The Unique Opportunity & Role Health Delivery Systems & Employers Can Play in Promoting Population Health & Building Cultures of Health

Carol Dietrich Memorial Symposium
Butler PA
November 2018

Ray Fabius MD
HealthNEXT Co-founder
President
Ray Fabius MD
Honored to be With You Today

- Over 25 years of medical management experience with Thomson Reuters, GE, Walgreens, Aetna, Cigna and others
- Served as front line primary care physician for over a decade
- Published articles, book chapters and three books
- Adjunct Faculty – Harvard, Jefferson, ACOEM
- Distinguished Fellow & Faculty Member of American Association of Physician Leadership
- Co-founder of HealthNEXT
  - Emerging Leader in building organizational cultures of health
Butler Health System

Mission, Vision & Values

• BHS Mission - Butler Health System is privileged to be a healing presence in the communities we serve. We exist to make a positive difference in the lives of people by providing compassionate, high-quality care and comfort and inspiring health and wellbeing.

• BHS Vision - Butler Health System will be recognized as the premier provider of high value, integrated care to the region. We will achieve this through an unwavering commitment to the individual and organizational excellence and technological innovation.

• BHS Values
  • Compassion - We celebrate life, dignity and the value of human relationships
  • Trust - We are candid and honest
  • Integrity - We take responsibility for fulfilling the commitments that we make
  • Innovation - We seek opportunities to achieve the best possible outcomes for the people in our care
  • Quality - We consistently strive for excellence
  • Respect - We treat others as we would want to be treated
  • Service - We reach out to meet the needs of others
  • Stewardship - We cultivate the assets with which we have been entrusted
The Unique Opportunity & Role A Medical Center Can Play in Promoting Population Health & Building Cultures of Health

- **Employer** – save on health care costs and improve the performance of your workforce
- **Role Model** - for health profession, students and the community
- **Health Care Delivery** – align efforts with community payer and employers
- **Educator** – teach the emerging science of Population Health & Building Cultures of Health & their connection to performance / wealth
- **Researcher** – dedicate resources to create a living laboratory – study best practices and innovations
Here are my CME learning objectives

• Understand Population Health and the Care Continuum with a focus on the Social Determinants of Health & Wellbeing

• Provide Insight into the research on building “cultures of health” with a focus on the workforce and community

• Demonstrate that there is a connection between the health of a population and the wealth it generates
Understand Population Health And The Care Continuum With A Focus On The Social Determinants Of Health & Wellbeing
What is Population Health?

Health Interventions

Determinants of Health

Health Status Improvement
CREATE TAXES TO IMPROVE POPULATION HEALTH
POPULATION HEALTH

Examples of Interventions

CREATE LAWS TO IMPROVE POPULATION HEALTH
POPULATION HEALTH

Examples of Interventions

CREATE MEDICAL BREAKTHROUGHS TO IMPROVE POPULATION HEALTH
POPULATION HEALTH

Examples of Interventions

CREATE SAFER WORKPLACES TO IMPROVE POPULATION HEALTH

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POPULATION HEALTH

Examples of Interventions

CREATE SAFER HOSPITALS TO IMPROVE POPULATION HEALTH
POPULATION HEALTH DETERMINANTS

- **Intrapersonal** – knowledge, attitude, education, risks, access
- **Social** – peers, family, friends
- **Employment** – co-workers, policies, workplace, security, income, purpose
- **Community** – environment, rules, regulations
- **Culture** – norms, values, beliefs

Stay well where you live, work and play
HEALTH DETERMINANTS

- **Physical environment** – safe water and clean air, healthy workplaces, safe houses, communities and roads all contribute to good health.

- **Education** – low education levels are linked with poor health, more stress and lower self-confidence.

- **Employment and working conditions** – people in employment are healthier, particularly those who have more control over their working conditions.

- **Income and social status** - higher income and social status are linked to better health. The greater the gap between the richest and poorest people, the greater the differences in health.
HEALTH DETERMINANTS

• Social support networks – greater support from families, friends and communities is linked to better health.

• Culture - customs and traditions, and the beliefs of the family and community all affect health.

• Genetics - inheritance plays a part in determining lifespan, healthiness and the likelihood of developing certain illnesses.

• Personal behavior and coping skills – balanced eating, keeping active, smoking, drinking, and how we deal with life’s stresses and challenges all affect health.

