Whole Health

PREVENTION IS THE CURE

Family Medicine & Public Health

Risk Management : 1990-2003

Maritime | Energy | Environment | Healthcare | ...

Risk, Process & Regulatory Policy

Det Norske Veritas

Founded: 1864

HQ: Høvik Norway

Offices: 100 countries

Customers: 100,000

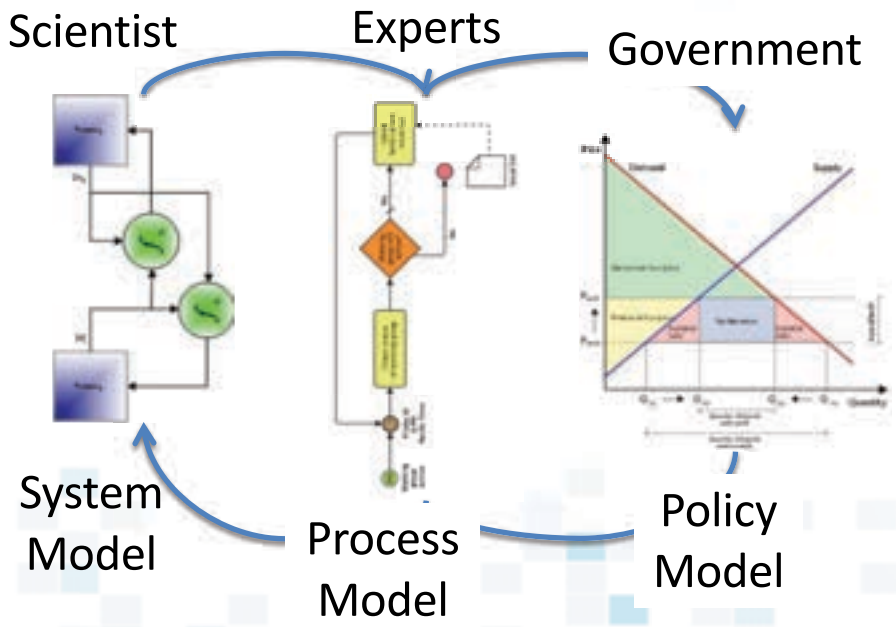
Government - Industry services to regulate safety, improve processes & to protect natural resources

Advocates Social Responsibility

Passion for modeling systems and their connection to other systems… outcomes & risk

