



# POPULATION HEALTH: MOVING FROM JUST TREATING ILLNESS TO BUILDING CULTURES OF HEALTH

Department of Behavioral Health  
and Intellectual Disability Services  
**Philadelphia PA**



Ray Fabius MD  
Co-Founder HealthNEXT  
Medical Advisor GPBCH

June 15 2016

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# My Journey

*Provider, Payer, Purchaser, Vendor, Consultant – Patient*



- **Nearly 30 years of medical management experience with**

- Truven Health Analytics / Thomson Reuters Healthcare (CMO)
- Walgreens (Strategic Advisor to the President)
- CHD Meridian / I-trax (President & CMO)
- GE (Global Medical Leader)
- Aetna, US Healthcare (Corporate Medical Director)

- **Served as front line primary care physician for over a decade**

- Comcast Hills Pediatrics (private practice)
- Episcopal Hospital Pediatric Clinic Director (Comcast Medical School affiliate)

- **Published articles, book chapters and three books**

- Most recent book is entitled Population Health: Creating Cultures of Wellness

- **Adjunct Faculty positions**

- Jefferson School of Population Health, Harvard School of Public Health
- American College of Occupational & Environmental Medicine

- **Distinguished Fellow & Faculty Member of American College of Physician Executives**

- **Co-founder of HealthNEXT**

- Emerging Leader in building organizational cultures of health

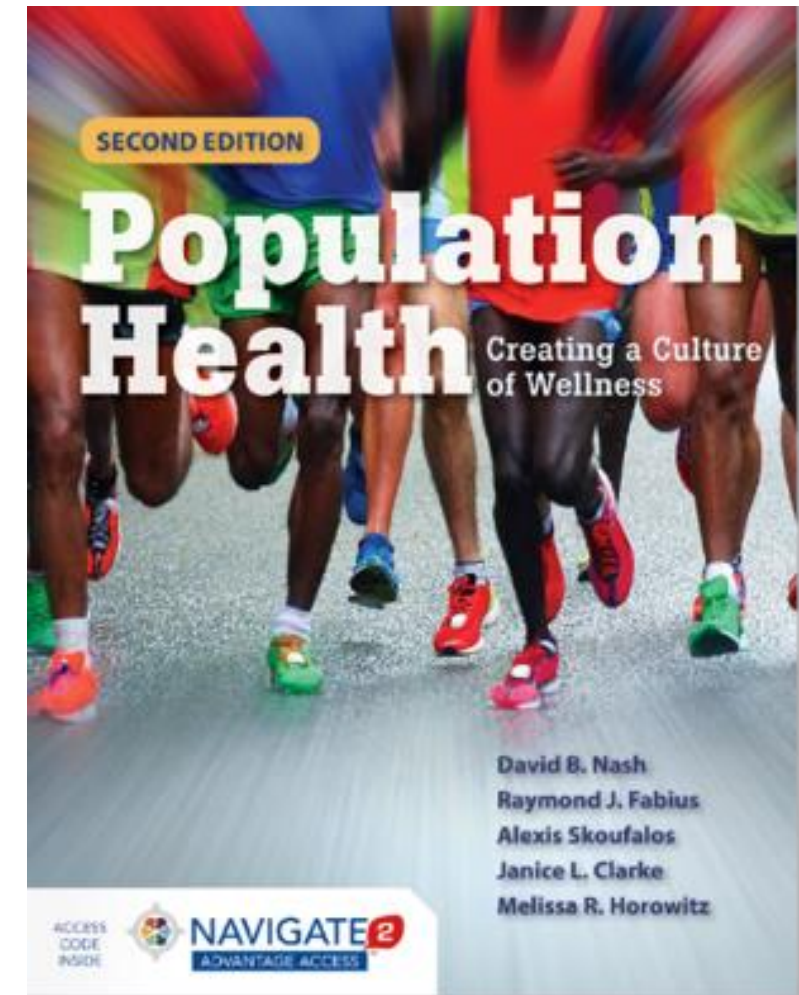


THOMSON REUTERS



# MY BACKGROUND:

A PATIENT, A PROVIDER, A PAYER, A PURCHASER, A VENDOR, A CONSULTANT



# Agenda Today

## 4 WHATs, A Why & A Can



- **What Is Population Health?**
- **What Is Population Health Management?**
- **What is the role of the Department of Behavioral Health and Intellectual Disability Services?**
- **Why Manage the Health of Populations?**
- **What does it mean to build cultures of health?**
- **Can we apply all of this to the city of Philadelphia?**
- **STANDING OVATION**

