Wellness in Action: Integrative Medicine Meets Public Health

Victoria Maizes, MD
Executive Director
University of Arizona Center for Integrative Medicine
Professor of Clinical Medicine, Family Medicine, and Public Health
Change all your bad habits today.
What Do You Want Your Health For?
We’ve been wrong about what our job is in medicine. We think our job is to ensure health and survival. But really it is larger than that. It is to enable well-being. And well-being is about the reasons one wishes to be alive. Those reasons matter not just at the end of life, or when disability comes, but all along the way.

Atul Gawande
MD
Integrative Medicine Defined

Healing-oriented medicine that takes account of the whole person including all aspects of lifestyle. It emphasizes the therapeutic relationship between practitioner and patient, is informed by evidence, and makes use of all appropriate therapies.
In 2013, a report on US health identified dietary factors as the single most significant risk factor for disability and premature death.

How much of a cardiologist’s curriculum is dedicated to nutrition education?

Mission

The University of Arizona Center for Integrative Medicine is leading the transformation of health care by training a new generation of health professionals and by empowering individuals and communities to optimize health and wellbeing through evidence-based, sustainable, integrative approaches.
The Integrative Medicine Curriculum

- Philosophical foundations
- Lifestyle medicine
- Systems and modalities
- Emerging topics
- Research education
- Leadership
- Personal reflection
- Clinical integration
Fellowship in Integrative Medicine

- Two-year, 1000 hour program
- Primarily taught online using faculty- mentored, interactive, evidence-based education
- Three residential weeks
  - Building community
  - Experiential learning
  - Creating a container for change

Fellowship Alumni

- 1-5 Fellows
- 6-10 Fellows
- 11-20 Fellows
- 21-30 Fellows
- 31+ Fellows

Total Alumni: 1185
International Fellowship Alumni: 92
Figure 2. Percentage of prescription drugs used in the past month, by age: United States, 2007-2008

Kaiser Family Foundation
Scaling education

Integrative Family Medicine

First comprehensive attempt to bring Integrative Medicine curriculum into the conventional training of physicians

Onset in 2004 in collaboration with UA department of family medicine residency program and five other residencies across the United States

- Elective track; training extended to 4 years
- Family medicine residency plus the UA Integrative Medicine fellowship
- >60 fellows have graduated


Integrative Family Medicine Challenges

- Limited scale – 8-10 residents per year
- Scope – 1000 hours during residency
- Content developed for mid-career learner
- Elective rather than required
- Costs - 4th year salary; fellowship tuition
Integrative Medicine in Residency (IMR)

- National model which addresses gaps in conventional medical education –
  - Integrative approaches to prevention and chronic illness management

- Distributed education: 200-hour core curriculum

- Modular flexible format with online evaluation

- Physician self-care and wellbeing


Integrative Medicine in Residency Evaluation:

- Feasibility and effectiveness of an online educational program embedded in residency
  - Medical knowledge
  - Self-Assessment re confidence
  - IMR completion
  - IMR evaluation
  - Resident well-being


IMR Research Findings

IMR vs. Control Group

Medical Knowledge

PG Y1
- IMR: 51.7%
- Control: 52.7%

GRADUATION
- IMR: 79.2%
- Control: 53.2%

IMR N=134
Control Group N=32
IMR vs. Control Group Self-Assessment at Graduation

IMM Approach to Medical Conditions

- ADHD
- IRRITABLE...
- ASTHMA
- FIBROMYALGIA
- RHEUMATOID...
- ALLERGIES
- HYPERTENSION
- OSTEOPOROSIS
- MENOPAUSE
- DIABETES...
- HYPERLIPIDEMIA
- OBESITY
- DEPRESSION
- PRENATAL CARE
- CHRONIC BACK...

P <0.001
Integrative Medicine in Residency and Integrative Medicine in Residency - Pediatrics Sites

International IMR & PIMR
Dalin Tzu Chi General Hospital, TAIWAN
University of Manitoba, Winnipeg, Manitoba, CANADA
The University of British Columbia, Victoria, CANADA
Kinderkrankenhaus Sankt Marien, Landshut, GERMANY

Medical Specialties
- Family Medicine
- Internal Medicine
- Pediatric Medicine
- Preventive Medicine
- OBGYN
- Psychiatry

Update: 11/04/2016
“If you want to get there fast – go alone. If you want to go far, go together.”