Dynamic System Modeling

SYSTEM-SYSTEM MODELS



Regulatory Policy & Industry Best Practice

Avoiding Chernobyl Disasters

April 25 1986

Control rods removed without safety system

April 26 1986

1:23AM Uncontrollable chain reaction occurred

Explosion

50-185 Metric Tones of Radioactive Material

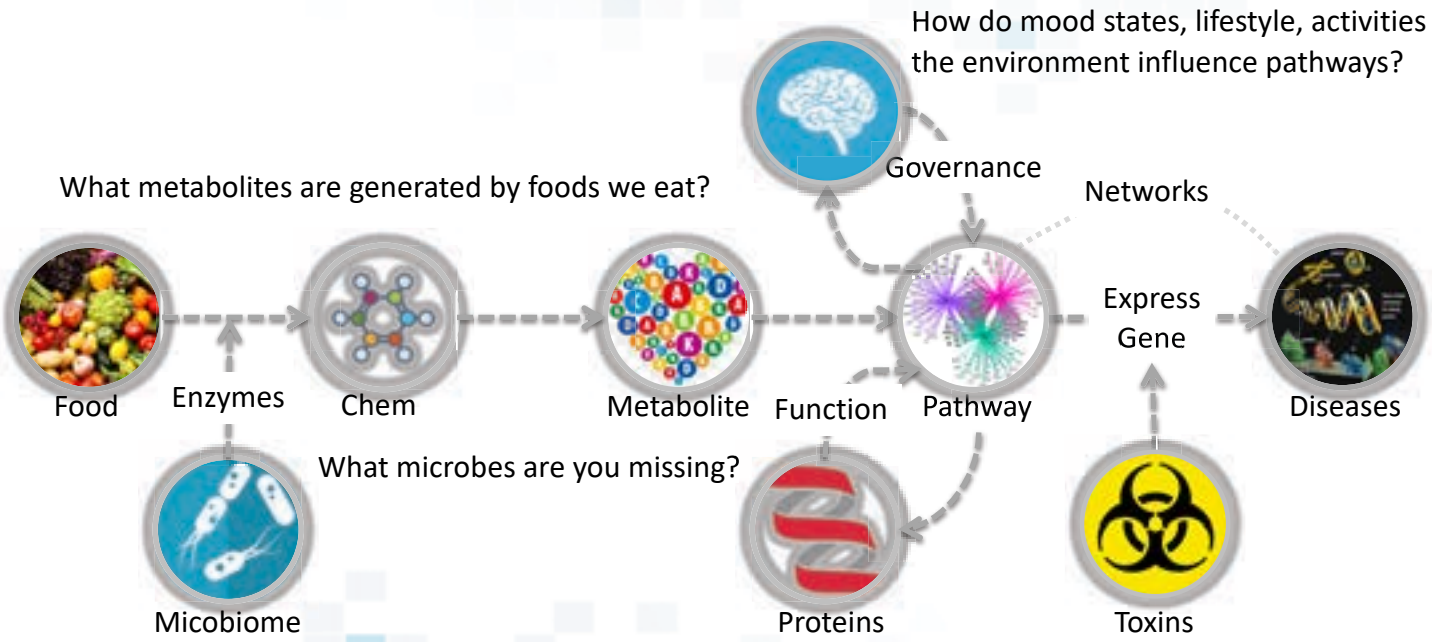
3x more radioactive than Hiroshima

Expert in Healthcare Utilization

Broken Bones

Sea Creature Injuries

Healthcare Journey Begins : 2004-2007



Breast Cancer Treatment – Protein Conformation & Function

Connection Between Behavior, Environment & Disease

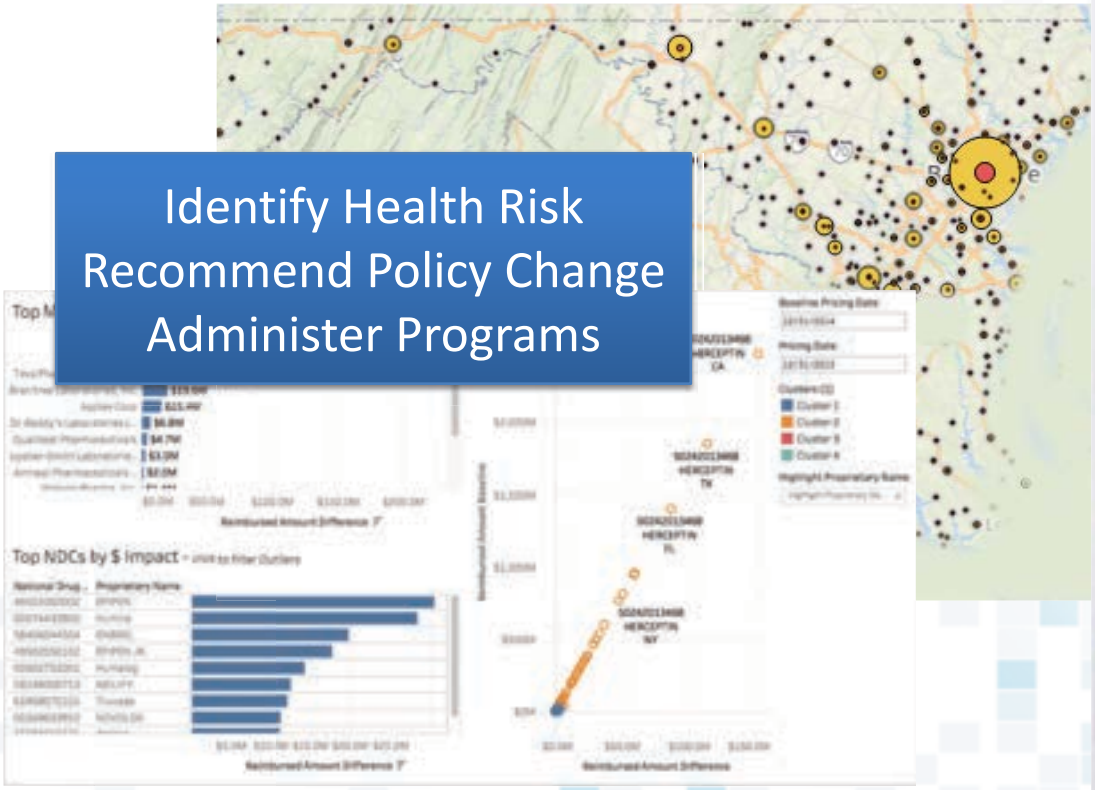
Missing Data – But I Kept Working, Integrating More Sources