• Health services - access and use of services that prevent and treat disease influences health

• Gender - Men and women suffer from different types of diseases at different
Lifestyle: *Strongest Determinant of Mortality*

- **Lifestyle**: 51%
- **Heredity**: 20%
- **Environment**: 19%
- **Health Services**: 10%

**Health Behaviors: The Main Mortality Risk Factors in U.S.**

- Lifestyle
- Heredity
- Environment
- Health Services

The Centers for Disease Control and Prevention (CDC) estimates…

- 80% of heart disease and stroke
- 80% of type 2 diabetes
- 40% of cancer

…could be prevented if only Americans were to do three things:

- Stop smoking
- Start eating healthy
- Get in shape
- Drink in moderation
So How Much Do We Spend on Prevention?

_Very Little = 3%_
Lifestyle: Actual Causes of Death in the U.S

4 Behaviors cause nearly 40% of all deaths in the U.S. (year 2000)

- Tobacco
- Poor diet and physical inactivity
- Alcohol
- Illicit Drug use
- Microbial agents
- Toxic agents
- Motor vehicle
- Firearms
- Sexual behavior

Optimal Lifestyle Metric (OLM)

- Being physically active
- Not smoking
- Eating 5 fruits and vegetables each day
- Drinking alcohol in moderation
The “OLM Universe”

<table>
<thead>
<tr>
<th>Diet OLM Flag</th>
<th>Tobacco OLM Flag</th>
<th>Alcohol OLM Flag</th>
<th>Physical Activity OLM Flag</th>
<th>Number (%)</th>
</tr>
</thead>
<tbody>
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<td>0</td>
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<td>1288 (0.26%)</td>
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<td>2363 (0.47%)</td>
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<td>1</td>
<td>1</td>
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<td>5783 (1.16%)</td>
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<td>1</td>
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<td>90656 (18.1%)</td>
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<td>1</td>
<td>253444 (51.0%)</td>
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<td>0</td>
<td>0</td>
<td>40 (0.01%)</td>
</tr>
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<td>0</td>
<td>0</td>
<td>1</td>
<td>205 (0.04%)</td>
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<td>1</td>
<td>0</td>
<td>661 (0.13%)</td>
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<td>4071 (0.81%)</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>188 (0.04%)</td>
</tr>
<tr>
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<td>1</td>
<td>0</td>
<td>1</td>
<td>1386 (0.28%)</td>
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<td>1</td>
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<td>1</td>
<td>0</td>
<td>10674 (2.13%)</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>65026 (13.0%)</td>
</tr>
</tbody>
</table>

- <0.5% meet zero OLM component
- 5% meets one OLM component
- 27.5% meets two OLM components
- 54% meets three OLM components
- 13% meets four OLM components
- 83.6% does not meet the diet OLM component (5 F&V daily)

N = 500,344
Data based on self-reported health assessment questions

Adherence to OLM and New Disease

Difference in 2-year incidence of new disease between people who adhere to OLM 0 or 1 and OLM 3 or 4 (%)

- High Blood Pressure: -15
- Cholesterol: -17
- Cancer: -24
- Back Pain: -43
- Heart Disease: -45
- Diabetes: -66

The Hidden Social Influence
EVERYTHING IS CONTAGIOUS!


Connected: The Amazing Power of Social Networks and How They Shape Our Lives
Zip code better predictor of health than genetic code

August 4, 2014 — In St. Louis, Missouri, Delmar Boulevard marks a sharp dividing line between the poor, predominately African American neighborhood to the north and a more affluent, largely white neighborhood to the south. Education and health also follow the “Delmar Divide,” with residents to the north less likely to have a bachelor’s degree and more likely to have heart disease or cancer.

Explore HSPH research by topic.

Nature Versus Nurture
Race & community have significant influence on Health
Spirit as a Social Determinant

*Do Not Underestimate the Impact of Faith*

Regular Attendance at a place of worship correlates with up to 7 years of additional quality life years
THE EVOLUTION OF MEDICAL MANAGEMENT

Leading to Cultures of Health & Well-being

Utilization Management
Disease Management
Population Health
Health & Productivity
Culture of Health
Culture of Well-being

GAME CHANGER
Creating a safe and healthy workplace is part of the corporate culture

BEYOND HEALTH & WELLNESS
Creating a thriving workforce is an essential part of the corporate culture
What is Population Health?

