Healthography:
Public Health of the Future

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The most serious PH challenges

- Chronic diseases rooted in behavioral choices
U.S. Losing Ground in Health

In 1980, the U.S. ranked 15th among affluent countries in life expectancy at birth. By 2009, it had slipped to 27th place.

Health in the U.S. is worse than in other developed nations on more than 100 indicators.

Central Challenge: Create the **Healthiest Nation** in One Generation

- Greater focus on prevention and wellness.
- Address the broader issues that affect health — from poverty to poor housing, education, transportation and the environment.
- It’s not enough to individually make choices that will improve our own health.
- Ensure that everyone in all communities has the chance to make those same healthy choices.

**APHA Strategic Map**

- Strengthen public health practice
- The Healthiest Nation
- Build a public health movement
- Align organizational capacity and infrastructure

- Creating health equity
- Ensuring the right to health and health care
Space...The Final Frontier...of PH

“We all have our own ‘geographies’ as well as our biographies...Our ‘health’ and our ‘geographies’ are inextricably linked...Where you live affects your risk of disease or ill-health”

Modern public health sees the environment as social and psychological, not merely as physical. In this sense, then, ‘environment’ and ‘place’ converge to provide a spatial context for health that transcends the individual’s own behavior and health outcomes

Contextual Health—Medical Intelligence

A more precise clinical understanding of the links between their health and where they live, work, and play

“Geomedicine is our environmental DNA”

(Bill Davenhall, ESRI)

“Clinicians who consider the effects of both individual and environmental risks when assessing a patient stand a better chance of being effective with their treatment and help reduce the disparities in health”

“…there is little point in treating an illness only to send patients back to live in the conditions that made them ill in the first place.”

Rebecca Onie (CEO of Health Leads) at the 2014 Davos World Economic Forum

A healthcare system focused on health, rather than on care, would look routinely at the wide context of patients’ lives in order for physicians to be able to prescribe treatments that are medically appropriate and practically relevant in a patient’s life.
Despite the *availability* of interventions, blood pressure and tobacco smoking in the US have stagnated or even reversed, and there has been a steady *increase* in overweight and obesity.
Healthography In Action
Healthy People in Healthy Communities Through Multi-factorial, Cross-sector Interventions
Blue Zones®: A Paradigm for Health Improvements

In August 2011, Iowa Governor Terry Branstad announced the Healthiest State Initiative, where he challenged all Iowans to rally together to make Iowa the healthiest state in the nation by 2016 as measured by the Gallup Healthways Well-Being Index®.

Iowa recently moved from 16th in 2011 to 9th in 2012, so we're headed in the right direction. But there is still work to be done to reach number one.
Blue Zones®

Where in the World?

- Ikaria, Greece
- Sardinia, Italy
- Nicoya, Costa Rica
- Okinawa, Japan
- Loma Linda, California

Hot spots of Health & Vitality

Longevity oases
Sardinia: The First Discovered Blue Zone®

Deconstructing BZs→Genetics

- Studies among Sardinian and Okinawan centenarians provide empirical evidence of a genetic component in longevity

Deconstructing BZs → Lifestyle


Deconstructing BZs → Environmental Factors

“Factors affecting energy expenditure of male population such as occupational activity and geographic characteristics of the area where the population resides are important in explaining the spatial variation of Sardinian extreme longevity”

Deconstructing BZs

1. Environmental quality
2. Conducive-connected built environment
3. Low stress and sense of purpose
4. Community resilience-strong social fabric
5. Healthy lifestyles are enabled (default: “culture of health”)

Lifestyle

Genetics

Blue Zone

Context
Gray Zones

Convergence of:

1. Diminished environmental quality
2. Non-conducive, disconnected built environment
3. Vulnerable communities—life is hard
4. Unhealthy behavioral choices

Regardless of an individual's diet/lifestyle risk factors, living in a poorer or more socioeconomically deprived neighborhood may increase a person's health risks, and is more likely to die sooner.


The Zone Showdown

Therapeutic Landscapes

Favorable convergence of environmental, economic, and social systems, thereby supporting healthy lifestyle choices, promoting health and wellbeing

Detrimental Landscapes

Cumulative impact of multiple exposures to environmental and social stressors:
- Physiologic dysregulation (allostatic load)
- Healthy choices are hindered

Healthy, Resilient Communities

Vulnerable Communities
W San Bernardino

Gray Zone

Loma Linda

Blue Zone

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, IGP, swisstopo, and the GIS User Community
Loma Linda, California: The American Blue Zone®

- The American Blue Zone of Loma Linda (60 miles east of Los Angeles) is home to 10,000 Seventh-Day Adventists (SDAs)
- SDAs are the longest-lived people in America
  - Lower risk of chronic diseases compared to the average American and enjoy a long, healthy life
- **Adventist Health Studies** based at Loma Linda University School of Public Health
The Adventist Twist

Adventist Health Study-2 Cohort Density in the Continental US
Key Questions For PH Moving Forward

1. Can Blue Zones become commonplace?

2. How do individual lifestyle factors & context interact to influence people’s “biographies” and daily “geographies”? 
A Healthgraphic Paradigm

- BZs based on “health,” not on the measurement of disease

- BZs/GZs point to complex interactions among multiple factors
  - Therefore, multi-level, cross-sector interventions are needed
  - Change conditions to change consequences
  - Emphasis on physical & social transformations BUT lifestyle interventions are also needed to achieve “health resilience”
A Healthgraphic Paradigm

- Intuitive framework for:
  - Conceptualizing key issues pertaining to health disparities and chronic diseases.
  - Optimizing solutions (translational PH research) and enhancing the delivery of interventions (PH practice) to address the pressing public health challenges in the 21st century by applying geospatial analysis and tools.

- Healthographic paradigm for community transformation (revitalization) → “turning GZs into BZs”
  - (e.g., RWJF: “Time to Act”)

- GZs as focalized “levers” for reducing/eliminating disparities (i.e., creating healthy, resilient communities).