Various Projects: 2008-2015

Institutional Care

Community Care

Xerox Government Healthcare Services



Identify Health Risk
Recommend Policy Change
Administer Programs

Health Informatics

26 States

Health & Social Services and Medicaid

48 million

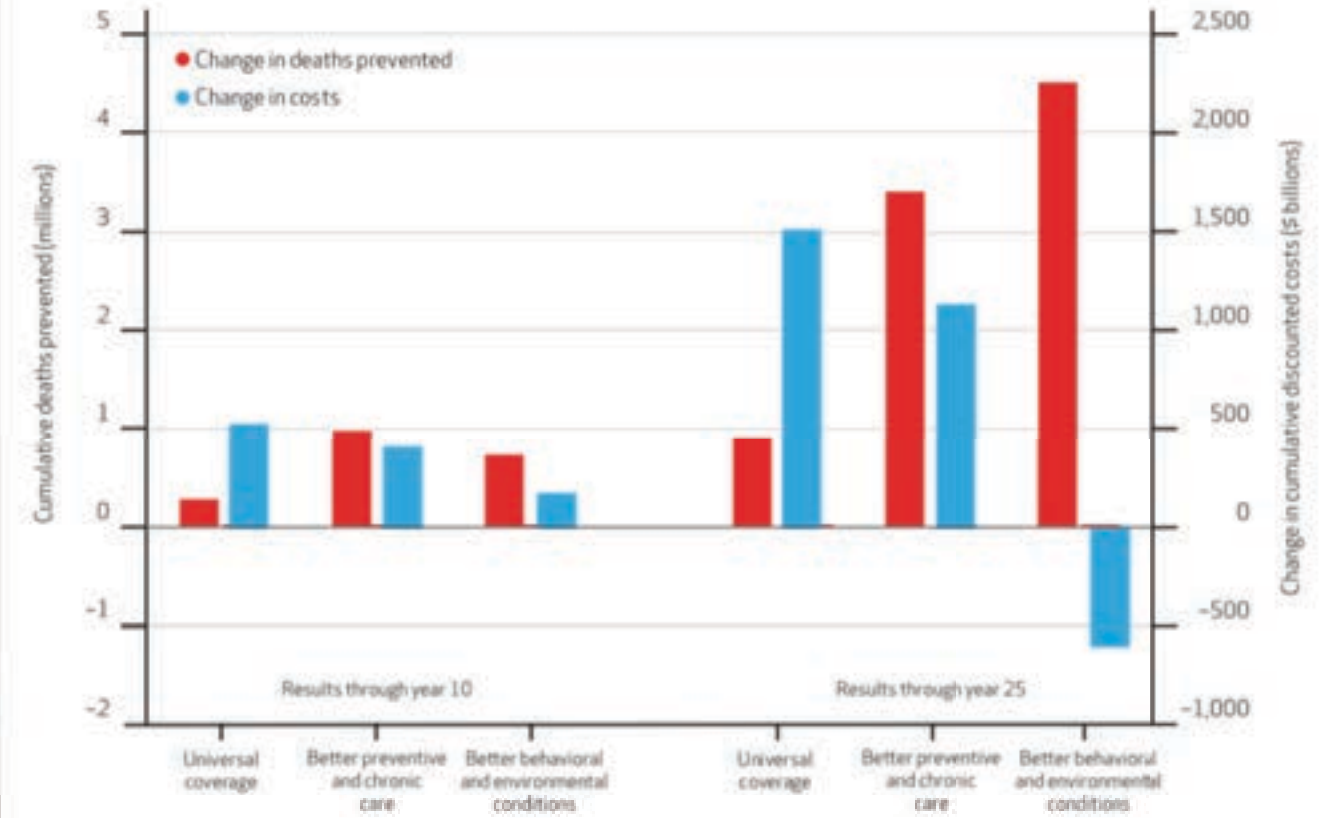
Medicaid & Medicare Beneficiaries

1.3 petabytes

Medical & Pharmacy Claims Data

Healthcare Policy Strategies

Deaths Prevented And Change In Health Care Costs Plus Program Spending, Three Intervention Scenarios, At Year 10 And Year 25



Milstein, et al. (2011) https://www.healthaffairs.org/doi/full/10.1377/hlthaff.2010.1116

Government Healthcare Strategy

The Federal Government's Plan for Healthcare is ???... No one knows

1. Behavioral Health
2. Care Delivery
3. Chronic Disease
4. Payment Reform

