comparative effectiveness of various healthcare disciplines.
- **Continuously monitoring the emerging evidence base: \$375,000.** IFM will continue to allocate significant resources to staying abreast of emerging science in systems biology, biochemistry, and physiology. IFM will utilize this continuous institutional self-education to ensure that the comprehensive blueprint—and the educational tools that flow out of it—remain current with the best available evidence, and to bring that evidence more quickly and effectively to bear upon clinical practice.

- **Second-stage functional medicine research.** As IFM moves through the initial years of the current strategic plan, long-term, large-scale research projects will be considered; as plans for such projects solidify, partners and funding will be sought.

## COLLABORATION (\$5,165,000)

- **Identify and educate key insurers, employers, and government agencies (\$300,000) with whom IFM can collaborate on pilot projects (\$1,390,000).** Over the five years of this plan, three pilot projects will be selected, each involving a partner from one of the three sectors, to demonstrate the marketplace practicality, reduction in healthcare costs, and clinical validity of the functional medicine model. The goal will be to demonstrate increased value—improved outcomes at lower cost.
- **Build out and validate the functional medicine model: \$1,050,000.** IFM will partner with selected companies and individuals who have expertise and tools that can help to expand both educational technology and clinical tools that enhance the effectiveness of training and practice.
- **Integrate functional medicine education into health professions schools and residency programs: \$1,100,000.** Changing medical education can be a daunting challenge. Funding to cover the cost of medical faculty release time, tuition scholarships to enable both faculty and students/residents to attend IFM courses, and dedicated IFM faculty/staff time for educating leaders and professors in academic medical education will be key factors in achieving this goal.
- **International and global partnerships: \$1,325,000.** International-level collaboration—including translating coursework and publications, developing and mentoring international faculty, and responding to requests from many other countries to send IFM faculty/staff to attend and/or speak at global conferences on emerging health issues—will help IFM bring the functional medicine model to other countries struggling with 21<sup>st</sup> century chronic diseases.

## ORGANIZATIONAL DEVELOPMENT (\$5,800,000)

- **Expand IFM's Board of Directors:** Add recognized expertise in business and strategy, technology and innovation, research and development.
- **Create and maintain an IFM Scientific Advisory Board:** Recruit physicians and scientists from diverse disciplines, with a record of excellence in clinically based research, academic medicine, and continuing medical education, to (1) ensure that the functional medicine knowledge base stays on the leading edge of systems biology and its clinical applications; (2) convene meetings to review and integrate emerging evidence into the functional medicine model; (3) establish and guide the research agenda for the practice-based research network and collaborative pilot projects ; and (4) secure and strengthen national and international relationships in research and education.
- **Invest in infrastructure to keep pace with growth:** Management, development, fundraising, marketing, and public relations personnel will be recruited to lead and support all of the above initiatives. Expanded office space, additional office equipment, and the advice of expert consultants will all be acquired as needed.

**TOTAL FIVE-YEAR COSTS: \$20,700,000**

### COLLABORATION: THE PILOT PROJECTS

**GOAL:** Identify and educate key insurers, employers, and government agencies (\$300,000) to collaborate on pilot projects (\$1,390,000) that will investigate cost savings and improved outcomes from the use of functional medicine.

**DELIVERABLE:** Over the five years of this plan, three pilot projects will be selected, each involving a partner from one of the three sectors, to assess the marketplace practicality and clinical validity of the functional medicine model.

### POTENTIAL PARTNERS—THIRD PARTY PAYERS

- In the U.S., *government agencies and private sources* (employers and insurers) are the primary third party payers of healthcare costs. In 2007, cancer, heart disease, and diabetes represented 3 of the 6 most costly conditions covered by these entities:

Condition	TOTAL COSTS (All Payers)	Amount paid by: Medicare/Medicaid	Amount paid by: Employers and Insurers
Heart Disease	\$82,166,710,000	\$45,191,690,500 (55%)	\$25,718,180,230 (31.3%)
Diabetes	\$41,181,710,000	\$18,943,586,600 (46%)	\$12,313,331,290 (29.9%)
Cancer	\$97,916,880,000	\$37,600,081,920 (38.4%)	\$50,623,026,960 (51.7%)

**Source:** Center for Financing, Access and Cost Trends, Agency for Healthcare Research and Quality: Medical Expenditure Panel Survey, 2007.

