Strategic Healthcare Landscape:
Role of Integrative Medicine

Victor J Dzau, MD
President, National Academy of Medicine

February 25, 2016
Integrative Healthcare Symposium
The Health World is Changing Rapidly

NCDs
Aging
Health Disparities
Emerging & Re-emerging Infections

Urbanization
Climate Change
Science & Technology & Data

Globalization
Emerging Infectious outbreaks
Democratization of Health
Demographic Changes

United Nations Population Division, 2011
World industry outlook: Healthcare and pharmaceuticals, The Economist Intelligence Unit, May 2014
Unfortunately, **access** to health care services is severely limited:

- Many lack access to basic services
- Poor access leads to higher mortality from treatable diseases

**Quality** is an enduring challenge

- Basic standards of medical care a challenge in many developing countries

The **cost** of delivering health care is unsustainable

- Unsustainable for countries with national healthcare coverage
- Cost of care is catastrophic for families in countries without strong insurance coverage
Healthcare Needs Reform/Transformation

• Universal Health Coverage
• Quality of care
• New models of care
• Integrative Medicine
• Prevention & Health Promotion
• Personalized & Precision Medicine
Universal Health Coverage

Efforts toward universal health coverage:

• Post-2015 UN Development Agenda
• In 2014, more than 500 leading health and development organizations launched a coalition to accelerate access to universal health coverage
IOM Work on Quality

Health system should have six goals:

1. Safety
2. Effectiveness
3. Patient-centeredness
4. Timeliness
5. Efficiency
6. Equity
Global Health Reform

• The role of government, as payor, regulator, and market-shaper, is growing.
• Many governments are introducing broad reforms to health care systems
  • US
  • China
  • India
  • South Africa
  • Mexico
  • Rwanda
United States

Patient Protection and Affordable Care Act (2010)
- Expanded Medicaid coverage and introduced mandatory health insurance in an effort to increase coverage and slow the rise in health care costs
- Increased coverage
  - 17.6 million: Number of Americans with no prior insurance who were newly insured between Sept 2013 and March 2015
  - 11.7 million: Number of people covered through state and federal marketplace
- Value-based purchasing
- Care Continuum
- Population Health
- Prevention
- Health IT, Data Transparency
ACA Payment Incentives

- Purchasers have begun tying payment incentives to quality measures
  - Penalties
  - Rewards
- CMS began aligning payment policies to spur quality improvement in 2003, a practice recommended in Crossing the Quality Chasm
- Pay for Performance
- Well established among commercial payers
- ACA: Quality is key goal
  - Medicare’s Hospital Readmissions Reduction Program
  - Accountable Care Organizations
  - Hospital Value-Based Purchasing Program
  - Medicare Physician Quality Reporting System
  - Medicare Advantage plan bonuses
Hospital Acquired Conditions 2010-2014

- Interim estimates for 2014 show a sustained 17 percent decline in hospital-acquired conditions (HACs) since 2010
- A cumulative total of **2.1 million fewer HACs** were experienced by hospital patients over the 4 years
- The measured interim rate for 2014 held steady from 2013 at 121 HACs per 1,000 discharges, down from 145 in 2010
- Nearly 87,000 fewer patients died in the hospital as a result of the reduction in HACs and that approximately $19.8 billion in health care costs were saved from 2010 to 2014

### Adverse Drug Events

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Need for Earlier Intervention

Development of Disease

- Baseline Risk
- Earliest Molecular Detection
- Earliest Clinical Detection
- Typical Current Intervention

Personalized Health Planning
- Quantify Baseline Risk
- Monitor Progression
- Refine Risk Prediction
- Define Disease
- Monitor
- Personalize Therapy

Personalized Medicine Tools

Slide modified from Ralph Snyderman
Health care system must change.

Needs:

• Disease ‡ Health and Wellness
• Treating organs ‡ Treating the whole person
• High-tech therapies for disease treatment ‡ High-touch to promote health behaviors
• Hospital-based ‡ Community-based
• Personalized & precise
• Patient-Focused
• Democratized
National Academy of Medicine:
Vital Directions for Health & Healthcare

- Integrated healthcare, primary care, public & population health
- Patient engagement & empowerment, democratizing of health
- Importance of information systems-connected EHR, clinical decisions, clinical work flows, finances, patient & community engagement, health intelligence & innovation
- Innovation and technology as driver
- Personalized & precision medicine
Goals for Healthcare & Health

• Beyond addressing Healthcare: Improving Health
  – Emphasis on health of the population and improving health status
    • Early detection
    • Early intervention
    • Prevention
    • Wellness
Chronic Diseases

• Prevention and treatment - integrated care
• Health promotion and engagement
• Social, economic and behavioral
• Technology & Data
• Legislation & regulation
Key areas to develop