46 States Are Using Waiver Programs to Innovate Locally

Source: Osher Wheel of Health - https://www.oshercollaborative.org/clinical-care

My Experience

BP 2 ½ Years Ago

Max 148 mm Hg

Systolic Pressure Under Stress

$\overline{X}$ **135 mm Hg**

Systolic Pressure

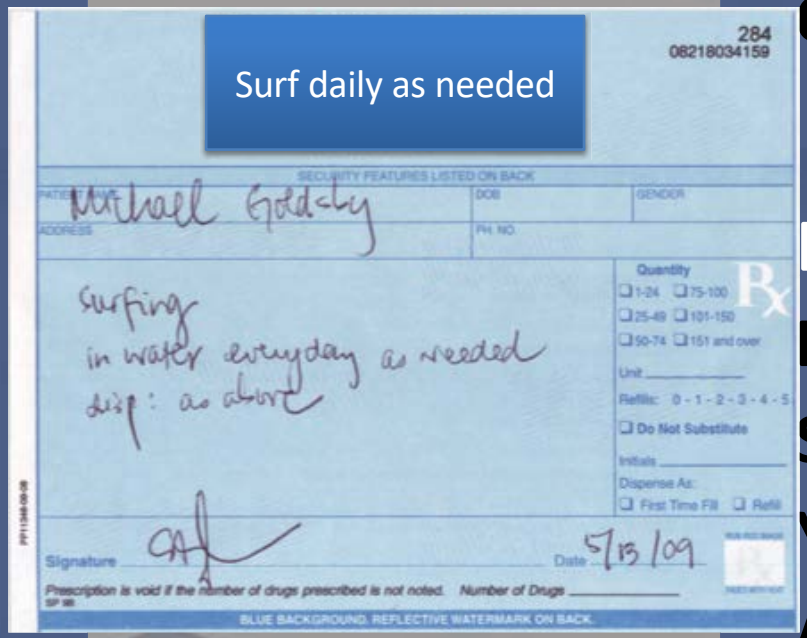
BP Now

Max 128 mm Hg

Systolic Pressure Under Stress

$\overline{X}$ **112 mm Hg**

Systolic Pressure



Some Impact

Whole Food Diet

CrossFit Exercise

Big Impact

Downhill Bike

Surfing

Yoga & Meditation

Ashwagandha

Probiotic

Back-to-Basics Community Health

	Health Risk Identification	Resources Utilization	Optimize Treatments	Options for Sustainability
Data Science				
Treatments				
	Community Sustainable Agriculture	Integrative Community Wellness	Integrative Medicine	Environmental Toxin Reduction