[http://www.meps.ahrq.gov/mepsweb/data\\_stats/tables\\_compendia\\_hh\\_interactive.jsp?\\_SERVICE=MEPSSocket0&\\_PROGRAM=MEPSPGM.TC.SAS&File=HCFY2007&Table=HCFY2007%5FCNDXP%5FD&\\_Debug=](http://www.meps.ahrq.gov/mepsweb/data_stats/tables_compendia_hh_interactive.jsp?_SERVICE=MEPSSocket0&_PROGRAM=MEPSPGM.TC.SAS&File=HCFY2007&Table=HCFY2007%5FCNDXP%5FD&_Debug=)

- Cost savings.** The President's Council of Economic Advisors identified the highest priority areas from which cost savings can come (Executive Office of the President. *The economic case for health care reform.* June 2009, p. 13.):
  - » We spend a substantial amount on high-cost, low-value treatments.
  - » Patients obtain too little of certain types of care that are effective and of high value.
  - » Patients frequently do not receive care in the most cost-effective setting.
  - » There is extensive variation in the quality of care provided to patients.
  - » There are many preventable medical errors that lead to worse outcomes and higher costs.
  - » Our system is complex and we have high administrative costs.

The first two items in the list target precisely the areas in which functional medicine offers a comprehensive model for delivering high-value care that will also be lower in cost.

- Potential partners** for these initial pilot projects will come from employers, insurers, and government agencies that have identified IFM and functional medicine as one of the most promising avenues for delivering the efficiencies and improved outcomes they are desperately seeking.

### SELECTING AND IMPLEMENTING THE PROJECTS

- Project goals.** Each project will be selected for its ability to validate either
  - that functional medicine interventions for a specific condition can achieve greater clinical effectiveness without greater costs than conventional approaches, or
  - that such interventions can achieve at least equivalent clinical effectiveness with lower costs than conventional approaches.

Therefore, conditions will be considered for pilot projects if they have clear diagnostic criteria and well-accepted conventional treatments with known average costs. Initial projects are likely to focus on conditions with significant conventional treatment costs for third party payers, such as those shown in the table above.

- **Project methodologies.** IFM will recruit the services of an experienced research scientist (or organization) who can ensure impeccable design and methodology for each pilot project. The final choice of design and methodology will be approved by all collaborating partners and the methodology consultant.
- **Implementation process.** IFM will work intensively with each collaborating partner to ensure project goals are meaningful, project funding is adequate, project personnel are experienced and knowledgeable, methodological requirements can be met, and all human subjects review requirements can be satisfied. IFM will engage in ongoing review of each project's operation, through coordinated efforts with project partners.

## MANAGING AND EVALUATING THE PROJECTS

- **Timelines.** Each project will have a minimum 6-month and maximum 12-month timeline for the intervention phases. Other estimated timelines include:
  - » One year for identifying partners
  - » One year for developing project descriptions, parameters, design, and methodology
  - » Six-12 months for project operation
  - » One year to analyze and write up data
  - » One year to publish and circulate reports and submit papers for publication
- **Costs.** IFM will work with each project partner to determine the total costs and the cost-sharing percentages. A reasonable average cost estimate for direct subject fees would be \$3,000 per subject. At that level, three projects could be done, including two arms in each (functional medicine and conventional care) with 75-80 subjects in each arm. The balance of direct and indirect costs would be shared by the collaborating partners.
- **Measurable endpoints.** Pilot projects will look closely at:
  - » Efficacy (signs, symptoms, laboratory results, subject self-assessment)
  - » Costs (assessment, treatment, follow-up)
  - » Comparisons to conventional treatment cost and efficacy markers
  - » Use of novel data analysis tools from existing research and practice (e.g., Archimedes) to evaluate outcomes and costs

## DISSEMINATING THE RESULTS

- **Reports.** Confidential initial and final reports of findings will be prepared for collaborating organizations and donors.
- **Publishable papers.** Scholarly scientific papers will be prepared for submission to medical journals; most journals will not publish papers that have been published elsewhere, so the confidential reports (noted above) must be narrowly restricted in circulation.
- **Extended use:** Once scientific papers are published, the findings can be circulated widely and used to create opportunities for much larger studies to be funded and to influence the pace and breadth of adoption of functional medicine in health professions schools, by practicing clinicians, and within government healthcare delivery entities.