Managing Care Across the Continuum

Moving the Population Toward Wellness
Insidious Progression of Disease:
SMOKING & ACUTE ILLNESS LEADS TO CHRONIC & CATASTROPHIC ILLNESS

normal → bronchitis

cancer ← emphysema

20-Year Lag Time Between Smoking and Lung Cancer

Cigarette Consumption (men)

Cigarettes Smoked Per Person Per Year

Lung Cancer Deaths (Per 100,000 People)

Year

1900 1920 1940 1960 1980
WHERE SHOULD WE INTERVENE?
INSIDIOUS PROGRESSION OF DISEASE:
ANXIOUS & STRESSED, Leads to Chronic and Catastrophic Illness

normal stress ➔ burnout ➔ suicidal

The Stress Response Curve
Not Enough Stress Unmotivated
Optimal Stress Eustress
Too Much Stress Distress

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WHAT’S THE POINT
INSIDIOUS PROGRESSION OF DISEASE:
Alcohol Consumption in Excess leads to Chronic and Catastrophic Illness

Occasion Consumption → Binge drinking

Cirrhosis ← Alcoholism

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## KNOW WHAT ILLS YOUR POPULATION

### Comprehensive Population Health Data Review

<table>
<thead>
<tr>
<th>Risk Factors</th>
<th>Episodes of Care</th>
<th>Rx Medicines</th>
<th>Chronic Illness</th>
<th>High Cost</th>
<th>ST Disability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sedentary</td>
<td>Pregnancy</td>
<td>Behavioral</td>
<td>Low Back</td>
<td>Cancer</td>
<td>Behavioral</td>
</tr>
<tr>
<td>53%</td>
<td>Newborns</td>
<td>Mental</td>
<td>7%</td>
<td>Heart</td>
<td>Mental</td>
</tr>
<tr>
<td>Stress</td>
<td>Muscular</td>
<td>Auto</td>
<td>High BP</td>
<td>Circulation</td>
<td>Pregnancy</td>
</tr>
<tr>
<td>40%</td>
<td>Joints</td>
<td>Immune</td>
<td>6%</td>
<td>Kidney</td>
<td>Auto</td>
</tr>
<tr>
<td>Obesity</td>
<td>Diabetes</td>
<td>Gastro</td>
<td>Depression</td>
<td>Dialysis</td>
<td>Immune</td>
</tr>
<tr>
<td>33%</td>
<td>Cancer</td>
<td>Intestinal</td>
<td>4%</td>
<td>Transplant</td>
<td>Respiratory</td>
</tr>
<tr>
<td>Overweight</td>
<td>Heart</td>
<td>Diabetes</td>
<td>Asthma</td>
<td></td>
<td>Gastro</td>
</tr>
<tr>
<td>32%</td>
<td>Circulation</td>
<td>Infertility</td>
<td>3%</td>
<td></td>
<td>Intestinal</td>
</tr>
<tr>
<td>High CHOL</td>
<td>Gastro</td>
<td>Cholesterol</td>
<td>Heart Disease</td>
<td></td>
<td>Cancer</td>
</tr>
<tr>
<td>25%</td>
<td>Intestinal</td>
<td>Lowering</td>
<td>1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High BP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High BS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Sedentary: 53%
- Stress: 40%
- Obesity: 33%
- Overweight: 32%
- High CHOL: 25%
- High BP: 24%
- High BS: 5%

- Pregnancy: 7%
- Muscular: 6%
- Joints: 4%
- Diabetes: 4%
- Cancer: 3%
- Heart Circulation: 1%

- Behavioral Mental: 7%
- Auto Immune: 6%
- Gastro Intestinal: 4%
- Diabetes: 4%
- Infertility: 3%
- Cholesterol Lowering: 1%

- Cancer: 10%
- Heart Circulation: 8%
- Kidney Dialysis: 5%
- Transplant: 3%

- Behavioral Mental: 10%
- Pregnancy: 8%
- Auto Immune: 5%
- Respiratory Gastro Intestinal: 3%
- Cancer: 2%
- Diabetes: 1%
- Heart Circulation: 1%
Understand Your Disease Progression

*Dictates Population Health Continuum of Care*

- Obesity
- Low Back Pain
- Heartburn
- Heart Disease
- Stress
- Heart Attack
- Hypertension
- Blockage
- Cancer
- Dialysis
Start with Population Health Management