# What is Population Health ?

**Health Interventions**



**Determinants of Health**

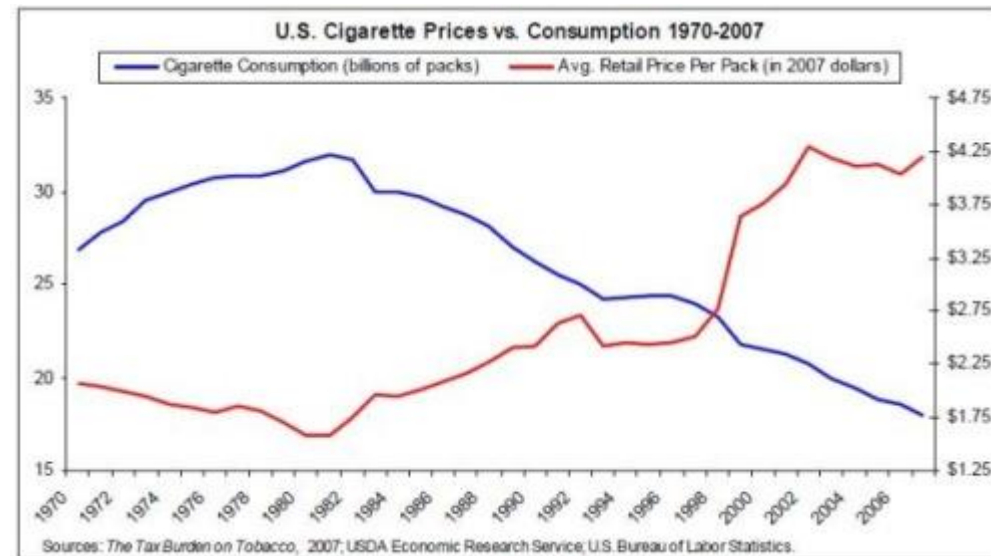


**Health Status Improvement**



# POPULATION HEALTH

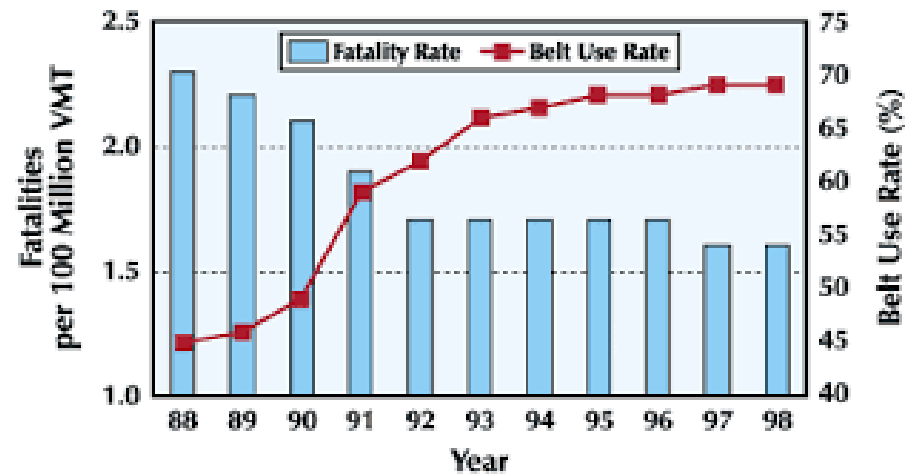
## Examples of Interventions



CREATE TAXES TO IMPROVE POPULATION HEALTH

# POPULATION HEALTH

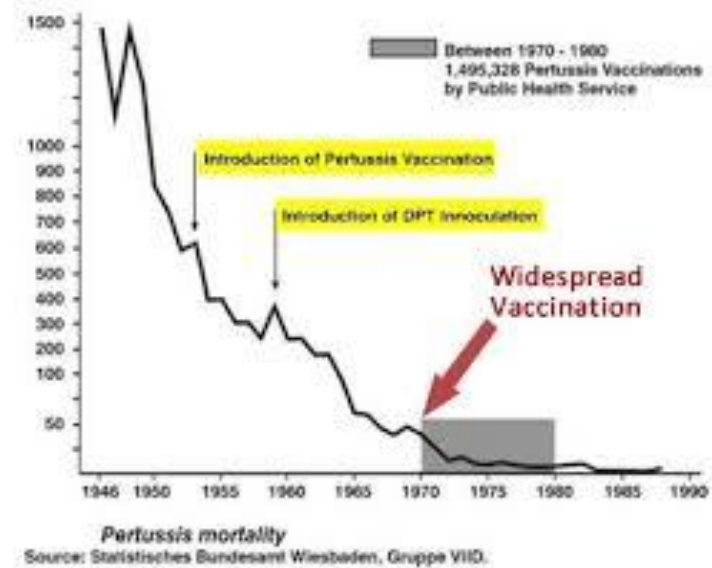
## Examples of Interventions



CREATE LAWS TO IMPROVE POPULATION HEALTH

# POPULATION HEALTH

## Examples of Interventions



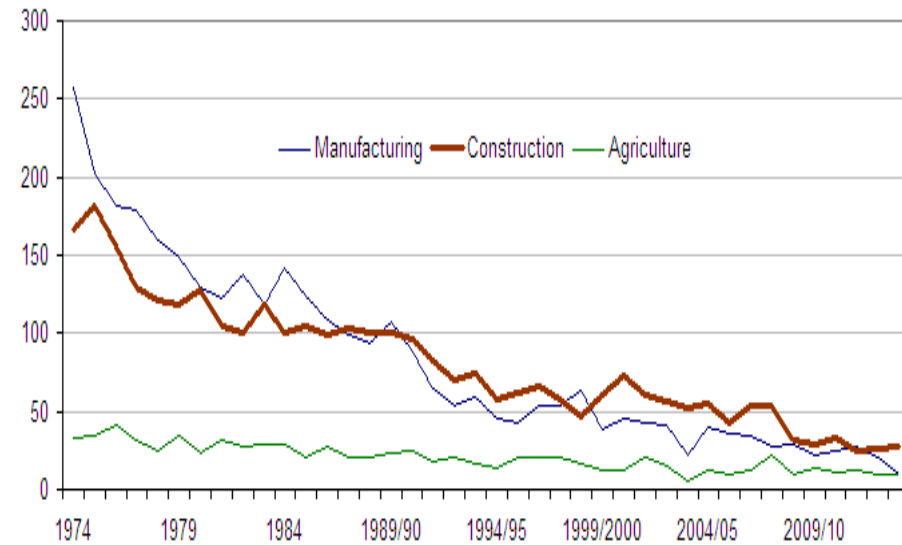
CREATE MEDICAL BREAKTHROUGHS TO IMPROVE POPULATION HEALTH

# POPULATION HEALTH

## Examples of Interventions

### Workplace Safety

Workplace safety begins and ends with you. It's your responsibility to stay current on the latest news and items to prevent workplace injuries.



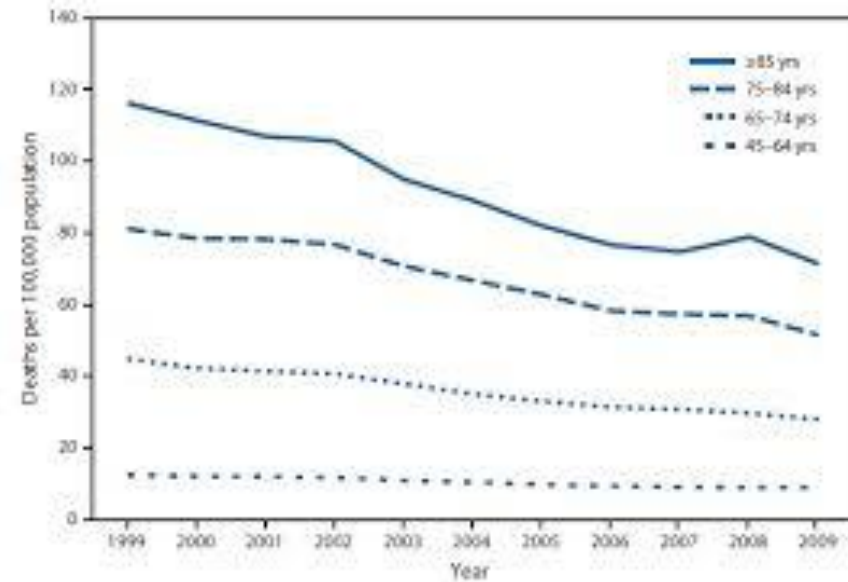
CREATE SAFER WORKPLACES TO IMPROVE POPULATION HEALTH

# POPULATION HEALTH

## Examples of Interventions

**Surgical Safety Checklist**
World Health Organization Patient Safety  
A World Alliance for Safer Health Care

Before induction of anaesthesia <small>(with at least nurse and anaesthetist)</small>	Before skin incision <small>(with nurse, anaesthetist and surgeon)</small>	Before patient leaves operating room <small>(with nurse, anaesthetist and surgeon)</small>
<p><b>Has the patient confirmed his/her identity, site, procedure, and consent?</b></p> <input type="checkbox"/> Yes	<p><input type="checkbox"/> Confirm all team members have introduced themselves by name and role.</p> <p><input type="checkbox"/> Confirm the patient's name, procedure, and where the incision will be made.</p> <p><b>Has antibiotic prophylaxis been given within the last 60 minutes?</b></p> <input type="checkbox"/> Yes <input type="checkbox"/> Not applicable	<p><b>Nurse Verbally Confirms:</b></p> <input type="checkbox"/> The name of the procedure <input type="checkbox"/> Completion of instrument, sponge and needle counts <input type="checkbox"/> Specimen labelling (read specimen labels aloud, including patient name) <input type="checkbox"/> Whether there are any equipment problems to be addressed
<p><b>Is the site marked?</b></p> <input type="checkbox"/> Yes <input type="checkbox"/> Not applicable	<p><b>Anticipated Critical Events</b></p> <p><b>To Surgeon:</b></p> <input type="checkbox"/> What are the critical or non-routine steps? <input type="checkbox"/> How long will the case take? <input type="checkbox"/> What is the anticipated blood loss?	<p><b>To Surgeon, Anaesthetist and Nurse:</b></p> <input type="checkbox"/> What are the key concerns for recovery and management of this patient?
<p><b>Is the anaesthesia machine and medication check complete?</b></p> <input type="checkbox"/> Yes	<p><b>To Anaesthetist:</b></p> <input type="checkbox"/> Are there any patient-specific concerns?	
<p><b>Is the pulse oximeter on the patient and functioning?</b></p> <input type="checkbox"/> Yes	<p><b>To Nursing Team:</b></p> <input type="checkbox"/> Has sterility (including indicator results) been confirmed? <input type="checkbox"/> Are there equipment issues or any concerns?	
<p><b>Does the patient have a:</b></p> <p><b>Known allergy?</b></p> <input type="checkbox"/> No <input type="checkbox"/> Yes	<p><b>Is essential imaging displayed?</b></p> <input type="checkbox"/> Yes <input type="checkbox"/> Not applicable	
<p><b>Difficult airway or aspiration risk?</b></p> <input type="checkbox"/> No <input type="checkbox"/> Yes, and equipment/assistance available		
<p><b>Risk of &gt;500ml blood loss (7ml/kg in children)?</b></p> <input type="checkbox"/> No <input type="checkbox"/> Yes, and two IVs/central access and fluids planned		