**TOTAL FIVE-YEAR COSTS: \$1,690,000**

### THE TOOLS OF TRANSFORMATION

*Initiatives in **Research, Education, and Collaboration** require two fundamental elements for success: knowledge and training. Tools that support the continuous development of knowledge—and the ability to turn knowledge into appropriate training for the acquisition of skills—are part of IFM’s leadership advantage. The human resources to develop the knowledge and deliver the training are available in the extended functional medicine community, representing a remarkable combination of expertise, dedication, diversity, and collaborative skills.*

#### KNOWLEDGE BASE

- **Biochemistry, physiology, genetics:** The what, where, when, why, and how of biologic dysfunction; understanding clinical applications of genomics and personalized medicine
- **Environmental influences:** Quality of air, water, food, and community; stress and trauma; toxic exposures; poverty
- **Lifestyle choices:** Diet and nutrition, exercise, social and spiritual connections
- **Clinical applications of systems biology:** Understanding complex, interconnected biologic systems
- **The evidence base:** Transforming emerging research findings into appropriate clinical interventions

#### SKILLS

- **Assessment:** Standard diagnostics **plus** the Functional Medicine Matrix™ and specialized assessment tools to find the underlying causes of disease and assess future risks and provide a predictive model for health and disease
- **Treatment:** Restoring balance to dysfunctional systems; addressing causes with roots in the mismatch between genetic heritage and lifestyle and environmental influences; and easing pain and suffering
- **Prevention:** Lifelong environmental and lifestyle strategies to minimize the vulnerabilities of genetic heritage; create resilience and vitality; strengthen organ reserve
- **Therapeutic relationship:** Integrating knowledge and intuition to achieve insight; listening to the patient’s *whole* story; empowering patient responsibility

#### TRAINING

- **Courses:** Annual International Conference, *Applying Functional Medicine in Clinical Practice*, Advanced Practice Modules, Functional Nutrition Course, online and self-paced learning
- **Books, Monographs, Webinars:** *Textbook of Functional Medicine*; monographs on depression, pain, GI; clinical nutrition books
- **Forms, Questionnaires:** Tool kit, publications appendices, website downloads
- **Certification Program:** Deeper, broader knowledge base with more extensive clinical applications

#### PARTNERS IN TRANSFORMATION: THE FUNCTIONAL MEDICINE EXTENDED COMMUNITY

- **Leaders and Experts—Education, Research, Collaboration: Public and Private**
- **Faculty—Core and Adjunct**
- **Learners—Practitioners, Patients, Students**
- **Staff—Skilled, Productive, Committed to the Mission**
- **Philanthropy—Visionary Foundations, Corporations, and Individuals**
- **Patients—For whom all of the above efforts are made and to whom all of the people involved dedicate their work**

### A COMPREHENSIVE CLINICAL MODEL FOR CHRONIC DISEASE

#### CHANGING THE WAY WE DO MEDICINE, AND THE MEDICINE WE DO

##### MEDICINE IN TRANSITION

- Medicine is in transition from a reductionist (acute-care) model to a systems model of biologic function that has emerged from the genomic revolution. Clinical practice and medical education must evolve and adapt to match the scientific paradigm shift to systems medicine.<sup>1,2</sup>
- Reductionist clinical models produce fragmented, organ-based, specialist-focused care that results in increased costs and poor outcomes.<sup>3</sup> Disastrously, primary care is a dying field<sup>4,5,6</sup> at the same time that primary care diseases are increasing at dramatic rates. We are at a moment in medical history that requires a new way of interpreting and processing data, a new operating system to successfully address our global epidemic of chronic disease.<sup>7</sup>
- A fundamental re-orientation of clinical problem solving is required, expanding the diagnostic focus from the disease-based ICD-9 classification system to include assessment of *patterns of dysfunction within complex networks of biologic systems*, which are at the root of all disease.<sup>8</sup>

##### PREVENTING AND TREATING CHRONIC DISEASE—EFFECTIVE SOLUTIONS

- Most chronic disease is preventable, and much of it is reversible, if a comprehensive, individualized approach addressing genetics, diet, nutrition, environmental exposures, stress, exercise, and psychospiritual needs is implemented through integrated clinical teams and based on emerging research.<sup>9</sup>
  - The EPIC study of 23,000 persons adhering to 4 simple behaviors (not smoking, healthy diet, exercise, and maintaining healthy weight) found that 93% of diabetes, 81% of heart attacks, 50% of strokes, and 36% of all cancers could be prevented.<sup>10</sup>
  - The INTERHEART study followed 30,000 people and found that changing lifestyle could prevent 90% of all heart disease.<sup>11</sup>
- *Functional medicine provides a practical clinical framework for understanding how the body's physiologic systems are linked together and how their function is influenced by both environment and genetics.*<sup>12</sup> Clinical medicine can and must shift to an applied systems medicine—personalized, predictive, preventive, and participatory.<sup>13</sup>
- Applied in practice, functional medicine can help reinvigorate primary care by training practitioners to prevent, treat, and often cure chronic conditions more effectively and at lower cost than the conventional medical paradigm.<sup>14</sup>