Best Practice Coordinates Efforts Across the Continuum

- **HEALTHY**
  - HRA/ Biometric Lunch & Learns
  - Immunizations
  - Occupational Health
  - Fitness
  - Healthy Environments
- **AT RISK**
  - Early detection screenings
  - Outreach & Education
  - Health Coaching
  - Lifestyle Prompts
  - Health Advocacy
- **ACUTE/ EPISODIC**
  - Scheduled/ Walk-in Clinic
  - Referral Management
  - Access to Primary Care
  - Integrated DM Case Management
  - Self Care
- **CHRONICALLY ILL**
  - Emergency Response
  - Complex Case Management
  - Pharmacy Care Management
  - Referral Management
  - Disability Management
- **CATASTROPHIC**
  - Face to Face with Trusted Clinicians
  - Integrated 360° Coaching and Care Management
  - Provider/Member Portal Content & Tools

85% members = 15% cost
15% members = 85% cost

Start with Population Health Management
Best Practice Coordinates Efforts Across the Continuum

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Provide Insight Into The Research On Building “Cultures Of Health” With A Focus On The Workforce And Community
Is the trend of disease progression possible to slow down?

Yes But it Requires Cultural Change
BUILDING A CULTURE OF HEALTH

Best Practice Coordinates Efforts Across All Levels of Prevention

“CULTURE eats Strategy for Breakfast”

Primary Prevention
Lifestyle Change
Immunizations
Seat Belts

Secondary Prevention
Screenings
Cancer
Blood Pressure
Cholesterol

Tertiary Prevention
Compliance with Care
Disease Management

Primordial Prevention
Culture Imperatives
Clean Water
Healthy Food

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Integrated Health & Safety at the Workplace
Building Cultures of Health & Safety

Figure 1

Workplace Health & Safety Continuum

<table>
<thead>
<tr>
<th>Risk Management</th>
<th>Medical Management</th>
<th>Population Health</th>
<th>Culture of Health &amp; Safety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical Surveillance Exams</td>
<td>Employee Assistance Management</td>
<td>Case Management</td>
<td>Wellness &amp; Prevention</td>
</tr>
<tr>
<td>Fitness for Duty</td>
<td>Reallity Program</td>
<td>Behavioral Health</td>
<td>Primary Care</td>
</tr>
<tr>
<td>Ergonomics</td>
<td>Rehabilitation</td>
<td>Travel Medicine</td>
<td>Evidence Based Benefit Design</td>
</tr>
<tr>
<td>Work Readiness</td>
<td>Work Hardening</td>
<td>Urgent Care</td>
<td>Reduced Illness Burden</td>
</tr>
<tr>
<td>Emergency Response</td>
<td>Ambulance Services</td>
<td>Health Advocacy</td>
<td>Strategic Planning</td>
</tr>
<tr>
<td>Injuries &amp; Illness</td>
<td>AED Programs</td>
<td>Medical Therapeutic Management</td>
<td>Continuous Improvement</td>
</tr>
<tr>
<td>OSHA Reporting</td>
<td>Workers Compensation</td>
<td>Absence Management</td>
<td>Healthy Work Environment</td>
</tr>
<tr>
<td></td>
<td>Centers of Excellence</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Connecting with these initiatives is safety for most of a workplace workforce. Workers who are engaged in their own health and well-being may be less likely to experience workplace accidents or injuries. Effective health and safety policies and practices can result in improved productivity, reduced absenteeism, and lower health care costs. Safety professionals can play a key role in developing and implementing effective workplace safety programs.

In conclusion, the workplace is a critical environment for the promotion of health and safety. By creating a culture of health and safety, employers can foster a healthier and more productive workforce. This culture should be supported by policies and practices that prioritize worker health and well-being, promoting a holistic approach to workplace wellness.
TENETS OF A CULTURE OF HEALTH – Becoming a Science
Roadmap for Improving the Health of Your Employees & Organization

1. Embrace a vision for health
2. Senior Management Commitment
3. Policies & Environment
4. Measurement, Data, & Analytics
5. Programs & Goals
6. Evidence Based Benefit Design
7. Population Health
8. Model Against Benchmark Companies

www.ihpm.org/pdf/EmployerHealthAssetManagementRoadmap.pdf
Culture of Health Measurement & Process
Our Research & Approach