CREATE SAFER HOSPITALS TO IMPROVE POPULATION HEALTH

# POPULATION HEALTH SOCIAL DETERMINANTS

## Health & Well-being influencers

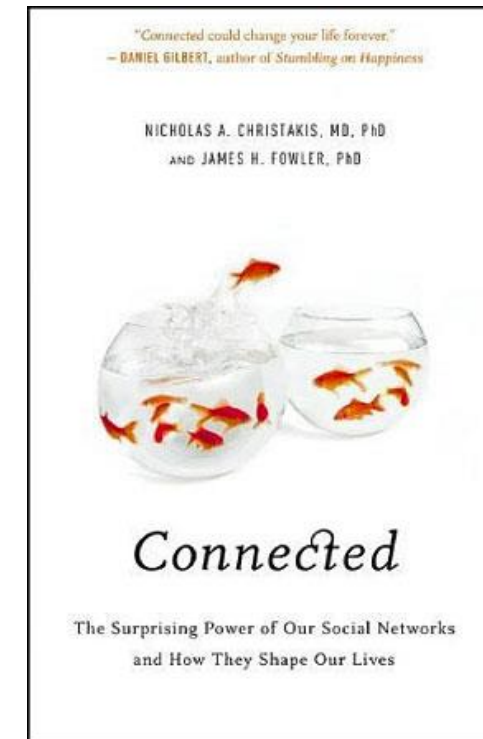
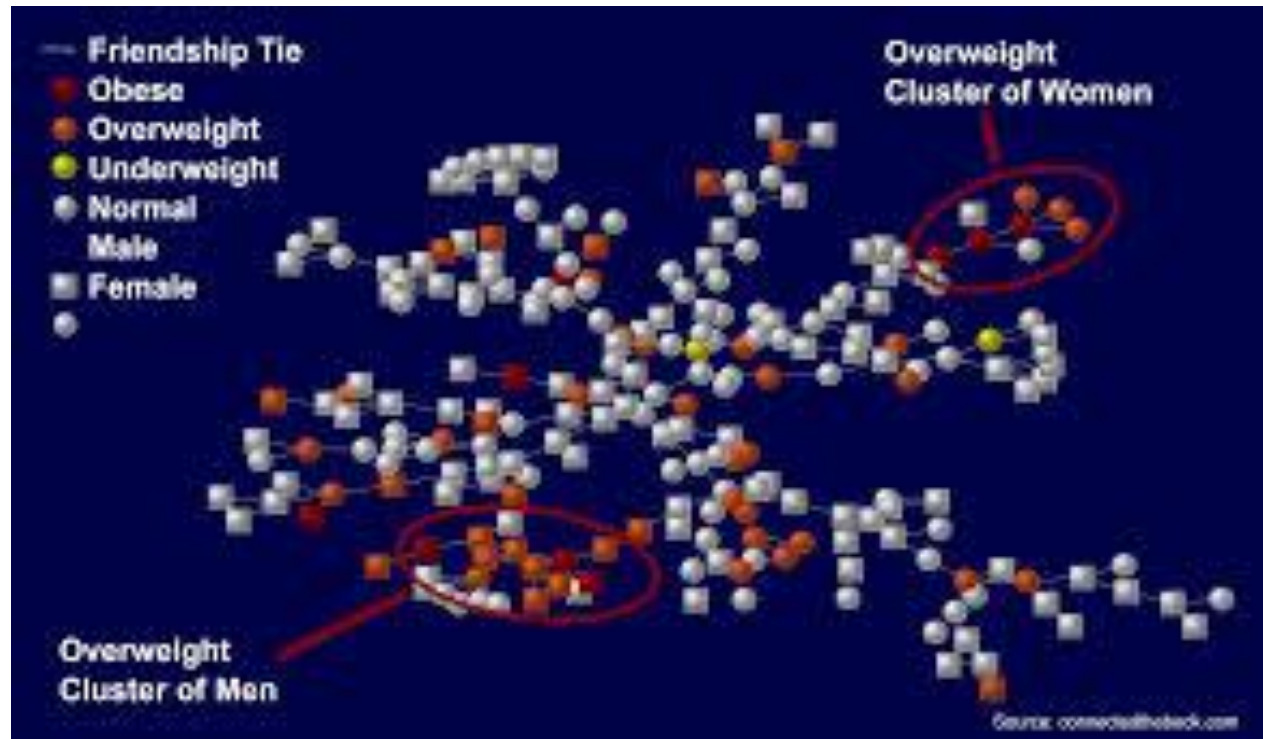
- **Intrapersonal** – knowledge, attitude, beliefs, risks, access
- **Social** – peers, family, friends
- **Employment** – co-workers, policies, workplace
- **Community** – environment, rules, regulations



**Stay well where you live, work and play**

# The Hidden Social Influence

## *Is Obesity Contagious?*

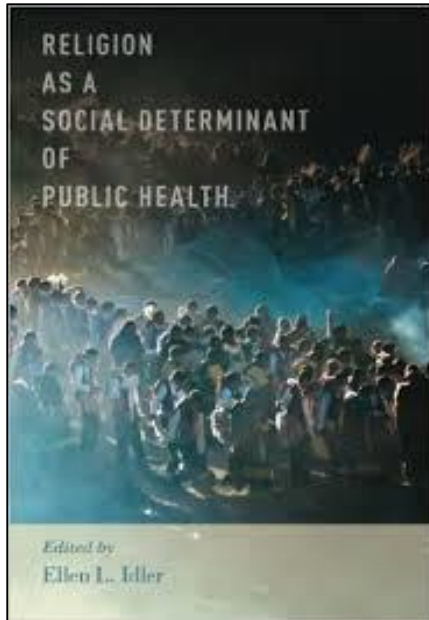


<http://www.nejm.org/doi/full/10.1056/NEJMsa066082>

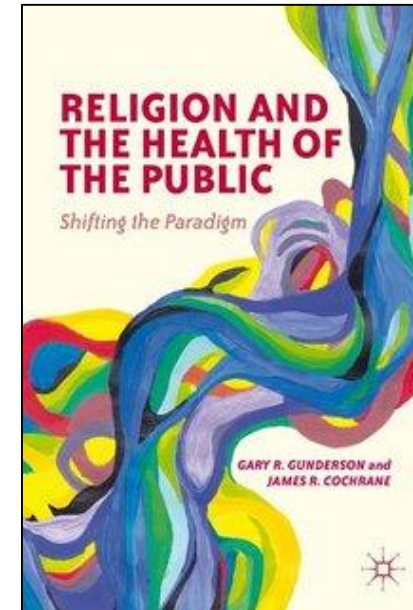
[http://www.ted.com/talks/nicholas\\_christakis\\_the\\_hidden\\_influence\\_of\\_social\\_networks?language=en](http://www.ted.com/talks/nicholas_christakis_the_hidden_influence_of_social_networks?language=en)

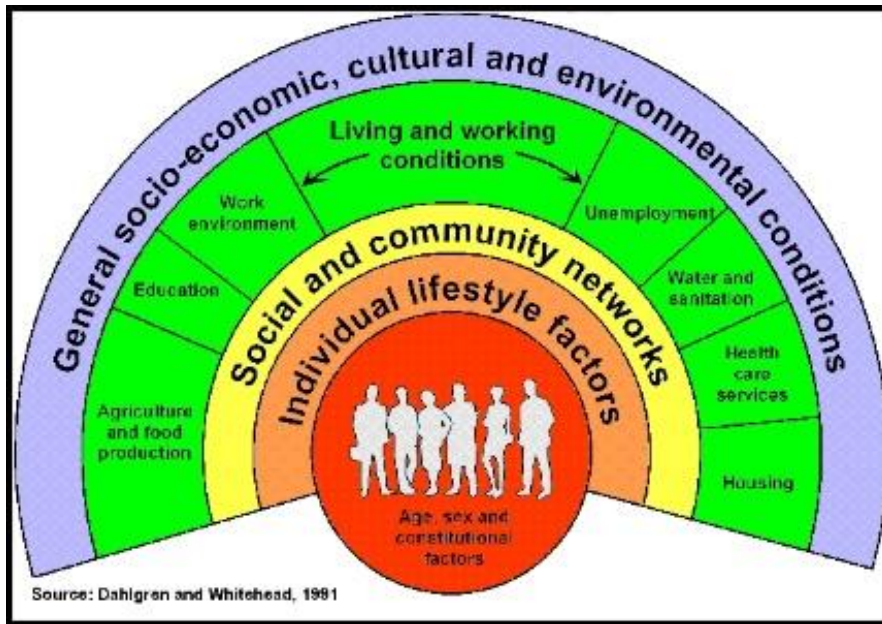
# Faith – A Social Determinant of Health

## Hope, Belonging, Compassion, Community



Regular Attendance  
at a place of worship  
correlates with up to  
7 years of additional  
quality life years

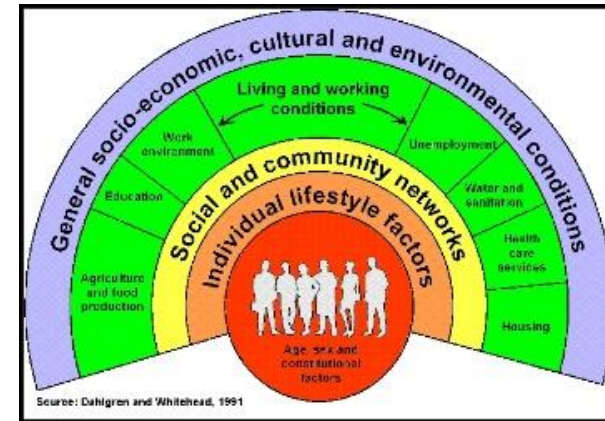




## POPULATION HEALTH DETERMINANTS

- **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.