## THE INSTITUTE FOR FUNCTIONAL MEDICINE—LEADERSHIP IN EDUCATION, RESEARCH, COLLABORATION

- IFM has a reputation for excellence, integrity, and innovation; now is the time for IFM to build on that foundation to create a significantly larger national and international presence.
- We will build a scalable, modular, and robust educational platform using innovative technologies and teaching methods that can be incorporated into medical school curriculums, residencies, fellowships, and continuing medical education.
- A clear, focused plan of action—based on both visionary and pragmatic strategies—will advance functional medicine as an effective solution to the problems of our global chronic disease burden and escalating healthcare costs.
- Medicine will transform once a new generation of practitioners is trained and existing practitioners are re-trained, when we refocus research to assess whole systems versus reductionist clinical approaches, and when we forge strategic partnerships with existing public and private institutions to change practice and policy.

### References

- <sup>1</sup> Genuis SK, Genuis SJ. Exploring the continuum: medical information to effective clinical practice. Paper I: the translation of knowledge into clinical practice. *Journal of Evaluation in Clinical Practice*. 2006;12 (1): 49-62.
- <sup>2</sup> Genuis SJ, Genuis SK. Exploring the continuum: medical information to effective clinical practice. Paper II. Towards aetiology-centred clinical practice. *Journal of Evaluation in Clinical Practice*. 2006;12(1):63-75.
- <sup>3</sup> <http://www.dartmouthatlas.org>. Health Care Spending, Quality and Outcomes, February 27, 2009
- <sup>4</sup> Harris C. Primary care in medical education: The problems, the solutions. *AAMC Reporter*, March 2010. Accessed June 14, 2010 at <http://www.aamc.org/newsroom/reporter/march10/primarycare.htm>
- <sup>5</sup> Colwill JM, Cultice JM, Kruse RL. Will generalist physician supply meet demands of an increasing and aging population? *Health Affairs*. 2008;27(3):w232-w241.
- <sup>6</sup> Howell JD. Reflections on the past and future of primary care. *Health Affairs*. 2010;29(5):760-5.
- <sup>7</sup> Yach D, Hawkes C, Gould CL, Hofman KJ. The global burden of chronic diseases: Overcoming impediments to prevention and control. *JAMA*. 2004;291(21):2616-2622.
- <sup>8</sup> Hyman MA. Functional diagnostics: Redefining disease. *Altern Ther Health Med*. 2008 Jul-Aug;14(4):10-4. Review.
- <sup>9</sup> American College of Preventive Medicine. Lifestyle Medicine—Evidence Review. June 30, 2009. Available at: <http://www.acpm.org/LifestyleMedicine.htm>. Accessed September 18, 2009.
- <sup>10</sup> Ford ES, Bergmann MM, Kröger J, Schienkiewitz A, Weikert C, Boeing H. Healthy living is the best revenge: findings from the European Prospective Investigation Into Cancer and Nutrition-Potsdam study. *Arch Intern Med*. 2009 Aug 10;169(15):1355-62.
- <sup>11</sup> Yusuf S, Hawken S, Ounpuu S, Dans T, Avezum A, Lanas F, McQueen M, Budaj A, Pais P, Varigos J, Lisheng L; INTERHEART Study Investigators. Effect of potentially modifiable risk factors associated with myocardial infarction in 52 countries (the INTERHEART study): case-control study. *Lancet*. 2004;364(9438):937-52.
- <sup>12</sup> Loscalzo J, Kohane I, Barabasi AL. Human disease classification in the postgenomic era: A complex systems approach to human pathobiology. *Mol Syst Biol*. 2007;3:124
- <sup>13</sup> Snyderman R, Langheier J. Prospective health care: The second transformation of medicine. *Genome Biol*. 2006;7(2):104.
- <sup>14</sup> Hyman MA. The failure of risk factor treatment for primary prevention of chronic disease. *Altern Ther Health Med*. 2010 May-Jun;16(3):60-3.

## ABOUT IFM

### A HIGHLY CAPABLE ORGANIZATION

- **The Track Record:** IFM has functioned as a successful independent nonprofit educational organization for nearly a decade, and has a history of educating clinicians in leading edge science for nearly 20 years. Combining a strong commitment to the health of human beings everywhere with an equally powerful commitment to engaging clinicians in the emerging sciences of genomics and systems biology, IFM has led the way in articulating a new model for reversing the epidemic of chronic disease that deeply challenges 21<sup>st</sup> century medicine.
- **The Next Level:** IFM recognizes the urgent need to “scale up” current activities—the success of vital initiatives in education, research, and collaboration depends upon significant expansion and diffusion of the functional medicine knowledge base. Building upon widespread connections in academic medicine, business, and government—and inspired by steadfast support from its growing client base—IFM has developed a five-year plan to extend its reach and become one of the nation’s leading change agents in health care.