Cultural Change is Required To Bend the Healthcare Cost Curve

- Experts speak about the need to surround employees in an environment where they are more likely to make healthy choices on a conscious and unconscious basis.
- Building a culture of health (COH) is complicated BUT
- We have simplified the process and can reduce it to a single measure.
- Over the last five years we have studied what it takes to build a culture of health and developed a six sigma methodology to measure it out of 1000 points & compare any organization against benchmark performance (over 650)
- We have identified your gaps from benchmark & have constructed a multi-year roadmap to achieve a Culture of Health.
OUR RESEARCH & METHODOLOGY

ASSESSMENT – GAP ANALYSIS

Single Metric – 700 out of 1000 is Benchmark

10 Weighted Categories

- People & management
- Marketing & communications
- Data warehousing
- Health & wellness plan design
- Environment
- On-site health activities
- Health & wellness activities
- Incentives and benefits design
- Engagement & navigation
- Vendor integration

Two Gaps-From-Benchmark Planning Tools

**EHQA™**
For Large Employers

- 218 “Elements”
- 10 “Categories”
- 11 “Thresholds”
- 5 “Degrees” of completion

**EA50™**
For Mid-Mkt Employers

- 50 “Elements”
- 10 “Categories”
- 5 “Degrees” of completion

**Health Risk Appraisals (HRA) For An Organization**
High Scoring Companies & Medical Trend
Advancing a Culture of Health Bends the Curve

The Predictive Validity of the HERO Scorecard in Determining Future Health Care Cost and Risk Trends

Ron Z. Goettzel, PhD, Rachel Mosher Henke, PhD, Richele Benevent, MS, Maryam J. Tabrizi, PhD, MS, Karen B. Kent, MPH, Kristyn J. Smith, BA, Emil Chung Roemer, PhD, Jessica Grossmeier, PhD, MPH, Shawn T. Mason, PhD, Daniel B. Gold, PhD, Steven P. Noeldner, PhD, and David R. Anderson, PhD, LP

FIGURE 2. Average unadjusted total allowed medical and drug expenditures (in 2012 dollars) per capita for the study sample compared with the sample of MarketScan organizations not completing a HERO Scorecard.

FIGURE 3. Average unadjusted percent change in medical expenditures over 3 years for the study sample (2012 dollars).
Employers, Employees & Health Care Delivery System Must Work in Concert

SILO’d Current State; Employees/Patients, Employers & Provider
Employers, Employees/Students & Health Care Delivery System Must Work in Concert

**FUTURE STATE : Convergent Services**

*Health Delivery Systems & Employers Are Best Positioned to Delivery on a Culture of Health*

Employee / Patient Accountability  
+ Health Provider Capability  
+ Employer / Community Responsibility

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Good health doesn’t start just at the doctor’s office. Where we live, learn, work, and play can influence healthy behaviors.

While an individual can take steps to change her behavior – for example, to exercise more – it takes individuals and organizations working together to reshape the physical environment, such as through policies related to playgrounds and reliable public transit, to help create healthy, vibrant neighborhoods.

An Institute of Medicine workshop explored how different sectors can work together to advance their own aims while supporting behaviors intended to lead to better health.

**SEE HOW POLICIES CAN IMPACT HOW PHYSICALLY ACTIVE WE ARE.**
Transportation

Sidewalks, crosswalks, traffic lights and bike paths can increase kids’ physical activity by allowing them to walk or cycle to school. For example, kids that walk or bike to school instead of being driven can get 16 more minutes of physical activity each day.¹

Policy examples could include: land use planning, “complete streets” (e.g., with sidewalks, crosswalks), transit-oriented development.

NOTE: This graphic lists statements and policy examples suggested by individual participants in a workshop hosted by the IOM Roundtable on Population Health on September 28, 2013. Statements, recommendations, and opinions expressed—other than those with source information (below)—are those of the individual participants and are not necessarily endorsed or verified by the IOM or the roundtable, and should not be construed as reflecting any group consensus.
Mandatory physical education classes can increase physical activity by about 23 minutes per day.\(^1\)

**Policy examples could include:** integration of physical activity across the curriculum, school revitalization, school redesign (e.g., green playgrounds), “joint use agreements” (e.g., of school playgrounds).

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ENVIRONMENT AND PARKS

Being close to parks and walking trails—especially those with nice scenery—can increase people’s level of physical activity.²

Policy examples could include: urban forestry, trails projects, air quality, water management and quality.