African Proverb
Foundations in Integrative Health Course

- Integrative health in primary care
- Caring for patients using an integrative lens
- Integrative health in community settings
- Provider well-being
- Reflection

www.nciph.org
Integrative Health and Lifestyle Program

1. Physical Activity/Movement
2. Nutrition
3. Relationships
4. Sleep
5. Spirituality
6. Environmental exposures
7. Resiliency
Integrative Health and Lifestyle Evaluation

- **Self-care**
  - Wellness behaviors and burnout at baseline and followup
  - Assess wellness behaviors that mitigate burnout

- **Interprofessional Development**
  - Attitudes towards other professions
  - Collaborative professional relationships

- **Utilization of Course Content in Practice**
  - Assess lifestyle and mind/body practices
Integrative Health Self Care Program

- Integrative health interactive educational and motivational tool for the public
- In development in collaboration with Institute for Healthcare Improvement
Shinrin-yoku or Forest bathing

The Daily Mile
<table>
<thead>
<tr>
<th></th>
<th>Sites with Miles</th>
<th>Kids with Miles</th>
<th>Average Kids per Site</th>
<th>Miles Run</th>
<th>Average Miles per Kid</th>
</tr>
</thead>
<tbody>
<tr>
<td>NYC</td>
<td>375</td>
<td>77,803</td>
<td>207</td>
<td>2,712,751</td>
<td>34.9</td>
</tr>
<tr>
<td>National</td>
<td>334</td>
<td>79,547</td>
<td>238</td>
<td>2,617,304</td>
<td>32.9</td>
</tr>
<tr>
<td>Total</td>
<td>709</td>
<td>157,350</td>
<td>222</td>
<td>5,330,055</td>
<td>33.9</td>
</tr>
</tbody>
</table>
New York Mighty Milers
Park Prescriptions

➢ “Drug”: Hike in your favorite park or forest
➢ Dose: 45 minutes of walking or running
➢ Directions: Monday, Wednesday, Friday & Saturday at 7 a.m.
➢ Refill: Unlimited

Girl Trek
Mindfulness in School Project
Yoga in schools
“It’s a special hearing aid. It filters out criticism and amplifies compliments.”
Growing the Outdoor Classroom
Growing the Outdoor Classroom
Rooftop garden - students from pre-K through 8th grade - experience the benefits and pleasures of growing and eating fresh, whole, sustainable foods.

Grow to Learn goal: Sustainable learning garden for Every New York City public school.

http://www.5thstreetfarm.org
Wholesome Wave: Creates partnership-based programs that enable underserved consumers to make healthier food choices by increasing affordable access to healthy, locally and regionally grown foods

- Double value coupons
- Fruit and Vegetable Prescription Program
WHO report 2016

25% of deaths attributable to environmental factors

WARNING: Soda, sports & juice drinks can lead to childhood obesity and type 2 diabetes.

Water: The healthiest choice
Flint, Michigan crisis

- The city changed its water source from the Detroit system to the Flint River in April, 2014
- September 2015, a local health center found the proportion of children with elevated blood lead levels had nearly doubled since the switch
- The Center for Disease Control and Prevention shows that >40% of states that reported lead test results in 2014 have higher rates of lead poisoning among
New York – Mount Sinai

Children’s Environmental Health Center

“It is a scientific fact, that the occasional contemplation of natural scenes of an impressive character… is favorable to the health and vigor of men and especially to the health and vigor of their intellect.”

Frederick Law Olmstead
circa 1865
GOAL: Unobtrusive Real-Time Simultaneous Human Performance & Environmental Attributes

- Airflow
- Air chemistry
- Temperature
- Humidity
- Architecture
- Noise, Sounds
- Light, Views
- Materials, Greenery
- Psychosocial
- Behavior, Activity
- Stress load
- Genome, Proteome, Metabolome

- Atmospheric, Chemical
- Visible, Audible
- Social, Individual
Taylor S. Biobehavioral Responses to Stress in Females: Tend-and-Befriend, Not Fight or Flight.
*Psychological Review* 2000, Vol. 107, No.3 411-419
Getting a Healthy Night’s Rest

- Relaxation training
  - “letting go into sleep”
- Sleep hygiene
  - Limit caffeine
  - Reduce light exposure
- Cognitive therapy
  - Change beliefs and habits to promote sleep

“A compassionate city is an uncomfortable city! A city that is uncomfortable when anyone is homeless or hungry. Uncomfortable if every child isn’t loved and given rich opportunities to grow and thrive. Uncomfortable when as a community we don’t treat our neighbors as we would wish to be treated.” Karen Armstrong
The Interfaith Center of New York (ICNY) works to overcome prejudice, violence, and misunderstanding by activating the power of the city’s grassroots religious and civic leaders and their communities.
“If the sight of the blue skies fills you with joy, if a blade of grass springing up in the fields has power to move you, if the simple things in nature have a message you understand, rejoice, for your soul is alive.”