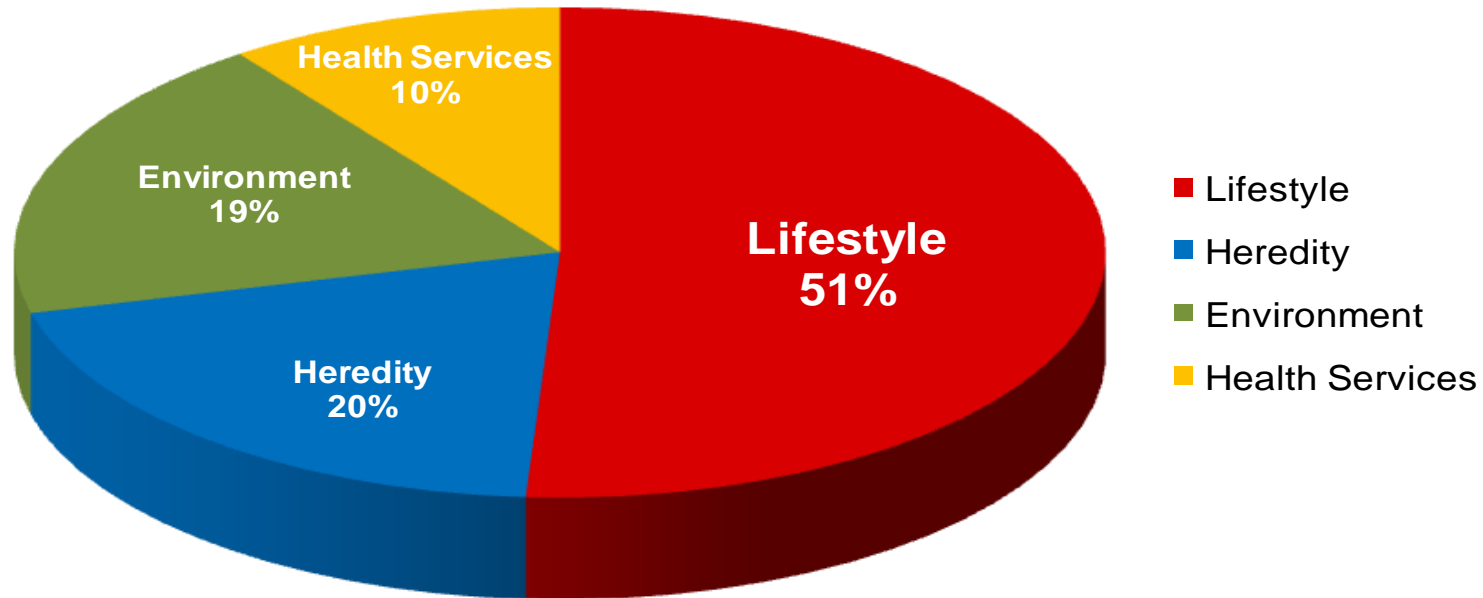
# POPULATION HEALTH DETERMINANTS



- **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 ages.

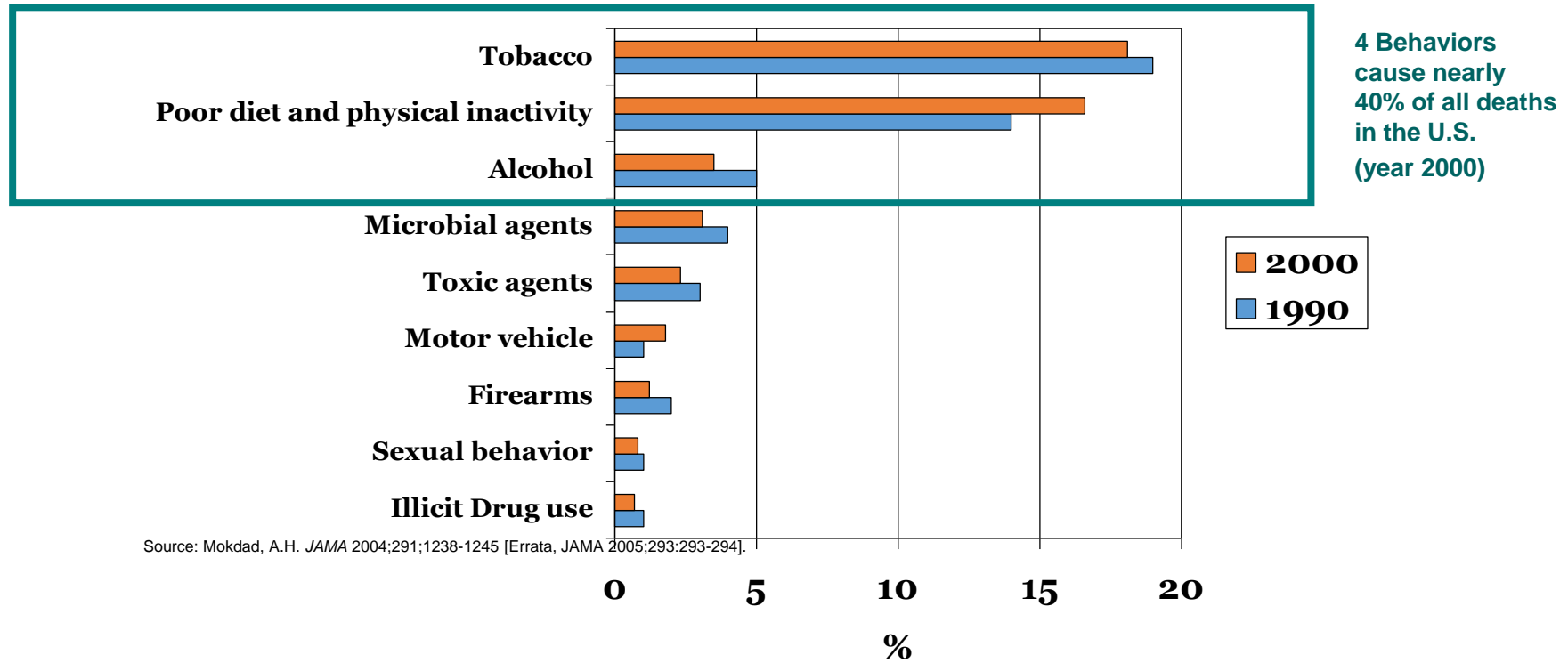
## Lifestyle: *Strongest Determinant of Mortality*

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



Mokdad AH, et.al. Actual Causes of death in the United States, 2000. JAMA. 2004; 291:1238-1245.

# Lifestyle: *Actual Causes of Death in the U.S.*



# Optimal Lifestyle Metric (OLM)

- Being physically active



- Not smoking



- Eating 5 fruits and vegetables each day



- Drinking alcohol in moderation



# Every Year That You Do Not Take Care of Yourself Increases Your Chance of Chronic Disease

## The “OLM Universe”

Diet OLM Flag	Tobacco OLM Flag	Alcohol OLM Flag	Physical Activity OLM Flag	Number (%)
0	0	0	0	1288 (0.26%)
0	0	0	1	2363 (0.47%)
0	0	1	0	20667 (4.13%)
0	0	1	1	39918 (7.98%)
0	1	0	0	2073 (0.41%)
0	1	0	1	5783 (1.16%)
0	1	1	0	90656 (18.1%)
0	1	1	1	255344 (51.0%)
1	0	0	0	40 (0.01%)
1	0	0	1	205 (0.04%)
1	0	1	0	661 (0.13%)
1	0	1	1	4071 (0.81%)
1	1	0	0	189 (0.04%)
1	1	0	1	1386 (0.28%)
1	1	1	0	10674 (2.13%)
1	1	1	1	65026 (13.0%)

- <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

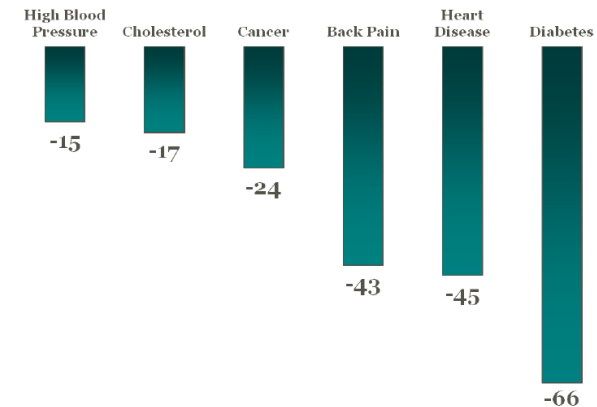
- 83.6% does **not** meet the diet OLM component (5 F&V daily)

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 (%)



Source: Pronk NP, et al. Pop Health Manage 2010;13:289-295.