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**HOUSING AND NEIGHBORHOODS**

Neighborhoods where homes, stores, businesses, and recreational facilities are all close together are associated with increased walking.\(^2\)

**Policy examples could include:** inclusionary zoning, affordable housing, economic development, mixed use development.

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RWJ Foundation
Culture of Health Prize

2019 RWJF Culture of Health Prize
Call for Applications

Release Date: August 9, 2018 | Application Deadline: November 01, 2018, 3:00 p.m. ET

PURPOSE

The Robert Wood Johnson Foundation (RWJF) Culture of Health Prize (the Prize) recognizes communities that have come together around a commitment to health, opportunity, and equity through collaboration and inclusion, especially with historically marginalized populations and those facing the greatest barriers to good health. The Prize honors those communities that are working to give everyone the opportunity to live well, including residents that are often left behind. A Culture of Health recognizes that where we live—our access to affordable and stable homes, quality schools, reliable transportation—make a difference in our opportunities to thrive, and ultimately all of this profoundly affects our health and well-being. The Prize elevates the compelling stories of community members who are working together to transform neighborhoods, schools, businesses, and more—so that better health flourishes everywhere, for everyone.

SELECTION CRITERIA

There are characteristics shared by communities that catalyze and sustain positive change. Because the Prize recognizes whole communities, applicants must think beyond their own individual organizations and initiatives to what has been accomplished across the community. Applications will be judged based on the criteria below.

- Defining health in the broadest possible terms.
- Committing to sustainable systems changes and policy oriented long-term solutions.
- Creating conditions that give everyone a fair and just opportunity to reach their best possible health.
- Harnessing the collective power of leaders, partners, and community members.
- Securing and making the most of available resources.
- Measuring and sharing progress and results.
PA County Rankings

http://www.countyhealthrankings.org/rankings/data/pa
AARP Livability Index

**TOTAL INDEX SCORE**

- **Livability Score:** 61

**CATEGORY SCORE**

- **HOUSING:** 70
  - Affordability and access

- **NEIGHBORHOOD:** 58
  - Access to life, work, and play

- **TRANSPORTATION:** 72
  - Safe and convenient options

- **ENVIRONMENT:** 48
  - Clean air and water

- **HEALTH:** 50
  - Prevention, access and quality

- **ENGAGEMENT:** 58
  - Civic and social involvement

- **OPPORTUNITY:** 70
  - Inclusion and possibilities

**Metrics**

- **Healthy behaviors**
  - **SMOKING PREVALENCE**
    - 21.1% of people smoke regularly
    - Median US neighborhood: 20.5%

- **OBESITY PREVALENCE**
  - 27.8% of people are obese
  - Median US neighborhood: 28.9%

- **ACCESS TO EXERCISE OPPORTUNITIES**
  - 78.6% of people have access
  - Median US neighborhood: 90.7%

- **HEALTH CARE PROFESSIONAL SHORTAGE AREAS**
  - 0 index from 0 to 25
  - Median US neighborhood: 0

- **PREVENTABLE HOSPITALIZATION RATE**
  - 54.8 preventable hospitalizations per 1,000 patients
  - Median US neighborhood: 48.5

- **PATIENT SATISFACTION**
  - 74.0% of patients are satisfied
  - Median US neighborhood: 71.3%
THE ULTIMATE GIFT OF HEALTH: Compression Of Morbidity

The longer you stay healthy and vital, the shorter your period of morbidity before life ends.

The Goal Should Be Sudden Death in Overtime

The longer you stay healthy and vital, the shorter your period of morbidity before life ends.
Demonstrate That There Is A Connection Between The Health Of A Population And The Wealth It Generates
Why Invest in A Healthy Workforce?

*IT ADDS VALUE 5 WAYS*

- Medical Cost Reductions
- Productivity Gains
- Employee Engagement
- Employer of Choice
- Return to Investors
Medical Cost Reductions
The New Benchmark: Bending the Curve
A Selected Few Employers Whose Healthcare Costs Are Going Down

High Performer Net Cost Trends 2005 - 2010
Adjusted For Consumer Price Index (CPI-U) Inflation

<table>
<thead>
<tr>
<th>Year</th>
<th>High Performing Clients</th>
<th>MarketScan</th>
<th>Mercer</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>85</td>
<td>93</td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td>90</td>
<td>100</td>
<td></td>
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<tr>
<td>2007</td>
<td>95</td>
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<td>2008</td>
<td>100</td>
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<tr>
<td>2009</td>
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</tr>
<tr>
<td>2010</td>
<td>110</td>
<td>120</td>
<td></td>
</tr>
</tbody>
</table>

Eight employers, with self funded plans, spanning multiple industries who also utilize TRUVEN HEALTH ANALYTICS decision support and analytic consulting services. These clients consistently outperformed net pay trend rates for the broader 53 client group each year and cumulatively from 2005 – 2010. As a group, they have consistently made innovative use of healthcare data to support all aspects of population health, productivity and plan management.