• Public health & care delivery
• Integrative Medicine
• Precision Medicine
Integrate public health & health care delivery

Core principles for successful integration:

- A shared goal of population health improvement
- Community engagement in defining and addressing population health needs
- Aligned leadership that
  - bridges disciplines, programs, and jurisdictions to reduce fragmentation and foster continuity,
  - clarifies roles and ensures accountability,
  - develops and supports appropriate incentives, and
  - has the capacity to manage change
- Sustainability, key to which is the establishment of a shared infrastructure and building for enduring value and impact
- Sharing and collaborative use of data and analysis
Geographic Information System (GIS)

- A set of tools for managing, visualizing, exploring, querying, editing, and analysing information linked to geographic locations.

- Displays data as maps, tables, and charts so that health systems and communities are enabled to jointly view data.

- The use of GIS Mapping supports work to monitor population health, develop new care models, improve priority setting and decision making, and tailor public health interventions.
Geospatial Mapping

No doctors’ offices in neighborhood with most births
Technology Innovation: Health in the Digital Age

- **Electronic health records (EHRs)** – drive a learning health system
  - aggregate the information rich environment which includes clinical, administrative, claims, and research data; leverage this data, and use it to inform clinical decision making
- **Biosensors** – “biological sensor”
- **Telemedicine/remote monitoring** - use of technology to provide health care at a distance
- **mHealth** – software applications on mobile devices designed to support medicine and health
- **Diagnostic devices** - Medical devices that enable early detection and quick diagnosis
- **Big data and analytics**
Integrative Medicine

- Integrative medicine puts the patient at the center and addresses the full range of physical, emotional, mental, social, spiritual and environmental influences that affect health.

- Integrative medicine is an inclusive approach. It combines the best of Western scientific medicine with an openness to proven complementary therapies to address the whole person -- body, mind, spirit, and community.

- Integrative medicine not only treats disease but has a distinct focus on health optimization.
The Approach – Integrative Medicine

• Patient Centered
• Holistic
• Comprehensive
• Whole Person
• Addressing Issues of Mind, Body and Spirit
The Evidence - Integrative Medicine

• Proven efficacy and cost-effectiveness associated with:
  – Heart Disease
  – Cancer
  – Diabetes
  – Depression
IOM Summit on Integrative Medicine and the Health of the Public

Themes

• Life course perspective
  – Personal, predictive, preventive, and participatory

• Must ensure that the full spectrum of prevention opportunities—clinical, behavioral, social, and environmental—are included in the care delivery process.

• Care process is a team activity
  – employ professionals with a wide spectrum of expertise and skills and diverse, interdisciplinary education and training in a set of core competencies

• Seamless integration of the care processes, across caregivers and across institutions
IOM Summit on Integrative Medicine and the Health of the Public

Needs:
• Research
• Practice
• Education
• Policy
Professional Training

• Integrative Health Coach Professional Training
• Mindfulness Training for Professionals
• Powerful Conversations in Healthcare
• Therapeutic Yoga for Seniors
• Yoga of Awareness for Cancer
• Leading Patients in Writing for Health
• Leadership Program in Integrative Medicine (Duke- Bravewell)
Research Mission

- **Assess the effectiveness** of integrative, personalized models of care (especially cost-analysis)
- **Evaluate efficacy** of model components when possible or strategic for funding (e.g., mindfulness approach to change eating behavior, IHC)
- **Collaborate** with basic scientists to develop biological correlates of IM clinical outcomes and explore potential mechanisms of action (in effectiveness and efficacy studies)
Weil Foundation

We believe the Foundation can have the greatest impact by focusing its funding on a single well-defined strategy.

139 GRANTS
23 STATES
2000 PHYSICIANS

AWARDED OVER $5 Million TO INTEGRATIVE MEDICINE PROGRAMS


The directors currently choose to focus Foundation funding on the reform of medical education.
Cochrane Complementary Medicine

• International group of individuals dedicated to facilitating the production of systematic reviews of randomized clinical trials in areas such as acupuncture, massage, chiropractic, herbal medicine, homeopathy and mind-body therapy
• Established in 1996 and based at the University of Maryland Center for Integrative Medicine
Consortium Growth
Current Members