# WHAT IS POPULATION HEALTH MANAGEMENT?

Department of Behavioral Health  
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**Philadelphia PA**



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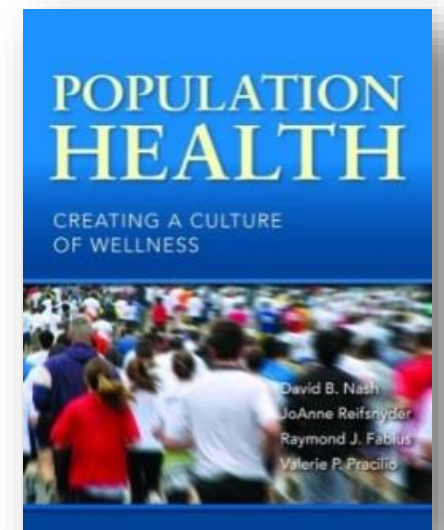
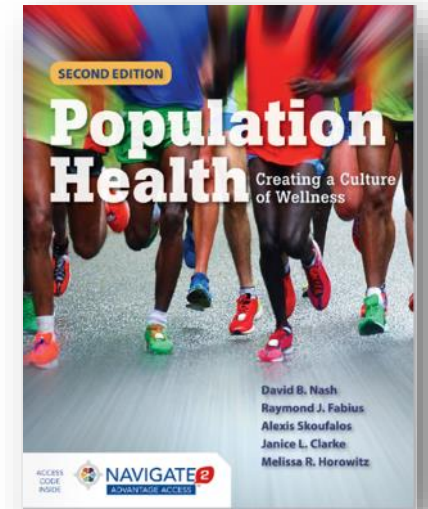
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# Population Health Management

*Manages Across the Continuum*

*How Does Behavioral Health Fit In?*



# POPULATION HEALTH - WELLNESS

*Not Just the Absence of Illness*

*Significant Behavioral Health Focus*

## WHO Definition of Health

Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity

## Components of Wellness

**S**ocial

**P**hysical

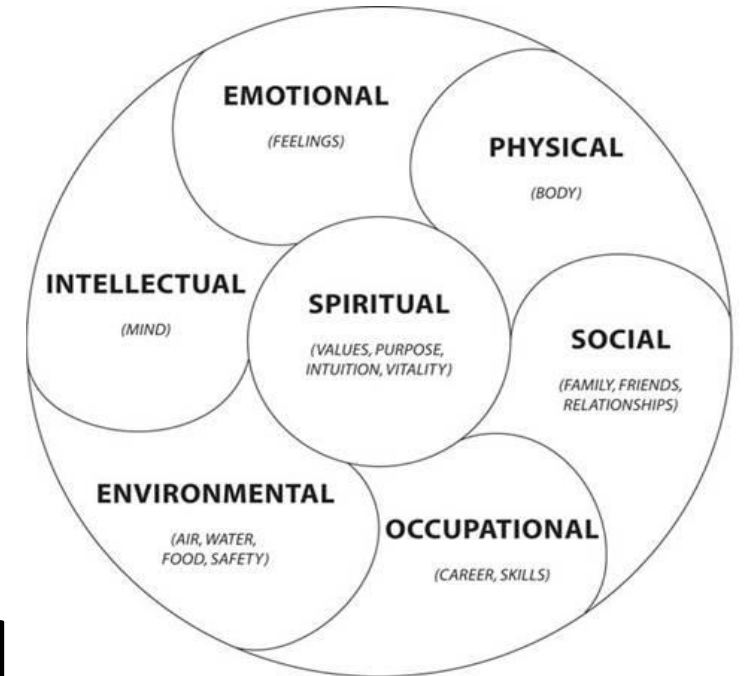
**E**motional

**C**areer

**I**ntellectual

**E**nvironmental

**S**piritual



Source: <http://www.undstudenthealth.com>

Swenson, John A., M.D.

# POPULATION HEALTH THE HEALTHY “BLUE ZONES”



**Right Outlook:**  
Without Anger &  
Anxiety



**Move Naturally:**  
Build into Lifestyle



**Consume Wisely:**  
No Smoking  
Fruits, Vegetables, Nuts

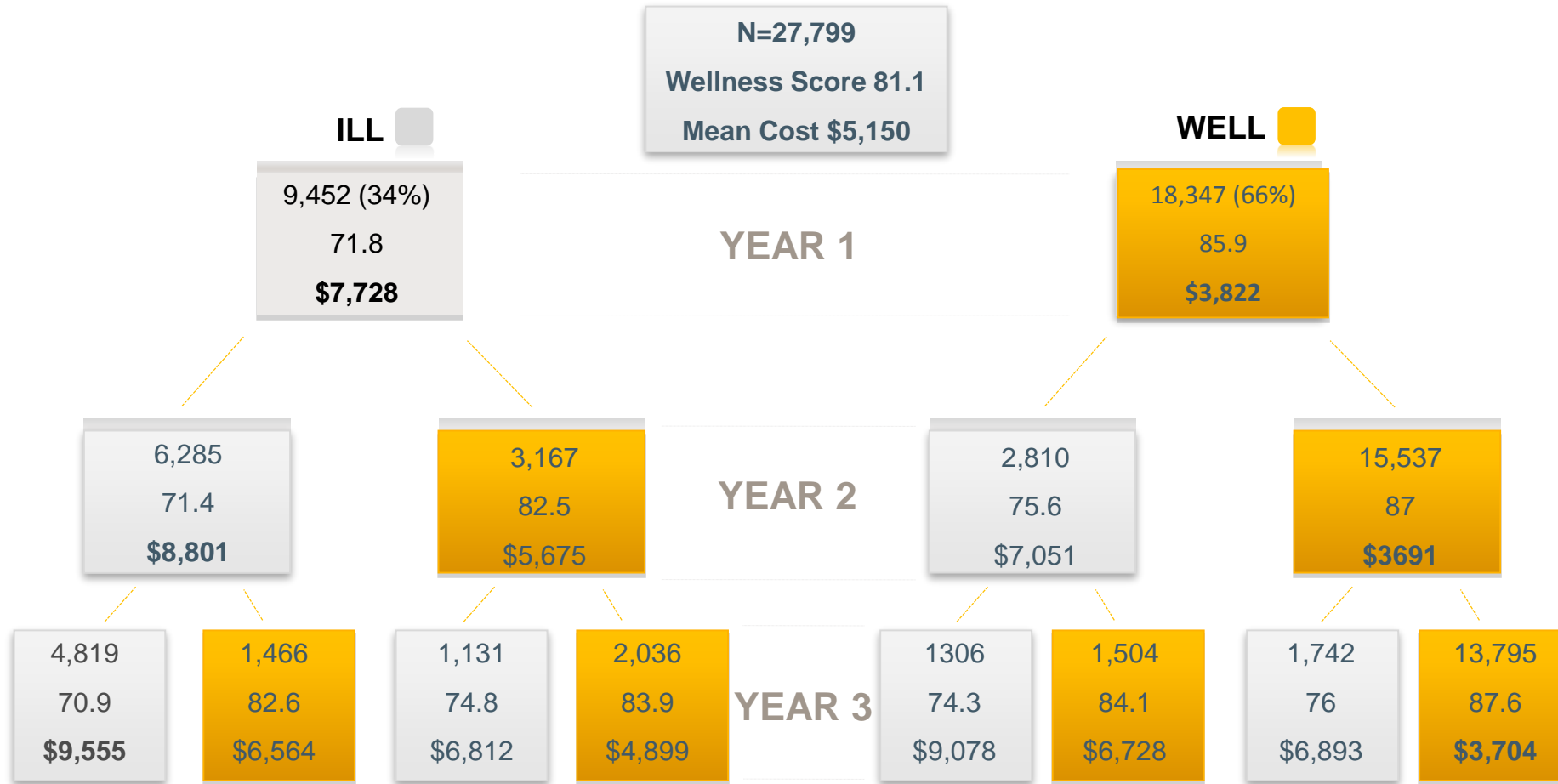


**Belong:**  
Strong Spousal Relations  
Community Activities  
Religion/Spiritual



# WELLNESS

**GREATER RETURN TO KEEP THE WELL WELL~ 2.1:  
WELLNESS SCORE & MEDICAL COSTS OVER 3 YEARS**



*Zero Trends; Dee Edington 2009*

# POPULATION HEALTH: AT RISK

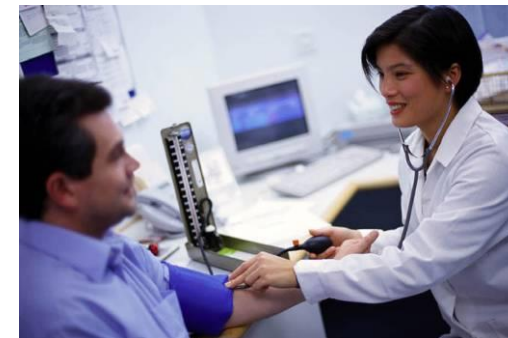
## *Our Lifestyle Determines Our Health*