MarketScan™
A group of over 50 TRUVEN HEALTH ANALYTICS clients with 5 million members covered in self funded plans that contributed to MarketScan continuously since 2005.

2010 Mercer National Survey
A comprehensive survey of 2,836 US employers. Reflecting the average reported healthcare trend rates across group size, geographic region and industry type.
Medical Cost Reductions
Bends the Cost Curve
Demonstrates a Sustainable Culture of Health

Recent Experience in Health Promotion At Johnson & Johnson: Lower Health Spending, Strong Return on Investment

By Rachel M. Moskowitz, Barz. Z. Sapetel, Laura McHugh, and Pia Jones

KEYWORDS

- Medical Cost Reductions
- Demonstrating significant:
  - Direct cost Reductions
  - Risk Reductions
  - Health Status Improvement
  - Return on Investment
  - Implied Indirect Cost Savings
  - Implied Competitive Advantage to Control Group

Abstract

Johnson & Johnson Family of Companies introduced its worksite health promotion program in 1979. The program evolved and is still in place after more than thirty years. We evaluated the program's effect on employees' health risks and health care costs for the period 2002-06. Measured against similar large companies, Johnson & Johnson experienced average annual growth in total medical spending that was 3.2 percentage points lower. Company employees benefited from meaningful reductions in rates of obesity, high blood pressure, high cholesterol, tobacco use, physical inactivity, and poor nutrition. Average annual per employee savings were $563 in 2009 dollars, producing a return on investment equal to a range of $388-$432 saved for every dollar spent on the program. Because the cost majority of U.S. adults participate in the workforce, positive effects from similar programs could lead to better health and to savings for the nation as a whole.

Figure 1: reductions in health care costs for Johnson & Johnson employees compared to industry average

Figure 2: Johnson & Johnson Adjusted Medical and Drug Costs versus Johnson & Johnson Expected Medical and Drug Costs with Compensation Group Trend

Figure 3: Health care cost trend per employee/reitreer: 1999-2009.
Medical Cost Reductions
Greater Return to Keep The Well Well ~ 2.1: Wellness Score & Medical Costs Over 3 Years

YEAR 1

ILL
9,452 (34%)
71.8
$7,728

WELL
18,347 (66%)
85.9
$3,822

YEAR 2

ILL
6,285
71.4
$8,801

WELL
2,810
75.6
$7,051

YEAR 3

ILL
4,819
70.9
$9,555

WELL
15,537
87
$3,691

N=27,799
Wellness Score 81.1
Mean Cost $5,150

Zero Trends; Dee Edington 2009

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Productivity Gains

Obesity Business Costs

*Advances Exponentially with Weight*

Pepsico Study \((N=11,217)\)
Productivity Gains

The Impact Of Poor Health To Employers

Continuum Of Employee Performance Outcomes

For Every Dollar Spent on Health Care There Are $3 Lost in Productivity

- Personal Health Costs
  - Medical Care
  - Pharmaceutical costs

- Productivity Costs
  - Absenteeism
  - Short-Term Disability
  - Long-Term Disability
  - Presenteeism
  - Overtime
  - Turnover
  - Temporary Staffing
  - Administrative Costs
  - Replacement Training
  - Off-Site Travel for Care
  - Customer Disenfranchisement
  - Variable Product Quality

- Lost to the workforce
  - Not doing well while working
    - errors
    - complaints
    - delays
    - team breakdown
  - Not doing work on work time
    - unscheduled breaks
    - unfocused time
    - health exams on work time
    - information gathering
  - Not at work
    - unscheduled absence
    - disability
    - workers’ comp
    - replacement workers
  - Lost to replacement workers
    - permanent disability
    - early retirement due to health issues
    - premature death
    - spousal illness

For Every Dollar Spent on Health Care There Are $3 Lost in Productivity

Proprietary & Confidential
Productivity Gains
Top 10 Health Conditions
by Full Costs For Employers
(Med + RX + Absenteeism + Presenteeism) Costs/1000 FTEs