What's Needed to Create a Better Community Health Delivery System

Whole Health Project Begins: 2018

Holistic Screening & Diagnostics	Holistic Treatment Optimization	Healthcare Policy Simulation
Health Works System Physiology Behavioral Environmental ...	**Primary Care** Enjoyable Activity Missing Nutrients Remove Toxins Manage Stress ...	**Government** Better Utilization Local Care Gaps Policy Strategy Cost Saving ...

Better Community Health Delivery System

Whole Health Partnerships

Kentucky Medicaid - Avoidable Hospital Admissions (5yr. prediction)

UNIVERSITY OF LOUISVILLE SCHOOL OF MEDICINE

$1.06B Diabetics Med Costs
Modifiable Complications
Saving 5% = $53M yr.

Patients with +7 yr. history
~2M CMS diabetic patients
Survival Analysis
+25% Population

Depression – Top Predictor

UC San Diego SCHOOL OF MEDICINE

Added Holistic Dimensions

Stress & Mood Disorders
Relationships & Community
Environmental Conditions
Access to Nutrients & Food

...

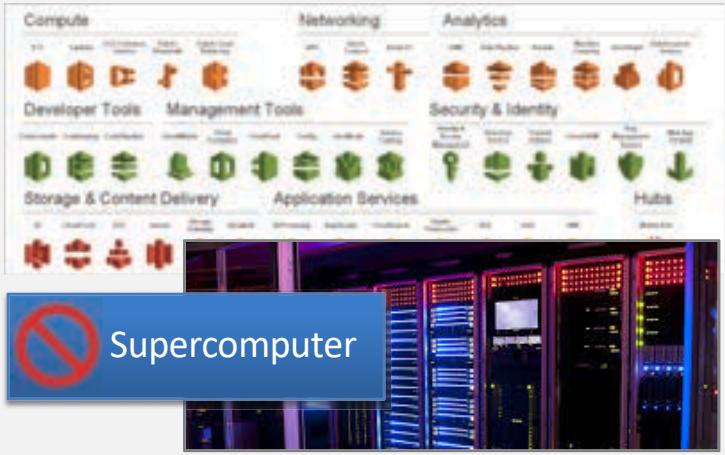
The Whole Health Platform

Focused on Community Health Delivery Innovation

Integrated Datasets

Census · Nhanes · MEPS · HRSA · CDC · CMS · NIH · BRFSS · AHRQ Advancing Excellence in Health Care

Computing Platform



~$2.5 – $5.0 Million Cloud Platform
State Partnership Studies
University Innovate Partnerships

Counter-Offer

Technology Architecture

$$,$$$

Wife Approved

Research IT Help

- They helped us come up with a technology architecture
- helped us put in place the security approvals we needed for our datasets
- connected us to SGCI to help us manage the technology work and get CS resources to write code
- connected us to SDSC data center to host our servers for the project
- connected us to IT people and helped move the process along for network setup

And They did this all for FREE

Current Status

- Building the Platform SDSC Center
- AHRQ Grant Community + Behavioral Health
- Working on Industry Partnerships
- Planning to Approach State DHSS for POC
- Planning to Add University Collaborators

Creating new standards for **Integrated Primary Care** that connect community health to the primary care system. Partnered to develop distributed decision support models that improve **community based screening & diagnostics**.

Developed a **community based public healthcare system** that uses community health workers & clinics to deliver preventive care. Partnered to improve the technology available to CHW for **better preventive delivery**.

The simple idea of preventing chronic disease

"An ounce of prevention is worth a pound of cure."

Benjamin Franklin

Imagine such a simple concept in healthcare "keep people healthy so they use the high cost healthcare services less"

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