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



# Health by Numbers

051025

The GE trademarked prevention program

Its purpose is to help the global employee community stay well.

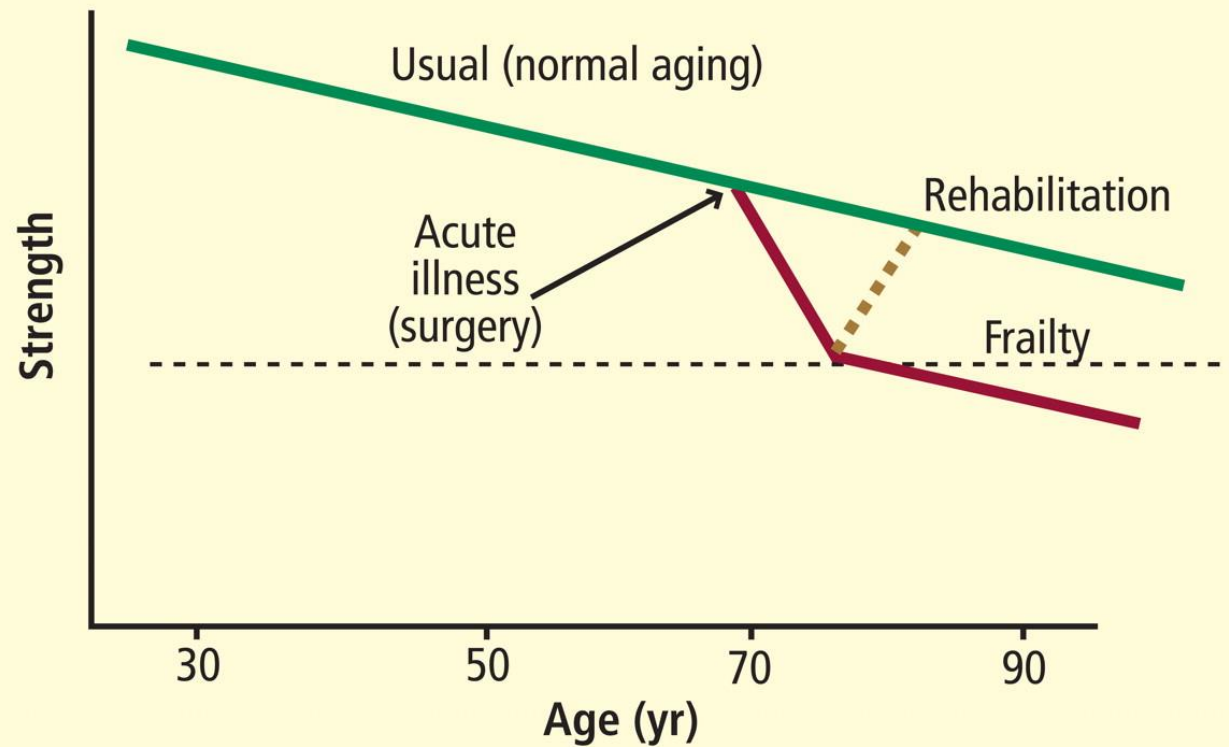
The key numbers remind us to avoid tobacco products, eat a healthy diet, exercise regularly and maintain a normal weight.



# POPULATION HEALTH

## ACUTE ILLNESSES IMPACTS VITALITY

### Effects of illness on physical functioning



# POPULATION HEALTH

## MANAGE CHRONIC CONDITIONS

GREAT POTENTIAL TO SOLVE MEDICAL INFLATION

By Kenneth E. Thorpe, Lydia L. Ogden, and Katya Galactionova

### Chronic Conditions Account For Rise In Medicare Spending From 1987 To 2006

doi: 10.1377/hlthaff.2009.0474  
HEALTH AFFAIRS 29,  
NO. 4 (2010): –  
©2010 Project HOPE—  
The People-to-People Health  
Foundation, Inc.



#### Rise in spending for treated diseases (37%)

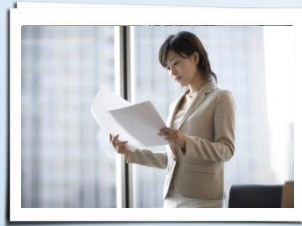
- Innovation/advancing technology (pharmacologic, devices, treatments)
  - Newborn delivery costs – five-fold increase from 1987-2002
  - NICU, incubators, ventilators, C-section
  - New/better medicines for treating disease
  - New treatment thresholds
    - Blood pressure
    - High blood glucose
    - Hyperlipidemia

#### Rise in the prevalence of disease (63%)

- About ¾ of all healthcare spending in the U.S. is focused on patients who have one or more chronic health conditions
- Chronically ill patients only receive 56% of clinically recommended preventive health services
- 27% of the rise in healthcare costs is associated with increases in obesity rates

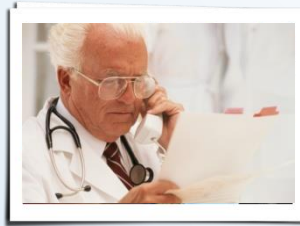
# DISEASE MANAGEMENT

## MANAGE CHRONIC CONDITIONS



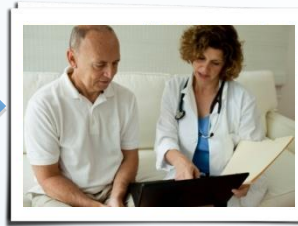
### Identification

Predictive modeling  
Severity indexing



### Engagement

Trusted Clinician  
Telephonic  
Web  
Mobile



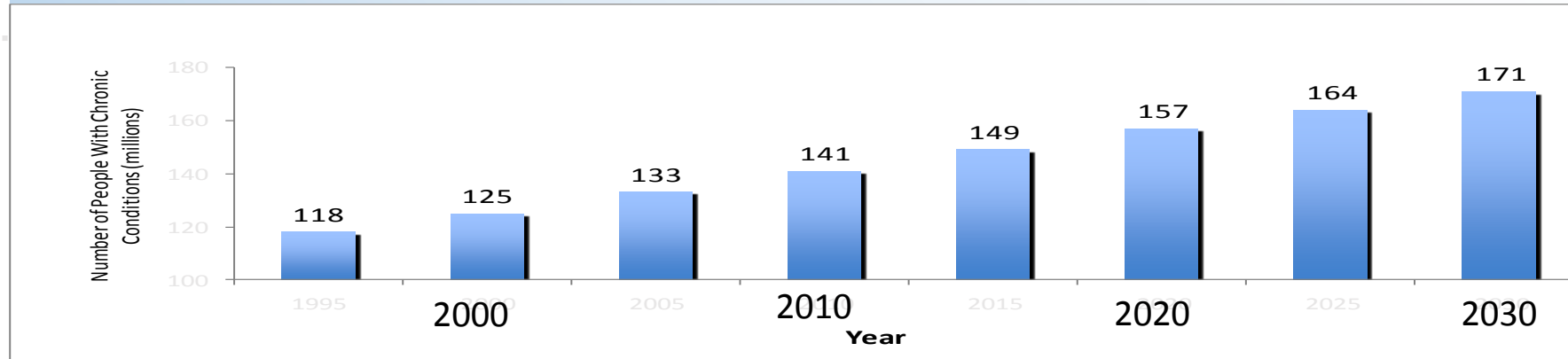
### Intervention

Education  
Referral Management  
Care Management



### Impact

Quality of Care  
Cost of Care  
Satisfaction



# BIG DATA WILL PLAY AN IMPORTANT ROLE

## KEY HEALTH INFORMATICS TOOLS FOR IDENTIFICATION, COMPARISON & PREDICTION

### Severity Indexing

- **Prioritize & categorize registry based on illness burden**
  - Severe – Care Management
  - Moderate – Coordinated Care
  - Mild – Patient Education
- **Achieving fairness when comparing**