### VALUABLE ASSETS

- **Established and Growing Educational Program**
  - » **Courses:** Symposium, Applying Functional Medicine in Clinical Practice, Advanced Practice Modules
  - » **Books, Monographs, Webinars:** *Textbook of Functional Medicine*; monographs on depression, pain, GI; Clinical Nutrition textbook; *21<sup>st</sup> Century Medicine: A New Model for Medical Education and Practice*
  - » **Certification Program:** Deeper, broader knowledge base with more extensive clinical applications; validated blueprint; competency testing
  - » **Forms, Questionnaires:** Tool kit, publications appendices, website downloads
  - » **eLearning:** online and self-paced learning opportunities
  - » **Plans underway** for apprenticeships, and mentorship programs for medical and other health professions students and practicing clinicians
- **The Team:** IFM’s success can be attributed not only to having the right ideas at a time of great need, but also to the people who have built the organization and the functional medicine knowledge base over the years:
  - » Visionary founders
  - » Experienced Board of Directors
  - » Skilled and dedicated core and adjunct faculty representing a broad range of health professions
  - » Staff members with high standards of performance and productivity
  - » Energized learners—practitioners and health professions students from a variety of disciplines
- **The Organization**
  - » A nonprofit, tax-exempt, 501(c)(3) organization
  - » Accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians
  - » Current Board Chair testified before Congressional HELP Committee and Institute of Medicine
  - » Responsible management of past grants and donations
  - » Annual independent audit or review

## IFM'S BOARD CHAIR: MARK HYMAN, MD

### COMMITMENT TO EDUCATION

- Faculty member at IFM since 2001; lecturer at workshops, conferences, and seminars around the world
- Accomplished author (four times on the *New York Times* best-selling list):
  - » *Ultraprevention: The 6-Week Program That Will Make You Healthy for Life*, winner of the Books for a Better Life Award
  - » *UltraMetabolism: The Simple Plan for Automatic Weight Loss (also a PBS special)*
  - » *The UltraMind Solution (also a PBS special)*
  - » *The Blood Sugar Solution* book and companion PBS special (to be released in March 2011) will address the global epidemic of obesity, diabetes and cardiovascular disease.
- Received The American College of Nutrition *2009 Communication and Media Award* for his contribution to promoting better understanding of nutrition science
- Serves on the Board of Directors of The Center for Mind-Body Medicine, where he is also a faculty member for its *Food As Medicine* training program
- Serves on the Board of Advisors of Dr. Mehmet Oz's HealthCorps, which tackles the obesity epidemic by educating American high school students about nutrition, fitness, and mental resilience

### RESEARCH AND PUBLIC POLICY

- Will serve on the Scientific Advisory Committee for a proposed research program at Harvard Medical School, providing expertise on functional medicine (funding pending)
- Testified before the White House Commission on Complementary and Alternative Medicine
- Consulted with the Surgeon General on diabetes prevention
- Testified on functional medicine before the Senate Working Group on Health Care Reform
- Participated in the White House Forum on Prevention and Wellness in June 2009
- With Drs. Dean Ornish and Michael Roizen, Dr. Hyman helped to craft the *Take Back Your Health Act of 2009*, which sought to facilitate reimbursement of lifestyle treatment for chronic disease
- Nominated by Senator Tom Harkin, Chair of the HELP Committee, for Presidential appointment to the 25-member Advisory Group for the new National Council on Prevention, Health Promotion, and Public Health

### COLLABORATION AND LEADERSHIP

- Working with corporations and government entities, such as CIGNA and the Veterans Administration, Dr. Hyman helps to improve health outcomes and reduce costs around the world
- Recently awarded The Council on Litigation Management's *2010 Professionalism Award*, citing individuals who have demonstrated leadership by example in the highest standard of their profession
- Received IFM's 2009 *Linus Pauling Award* for Leadership in Functional Medicine

### EXCELLENCE IN CLINICAL PRACTICE

- Founder and Medical Director of The UltraWellness Center in Lenox, Massachusetts, where he directs a team of physicians, nutritionists, and nurses who utilize a comprehensive approach to health
- Previously co-Medical Director at Canyon Ranch Lenox, one of the world's leading health resorts
- As a volunteer for Partners in Health, Dr. Hyman worked on the ground immediately after the Haiti earthquake and was featured on *60 Minutes*. He continues to help rebuild the Haitian healthcare system.