Employee Engagement
Health & Employee Commitment
Unilever Lamplighter Program

Health Benefits
• 18% increase in the number of employees who exercised
• 5% drop in the number of employees with high BMI
• 13% drop in the number of employees with high blood pressure... (down from 21% to just 8%)
• 8% drop in the number of employees with high cholesterol
• 5% decrease in the number of employees classed as having poor nutrition
• 8% decrease in the number of smokers. Overall the number of employees classed as ‘high health risk’ dropped by 5%
• Overall the number of employees classed as ‘low health risk’ increased by 23%

Engagement Enhancement

The Lancaster study showed that employees who participated in Lamplighter:
• Felt significantly more engaged with their work
• Were less likely to take time off work due to health problems
• Were able to perform better in their job
• Were less likely to be adversely affected by pressure at work
• Were more likely to practice healthy behaviors at work
**Employee Engagement**

Unilever LampLighter Findings

**Better Health – Better Performance**

**Engaged employees:**
- Perform up to 20% better than less-engaged employees
- Are 87% less likely to leave the organisation than employees with low levels of engagement
- Are more innovative
- Are more committed to customer satisfaction
- Contribute more to their organisation than their less engaged peers
- Consistently go the extra mile

<table>
<thead>
<tr>
<th>Score</th>
<th>Health</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top Performer</td>
<td>72.4</td>
</tr>
<tr>
<td>Middle Performer</td>
<td>67.5</td>
</tr>
<tr>
<td>Bottom Performer</td>
<td>66.9</td>
</tr>
</tbody>
</table>
Employer of Choice
Investing In Health
Enhances Brand

Health & Wellness Programs are key Reason cited in *Fortune100 Best Companies to Work For*

Yum Brands – Wellness Program *Reducing Turnover*

Goldman Sachs – *Retaining & Attracting the Best Talent*
Employer of Choice
The Value of “EOC”

Employer of Choice Benefits are Pervasive

The benefits of becoming an “employer of choice” are not easy to quantify due the pervasive effects it has on so many aspects of an organization. However, a focus on reduced turnover can be a good start.

Replacement of an employee normally costs 150% of the salary.

For the mid-sized company of 1,000 employees who has a 10% annual rate of turnover, the annual cost of turnover is $7.5 million!
Marketplace rewards companies who achieve cultures of health:

- Used the ACOEM Corporate Health Achievement Award (CHAA) culture of health award winners as a stock portfolio
- A portfolio of approximately twenty publicly traded award winners; over nearly two decades
- Published September 2013 in the JOEM
- Once again the portfolio outperformed the market significantly; in all four test scenarios
3 More Studies Published in 2016

Marketplace rewards companies who achieve cultures of health

- Health Enhancement Resource Organization High Scoring Companies

- Health Project Award Winning Companies

- CHAA Award winning companies
Award Requirements

Provides insight into the Elements of a Comprehensive Culture of Health

### HERO Key Categories
- strategic planning
- leadership engagement
- program management
- program comprehensiveness
- engagement methods
- measurement & evaluation

### KOOP Requirements
- Reduce health services need
- Share health promotion targets
- Prove health care / productivity cost reductions
- Must be objective & verifiable
- Achieved through health status improvement and risk reduction of the workforce / covered lives

### ACOEM Standards
- Organizational Structure
- Health Informatics
- Quality Improvement
- Leadership / Management
- Health Promotion
- Absence Management
- Disability Management
- Health & Productivity
- Health Benefits Design
- Occupational Health
- Traveler Medicine
- Mental Health
- Substance Abuse
- Hazard Abatement
- Emergency Preparedness

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Workforce Health = Competitive Advantage

“Though correlation is not the same as causation, the results consistently and significantly suggest that companies focusing on the health and safety of their workforce are yielding greater value for their investors as well. More research needs to be done to better understand the value of building these “cultures of health” in the workplace. Perhaps such efforts as this simply identify “smart” companies that out-perform. But the evidence appears to be building that healthy workforces provide a competitive advantage in ways that benefit their investors.”
The Unique Opportunity & Role Health Delivery and Employers Can Play in Promoting Population Health & Building Cultures of Health

- **Employer** – save on health care costs and improve the performance of your workforce
- **Role Model** - for others to follow in the community
- **Health Care Delivery** – align efforts with community payer and employers
- **Educator** – teach the emerging science of Population Health & Building Cultures of Health & their connection to performance / wealth
- **Researcher** – dedicate resources to create a living laboratory – study best practices and innovations