Albert Einstein/Yeshiva University
Allina Health Systems
Aurora Health Care
Boston University
Cleveland Clinic
Columbia University
Duke University
Georgetown University
George Washington University
Harvard Medical School
Johns Hopkins University
Mayo Clinic
McMaster University, Ontario
MD Anderson
Mount Sinai Medical Center
Northwestern University
Ohio State University
Oregon Health & Science University
Rutgers New Jersey Medical School
Scripps Health
Stanford University
Sutter Health Systems
Tecnologico de Monterrey
Temple University
Texas Tech University
Thomas Jefferson University
Tufts University
Universidad Autónoma de Guadalajara
University of Alberta
University of Arizona
University of Calgary
University of California, Irvine
University of California, Los Angeles
University of California, San Diego
University of California, San Francisco
University of Chicago
University of Cincinnati College of Medicine
University of Colorado at Denver
University of Connecticut
Univ. of Hawaii at Manoa
University of Kansas
University of Kentucky
University of Maryland
University of Massachusetts
University of Miami
University of Michigan
University of Minnesota
University of New Mexico
University of North Carolina, Chapel Hill
University of Pennsylvania
University of PA, Hershey
University of Pittsburgh
University of Southern California
University of Texas, MB
University of Vermont
University of Washington
University of Wisconsin, Madison
Vanderbilt University
Wake Forest University
Yale University
Leadership & Education Program for Students in Integrative Medicine

• Program of the Academic Consortium for Integrative Medicine and Health

• Mission is to enhance the leadership skills and knowledge base of future physician leaders in Integrative Medicine
Congress changed NCCAM’s name to NCCIH

- In 1992, the OAM was established in the Office of the Director of NIH.
- In 1998, NCCAM was established by Congress, elevating OAM to the status of an NIH center.

- As part of an omnibus budget measure signed by President Obama in December 2014, Congress has changed the name of NCCAM to the National Center for Complementary and Integrative Health, or NCCIH.
White House Commission on Complementary and Alternative Medicine Policy

• 20 Presidentially-appointed members, was established by Executive Order No. 13147 in March 2000 with the goal of providing the President with recommendations to ensure public policy maximizes the potential benefits of complementary and alternative medicine (CAM) to all citizens

• Recommendations focused on support for research, development and dissemination of information about CAM, and ensuring the safety of CAM products are relevant to dietary supplements.
National Center for Integrative Primary Healthcare

• Created in 2014 by The University of Arizona Center for Integrative Medicine (AzCIM) and the Academic Consortium for Integrative Medicine & Health (The Consortium) in cooperation with the Health Resources and Services Administration (HRSA)

• The purpose of the NCIPHH is to advance the incorporation of competency- and evidence-based integrative health (IH) curricula and best practices into primary care education and practice.

• Primary goal of the NCIPHH is to develop a core set of integrative healthcare (IH) competencies and educational programs that will span the interprofessional primary care training and practice spectra
NCIPH Competencies for Primary Care Professionals

1. Practice patient-centered and relationship-based care.

2. Obtain a comprehensive health history that includes mind-body-spirit, nutrition, and the use of conventional, complementary, and integrative therapies and disciplines.

3. Collaborate with individuals and families to develop a personalized plan of care to promote health and wellbeing that incorporates integrative approaches including lifestyle counseling and the use of mind-body strategies.

4. Demonstrate skills in utilizing the evidence as it pertains to IH.

5. Demonstrate knowledge about the major conventional, complementary, and integrative health professions.

6. Facilitate behavior change in individuals, families, and communities.

7. Work effectively as a member of an interprofessional team.

8. Engage in personal behaviors and self-care practice that promote optimal health and wellbeing.

9. Incorporate IH into community settings and into the healthcare system at large.

10. Incorporate ethical standards of practice into all interactions with individuals, organizations, and communities.
Policy Issues in Integrative Medicine

• Evidence base practice & guidelines
• Training the workforce
• Integrating IM into care delivery system
• Reimbursement
• Research - generating evidence
Payment of IM Services

Reimbursement varies among countries

- CAM therapies are recognized but not fully integrated in the national health system, e.g.,
  - US
  - UK
  - Germany
  - Finland
- CAM therapies are fully integrated into the national health system, e.g.,
  - China
  - Korea
  - Japan
Creating Value: The Promise of Personalized Medicine

- Healthcare delivery systems must put patients at the center and figure out how to accurately deliver preventive care, diagnose early, and offer targeted treatments.
- The promise of personalized medicine is consistent with this approach.
IOM Work on Precision Medicine
US Precision Medicine Initiative

To enable a new era of medicine through research, technology, and policies that empower patients, researchers, and providers to work together toward development of individualized treatments.
US Precision Medicine Initiative

Objectives of the initiative:

• More and better treatments for cancer
• Creation of a voluntary national research cohort
• Commitment to protecting privacy
• Regulatory modernization
• Public-private partnerships
Aligning incentives to fulfil the promise of personalised medicine

Victor J Dzau, Geoffrey S Ginsburg, Karen Van Nuys, David Agus, Dana Goldman

Personalised medicine has generated global policy interest in the past few years. In 2012, the European Union established the European Alliance for Personalised Medicine with the aim to accelerate the development, delivery, and uptake of personalised health care, broadly the Centers for Medicare and Medicaid Services, National Institutes of Health, and the MacArthur Foundation, and has been used to assess the long-term consequences of medical innovation in many settings, including cardiovascular disease, diabetes, cancer, and obesity.
Lancet: The Promise of Personalized Medicine

- The full promise of personalized and precision medicine extends beyond targeting therapies for patients who are already ill.
- Enable prevention by identifying individuals at risk of disease.