### Predictive Modeling

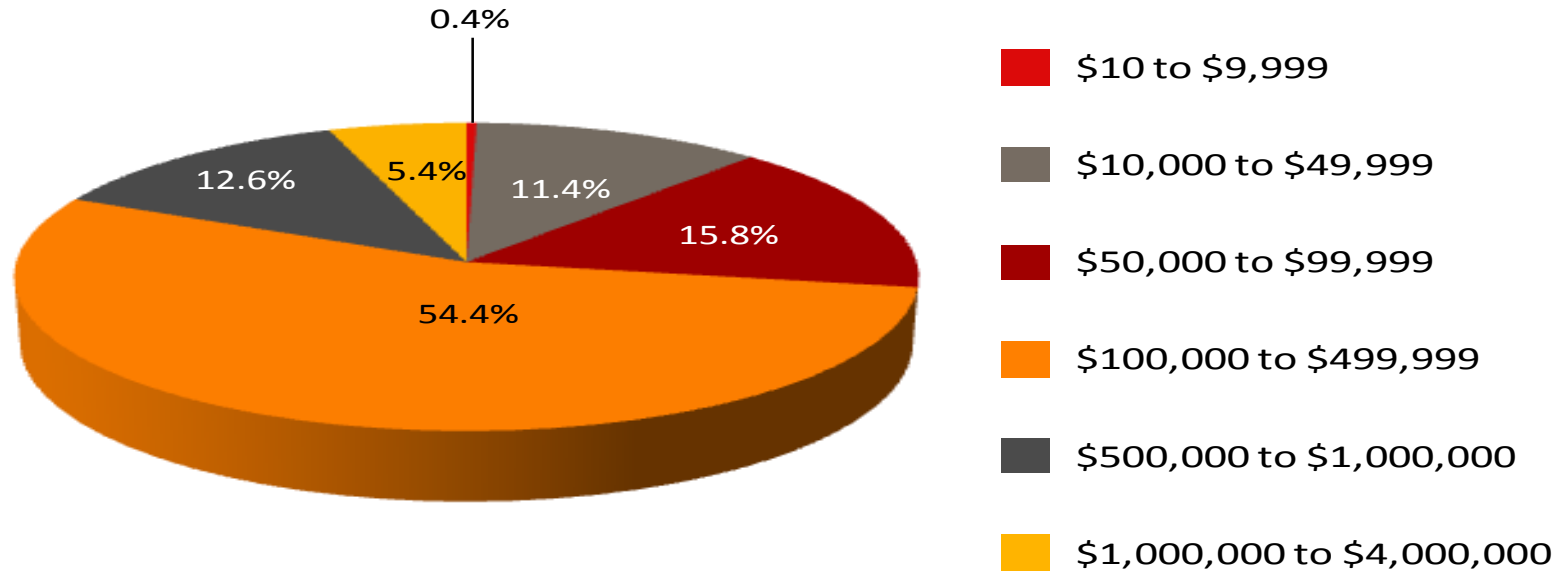
- Identify patients before the catastrophic event
- Predict future trends
- **Prove that things did not happen**



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# CATASTROPHIC ILLNESS

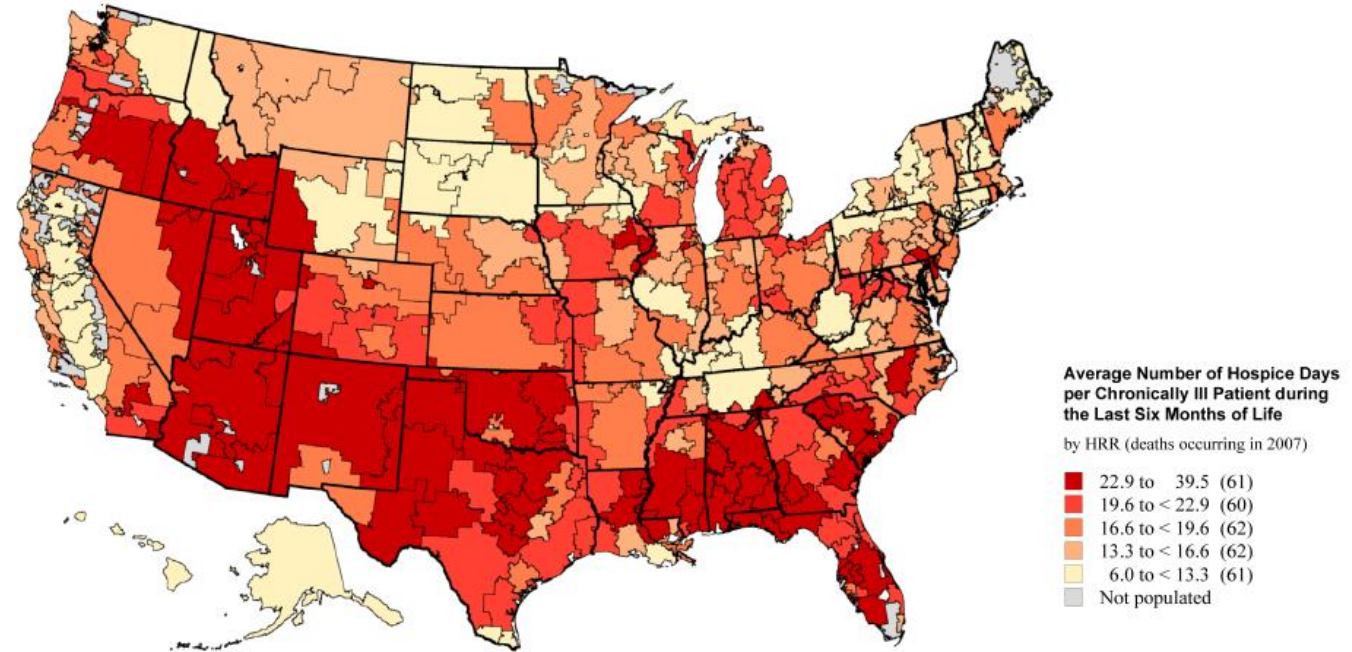
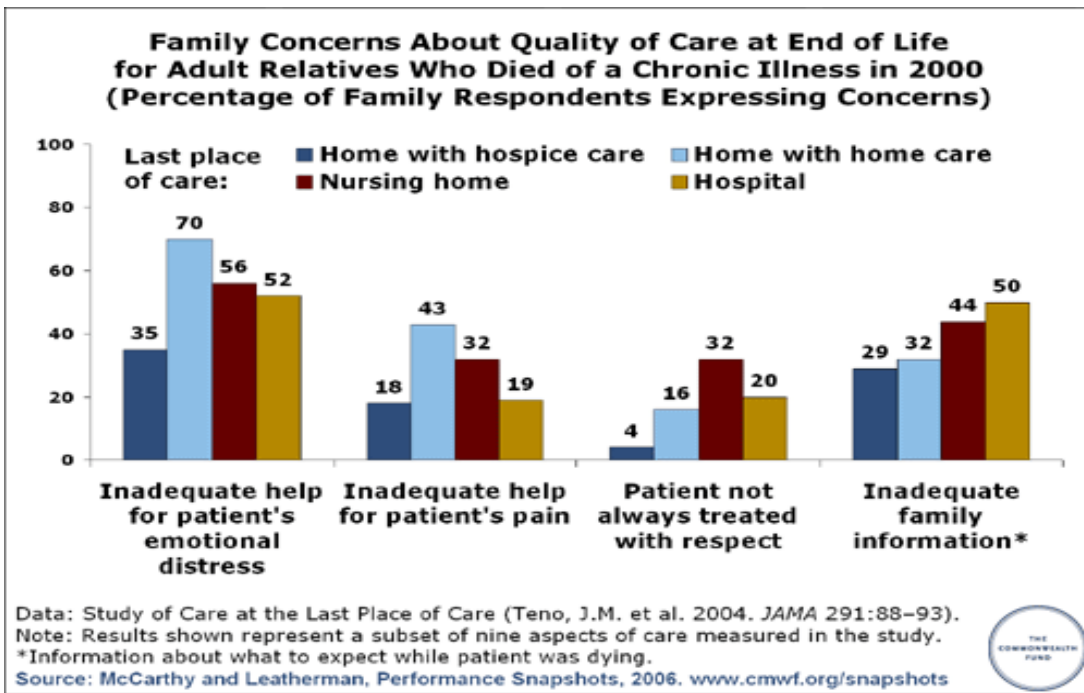
## FUTILE CARE COSTS TIED TO IN-HOSPITAL DEATH



Medical and prescription costs in last year of life (proxy) by range

20,389 patient cohort from 79 Million patient Truven Health Analytics database  
Total cost for these patients was over \$2 billion

# HIGH SCORES FOR HOSPICE CARE WIDE VARIATION OF USE



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# What is the role of the Department of Behavioral Health and Intellectual Disability Services?