Eleanora Duse
I AM GRATEFUL FOR

COMMUNITY
RELATIONSHIPS
ART MUSIC
PASSION
CREATIVITY
MOTHER EARTH
CLEAN AIR
FAMILY, FRIENDS
HEALTH, SUN
KIRA, SISTERS
AWESOME PARENTS
WORK, REST, PLAY
FOOD, MEDICINE
CLEAN WATER
SCHOOLS
TEACHERS
MEMORIES
SUNRISE, SUNSET
BUTTERFLIES, BIRDS
HEALING
HEAVEN, MIND, SOUL
MY BODY
MY MIND, MY SPIRITS
KINDRED SPIRITS
FLOWERS, HERBS
HONEY, FRUIT
PLANTS, VEGGIES, FLYING, SONGS
LAUGHTER
POSITIVE THOUGHTS, LIGHTS, BEAUTIES
HAPPINESS, HUNGER, LAUGHTER
SILENCE
GRACE, SPIRIT, GOD, CREATIVITY
HELP, MOTHER, TRUST, WISDOM, FAITH, MIRACLES
CHARITY, COMPASSION, RESPECT
ACOUSTIC, SONGS, MYPACE, NAPS, QUTER
NATURE, NATURE, NATURE
COUNTRY, MUSIC, ART, SMELL, TASTE
INNOCENCE, WISDOM, AUTOBIOGRAPHY, MEMOIRS, OCEAN
WISDOM, LIFEXPERIENCE, LANGUAGE
DUTY, ABILITIES, FOCUS, DETERMINATION, SYMBOLS
VISION, COMMUNICATION, LANGUAGES, SYMBOLS
BIRTHING, SOIL, WATER, STRENGTH, RENEWAL
MIND, RAIN, MEDITATION, YOGA
HUGS, UNCONDITIONAL LOVE
ROOFTOP, OUR HEAD, CLOTHING, BED
QUALITY, MORNINGS, ACCEPTANCE, GIVING, SUPPORT
TECLAP, EARTH, HOTEL, TECHNOLOGY, FUN, NAPS, QUTER
HERITAGE, ANIMALS, FARMS
WISDOM, WISDOM, WISDOM
Resilience: the ability to bounce back when faced with stress or pressure.
Building resilience

- Care for your physical, emotional, and intellectual well-being
- Nurture supportive relationships that create love and trust, provide role models and offer encouragement and reassurance
- Cultivate a positive view of yourself and confidence in your strengths and abilities
  - Make realistic plans and take steps to carry them out
  - Build skills in communication and problem solving
NCIPH: Dispositional Resiliency Scale Hardiness
N=785

Number of Participants

<table>
<thead>
<tr>
<th>Category</th>
<th>Pre-test</th>
<th>Posttest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very low</td>
<td>31</td>
<td>19</td>
</tr>
<tr>
<td>Low</td>
<td>122</td>
<td>100</td>
</tr>
<tr>
<td>Average</td>
<td>351</td>
<td>302</td>
</tr>
<tr>
<td>High</td>
<td>230</td>
<td>272</td>
</tr>
<tr>
<td>Very high</td>
<td>51</td>
<td>92</td>
</tr>
</tbody>
</table>

p < .001
Cost Effectiveness
Diabetes Prevention Program

Multisite study with 3,234 participants – all overweight with pre-diabetes

GOAL: explore whether diet + exercise or Metformin could prevent or delay the onset of type 2 diabetes

Three groups:

1. Intensive lifestyle modification program
   a. Lose 7% body weight
   b. healthy low-calorie, low-fat diet
   c. 30 minutes of physical activity 5 days a week

2. Standard lifestyle recommendations plus
   Metformin

3. Standard lifestyle plus placebo twice daily

Diabetes Prevention Program

- Lifestyle reduced risk of developing diabetes by 58% (If you were over 60 reduced risk by 71%)
- Metformin reduced risk of developing diabetes by 31%
- Trial ended 1 year early because results were so compelling
Moving from efficacy to effectiveness:
Diabetes Prevention Program in a collaboration with the Y: $1476 → $205 per patient

- **Intervention Group:**
  - 6% drop in weight
  - Cholesterol dropped 22mg/dL

- **Control Group:**
  - 2% drop in weight
  - Cholesterol rose 6 mg/dL

- Differences sustained after 28 months

Partnerships

- 2009 partnership between the Y and United Health Insurance
  - Y Program scaled to 43 states
- Diabetes Prevention Act of 2009 – later incorporated into Affordable Care Act
- 2012 Center for Medicare and Medicaid Innovation granted the Y $12 million for cost effectiveness study
  - Estimated $2,650 in savings per participant over 15 months
- March 2016: Medicare announcement that it will pay for lifestyle interventions to prevent type 2 diabetes under Affordable Care Act
What Do You Want Your Health For?
What might You be willing to commit to?
Thanks to:

- Faculty and staff of the University of Arizona Center for Integrative Medicine
- Many wonderful collaborators from the University of Arizona, the Tucson community and across the country
- The Lovell Foundation, the Weil Foundation, Blythe Brenden-Mann foundation, and many individual generous philanthropists