*Figure:* Value of health from hypothetical personalised and precision medicine prevention innovation at two levels of incidence reduction in six diseases in the USA ($ billions).
Precision Medicine

- Integration of technology with healthcare & health
- Data sharing, data ownership, data security
- Regulation
- Cost
Global Healthcare

- Provide better care to all at lower cost
  - Meet the triple aim of health care: quality, cost, access
  - In part, this will mean strengthening primary care and public health
  - Reduce health disparities

- Address the social determinants of health

- Need to move health care from:
  - Disease ‡ Health and Wellness
  - Fragmentation → Integration
  - Treating organs ‡ Treating the whole person
  - High-tech therapies for disease treatment ‡ High-touch to promote health behaviors
  - Hospital-based ‡ Community-based
  - Patient-Focused
  - Democratized

- Integrative Medicine
- Personalized & Precision Medicine
Appendix
HHS
Better Care. Healthier People. Smarter Spending

From current FFS to FFS linked to quality to APM to population based payment

<table>
<thead>
<tr>
<th>Payment Taxonomy Framework</th>
<th>Category 1: Fee for Service - No Link to Quality</th>
<th>Category 2: Fee for Service - Link to Quality</th>
<th>Category 3: Alternative Payment Models Built on Fee-for-Service Architecture</th>
<th>Category 4: Population-Based Payment</th>
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<tr>
<td>Medicare FFS</td>
<td>Limited in Medicare fee-for-service</td>
<td>Hospital value-based purchasing</td>
<td>Accountable care organizations</td>
<td>Eligible Pioneer accountable care organizations in years 3-5</td>
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<td>Majority of Medicare payments now are linked to quality</td>
<td>Physician Value-Based Modifier</td>
<td>Medical homes</td>
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<td>Readmissions/Hospital Acquired Condition Reduction Program</td>
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HHS Value-Based Payment Goals

- **Alternative payment models (Categories 3-4)**
- **FFS linked to quality (Categories 2-4)**
- **All Medicare FFS (Categories 1-4)**

**Historical Performance**
- 2011: 0% Alternative, 68% FFS linked, 32% All Medicare
- 2014: 22% Alternative, 78% FFS linked, 0% All Medicare
- 2016: 30% Alternative, 70% FFS linked, 10% All Medicare
- 2018: 50% Alternative, 50% FFS linked, 0% All Medicare

**Goals**
- 2018: 90% Alternative, 90% FFS linked, 0% All Medicare
HHS
Better Care. Healthier People. Smarter Spending

From current FFS to FFS linked to quality to APM to population based payment

Goals:
• By 2016, 30% alternate payment models, 85% FFS linked to quality & value
• By 2018, 50% alternate payment models, 90% FFS linked to quality & value.
Patient Protection and Affordable Care Act (2010- ): Key Quality Provisions

- Created a National Quality Strategy
- Established a Center for Quality Improvement and Patient Safety
- Established the Patient Centered Outcomes Institute (PCORI)
- Created the Center for Medicare and Medicaid Innovation
- Established a mandatory physician quality reporting program
- Requires public reporting on the quality of health insurance plans
- Requires additional reporting of patient data related to race, ethnicity, sex, and language
- Authorized numerous new payment and delivery models
Hospital Acquired Conditions 2010-2014

- Interim estimates for 2014 show a sustained 17 percent decline in hospital-acquired conditions (HACs) since 2010
- A cumulative total of **2.1 million fewer HACs** were experienced by hospital patients over the 4 years
- The measured interim rate for 2014 held steady from 2013 at 121 HACs per 1,000 discharges, down from 145 in 2010
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Hospital Acquired Conditions 2010-2014

- Many areas of harm dropping dramatically (2011 to 2014 for these leading indicators)

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NATIONAL ACADEMY OF MEDICINE
The WHO has defined three types of health system to describe the degree to which TM/CAM is officially recognized part of the national health system:

- **Integrative systems**
  - TM/CAM is officially recognized and incorporated into all areas of health care provision.

- **Inclusive systems**
  - recognize TM/CAM, but has not yet fully integrated it into all aspects of health care.

- **Tolerant systems**
  - the national health care system is based entirely on biomedicine, but some TM/CAM practices are tolerated by law.