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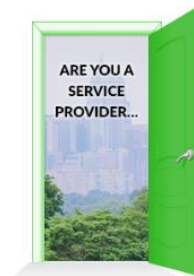
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## RECOVERY, RESILIENCE & SELF-DETERMINATION

Welcome to Philadelphia's Department of Behavioral Health and Intellectual disAbility Services (DBHIDS) Website. The City of Philadelphia has integrated its behavioral health care and intellectual disability services into one comprehensive system.



# DBHIDS

## DEDICATED TO PROMOTING HEALTHY BEHAVIORS & COMMUNITIES

### Public Education & Training

DBHIDS is dedicated to promoting healthy behaviors and healthy communities through education and awareness building strategies. DBHIDS has developed a variety of comprehensive and easily accessible online resources and trainings to strengthen awareness of behavioral health tools, services and support available for individuals and families.

- **Healthy Minds Philly**

A virtual resource designed to provide awareness and education on behavioral health issues and to offer helpful information, 24 hours a day, 7 days a week. Healthy Minds Philly is home to:

- **Behavioral Health Screenings:** Quick, free and anonymous online screenings to learn whether you or someone you care about might be experiencing symptoms of behavioral health disorder.

- **Mental Health First Aid (MHFA):** A public education program that teaches the skills needed to identify, understand, and respond to signs of behavioral health challenges or crises. First Aid is given until appropriate supports are received.

- **Behavioral Health Training and Education Network**

Designed to support DBHIDS and other human services systems by planning, coordinating, and providing quality learning experiences in Behavioral Health for the entire system, including individuals and their family members, DBHIDS staff members and staff of other service provider organizations.

### Prevention & Early Intervention

DBHIDS understands the earlier we intervene with behavioral health issues, the faster we are able to provide professional care as a community. This requires paying attention to social determinants of health, which include the availability of support, experiences of trauma, access to behavioral health care, educational and economic opportunities, and the social and physical environment. We do this by partnering with city agencies including the criminal justice, housing, school, and child welfare systems, as well as the behavioral health treatment system and the general public.

- **Community Response Teams**

Community Response Teams provide community support and crisis response services to communities affected by disasters, violence, or other events which require emotional support and psychoeducation as part of coordinated response effort.

- **Crisis Intervention Team Training**

The Crisis Intervention Team (CIT) is a collaboration between DBHIDS staff, the Philadelphia Police Department, and other stakeholders designed to reduce conflict during encounters between police and community members with mental health challenges. CIT training emphasizes the principles of violence prevention, de-escalation and community collaboration.

- **Infant Toddler Early Intervention Program**

The Philadelphia Infant Toddler Early Intervention Program is an entitlement program for infants and toddlers between the ages of birth to 3 years of age who are eligible. Anyone can make a referral to Early Intervention and all referred children will receive a developmental assessment and many will also receive a multidisciplinary evaluation. All children eligible will be assigned a service coordinator and all Early Intervention Services are delivered at no cost to the family.

### Community Engagement

Public education around behavioral health issues is necessary to promote overall health and well-being. Through partnerships with community based agencies and connecting with public leaders, DBHIDS works to promote the health of Philadelphians by supporting initiatives that strengthen individuals, families and communities.

- **Mural Arts/Porch Light Program**

A groundbreaking public art approach to achieving health and wellness in Philadelphia done in collaboration with the City's Mural Arts Program. Porch Light works closely with communities to uplift public art as an expression of community resilience and a vehicle of personal and community healing.

- **Engaging Males of Color (EMOC) Initiative**

A newly established and targeted initiative designed to address the impact of health, economic and educational disparities experienced by males of color. Its goals are to promote better understanding and awareness of behavioral health challenges, reduce the associated stigma and improve the quality of life for males of color throughout the Philadelphia region.

- **Community Coalition Initiative**

Community Coalition Initiative was designed to better deliver behavioral health services to targeted communities where there might be significant numbers of vulnerable or at-risk individuals. The program has built partnerships with seven coalitions of community-based organizations (CBOs) and licensed behavioral health providers to help reach community members who can most benefit from these programs, support and treatment services.

- **Faith Based Unit**

In 2005, DBHIDS created a Faith-Based Initiative to build partnerships with city churches, mosques, and synagogues to reach members in various faith communities. These coalitions provide another way to connect people with behavioral health and developmental disabilities with needed supports and services.

### Cross System Collaboration

Cross-system collaboration is an essential component to achieving overall wellness. Behavioral health settings are not the natural habitat of many community members. DBHIDS supports innovative cross-system collaboration to strengthen the capacity of the workforce to meet the health and wellness needs of people.

- **Tobacco Recovery and Wellness (TRWI) Initiative**

TRWI is a partnership between the Philadelphia Department of Public Health Tobacco Policy and Control Program, University of Pennsylvania's Comprehensive Smoking Treatment Program, and the Department of Behavioral Health and Intellectual disAbilities (DBHIDS) that engages behavioral health providers to incorporate evidence-based tobacco dependence treatment into their clinical and community practice.

- **Homeless Outreach Unit**

DBHIDS supports five agencies, led by Project Home to engage people living on the streets of Philadelphia. The other agencies are Horizon House, SELF Inc., the Mental Health Association of Southeastern PA and Hall Mercer Community Mental Health Center. The majority of the persons they engage are believed to suffer from behavioral health challenges, particularly co-occurring mental health and addiction challenges.

### Innovative Treatment Services

DBHIDS recognizes that effective and innovative practices are essential components of a resilience- and recovery-oriented behavioral health system. DBHIDS is committed to ensuring efficient, sustainable, "state-of-the-art" treatments are a part of the array of services and supports available to individuals who need them.

- **The Philadelphia Alliance for Child Trauma Services**

A network of child serving systems and organizations that provides the most effective practices for traumatized youth and their families aimed to increase the number of children who receive the most effective trauma-focused and trauma informed care in Philadelphia.

- **Evidence-based Practice and Innovation Center (EPIC)**

DBHIDS' Evidence-based Practice and Innovation Center, or EPIC, seeks to advance system-wide efforts to help support the implementation, sustainability and accessibility of behavioral health Evidence-based Practices in Philadelphia.

# DBHIDS

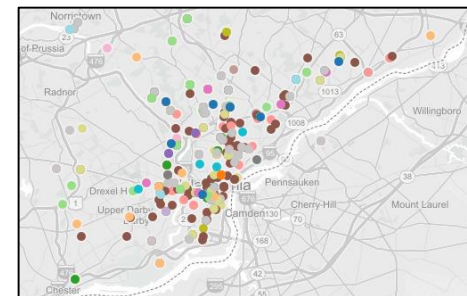


City of Philadelphia  
**Mural Arts Program**

**First Aid For Mental Health**



**Tobacco Recovery  
Wellness Initiative (TRWI)**



**Crisis  
Response  
Centers**



**Prevention of  
Bullying,  
Violence,  
Substance  
Abuse, Social  
Skills  
Building**



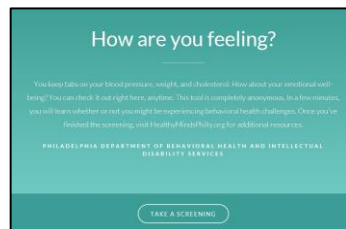
**BHSI Intensive Case  
Management Services**

**Community  
Response  
Teams**



**Emergency Preparedness and Response**

**Drug Free  
Coalitions**



**RECOVERY RESILIENCE SELF-DETERMINATION**



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