WEBINAR SUMMARY

How to Measure and Improve Population Health

Featuring Sandro Galea, MD

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How to Measure and Improve Population Health

PRESENTER:
Sandro Galea, MD, Robert A. Knox Professor and Dean, Boston University School of Public Health

MODERATOR:
Steve Prokesch, Senior Editor, Harvard Business Review

Overview
Despite increased spending on healthcare, population health in the United States has declined precipitously in recent years compared to other high-income nations. To improve population health, new measurement approaches are needed. Population approaches to disease prevention are often more impactful than approaches that focus on small segments. More attention must be paid to ubiquitous causes that have small, but cumulative, effects on health. Population health initiatives always result in tradeoffs between efficiency and equity. To fully understand the implications of decisions, practitioners must measure both overall population health and the gaps between the health “haves” and “have-nots.”

Context
Sandro Galea discussed flaws in population health measurements. He suggested different approaches to measuring population health with the goal of producing different outcomes.

Key Takeaways
Although U.S. spending on health far exceeds other countries, life expectancies are falling behind.
The United States is experiencing a population health crisis. Mortality rates from non-communicable diseases, like cancer or heart disease, exceed those of other high-income OECD countries. In addition, American mortality rates across all age groups are worse than median rates in other OECD nations.
Health problems among the American population are relatively recent. In 1980, the U.S. was at the top half of life expectancy among high-income countries. Over time, the U.S. has drifted to the bottom and life expectancies have fallen behind countries like Japan, Singapore, Chile, and Costa Rica.

One hypothesis is that the United States isn’t investing enough in health. Yet, the U.S. spends 40% more than comparable countries. As other nations increase spending, life expectancies there increase. This is not the case in the United States.
“It’s hard to think of another sector in the United States that spends more than any other country, but gets substantially less. This is what’s happening in health.”
—Sandro Galea

**Focusing on a small segment of the population has negative implications for population health.**

Within any given population, some people will be sick. The goal of population health is to reduce the number of sick people. Population health is not about focusing on one small segment of the population. However, in the United States we do that all the time. This has contributed to the poor state of population health we find ourselves in. New ways of measuring health can help.

**Thinking of population health as continuous, rather than binary, leads to different interventions.**

Obesity is a serious problem in the United States. People with a body mass index (BMI) of 30 or higher are considered obese. Today, 40% more Americans are obese than 30 years ago.
FIGURE 4: CHANGES IN THE DISTRIBUTION OF BODY MASS INDEX AMONG U.S. ADULTS, AGED 20-74

From a population health perspective, attention must be given to people throughout the entire distribution, not just to those to the right of the obesity line. Today, many more people are hovering just below the obesity threshold than 30 years ago. Interventions that focus only on those who are obese ignore those just below the borderline.

Understanding the entire population leads to different interventions. For example, a high-risk approach to obesity focuses only on individuals with a BMI of 30 or more. Interventions for this group might include gastric bypass surgery or intensive weight loss programs. In contrast, a population approach to obesity targets the entire population.

FIGURE 5: HIGH-RISK VS. POPULATION APPROACHES TO DISEASE PREVENTION

Note: NHANES = National Health and Nutrition Examination Survey, a continuous program of studies designed to assess the health and nutritional status of a nationally representative sample of children and adults in the United States.
Source: Ogden et al., 2007.
Small changes in ubiquitous causes matter a lot.

Small changes in ubiquitous causes matter more than large changes in rare causes. It is human nature to focus on things with a big impact and to forget about those things that are always present and that have small impacts on everyone.

When it comes to population health, we should measure ubiquitous causes that impact everyone. This means understanding the broader context of people’s lives. Galea offered several examples:

- **Cocaine exposure and childhood development.** In the 1980s and 90s, the media focused on babies born to mothers who took crack cocaine during pregnancy. Careful measurement over the years, however, found little difference in the development of “crack babies” and children who weren’t exposed to cocaine. The real problem is the broader environment. Babies born into poverty and into situations with limited environmental stimulation are at a developmental disadvantage. The problem isn’t exposure to cocaine.

- **Motor vehicle fatalities.** Motor vehicle safety is a major population health success story. Over the past century, motor vehicle fatalities per vehicle miles driven have dropped significantly. We are almost 400 times safer today than 100 years ago. Safety advances didn’t come from focusing on the vehicle operator. Improvements came from addressing ubiquitous forces like the quality of cars and roads. Drivers now benefit from seat belts, airbags, shatterproof glass, and laws against drunk driving.

- **Calories in foods.** Food is a ubiquitous force around us. Over the past 20 years, the calories in common foods have increased dramatically. This has contributed to obesity in America.

We must be alert to ubiquitous forces because they make all the difference.
Population health is predictable, but one individual’s health is not.

It is possible to predict the health of populations but next to impossible to predict the health of specific individuals. This has implications for measuring and improving population health. It also has implications for commercial applications and how they are marketed.

We must trade off efficiency and equity.

When it comes to health, the U.S. suffers from equity issues. People with more wealth enjoy better health. For example, the gap in life expectancy between the lowest and highest income quintiles for people born in 1930 is five years, while the same gap for people born in 1960 is 13 years. In addition, life expectancy among women in the wealthiest quintile increased between 1980 and 2010, while it decreased for women in the poorest quintile.

Interventions that improve health overall may create or worsen health inequity. Two examples are:

1. Two groups have different disability-adjusted life years (DALYs). Interventions are applied that improve health for each group by the same number of DALYs. As a result, these improve overall population health. However, the less healthy group doesn’t gain the full benefits of the interventions and the gap between the two groups grows.
2. Two groups have the same disability-adjusted life years. Interventions are applied, but the group with the low socioeconomic status derives less benefit than the high socioeconomic status group. This creates health inequity between the groups.

![Diagram showing health inequity between groups](image)

**FIGURE 9: GAINING OVERALL POPULATION HEALTH AND CREATING HEALTH INEQUALITIES**

The population health interventions we pursue are a matter of values, rather than science or measurement. To understand the full picture, we must measure population health overall and the gaps between the health haves and have-nots. These measurements must occur before we engage in value discussions.

“Population health is influenced by social relationships, living conditions, neighborhoods, institutions, and social and economic policies. To predict and improve population health, we must measure all the forces and understand how they influence the tradeoff between efficiency and equity.”

—Sandro Galea

**Other Important Points**

- **Incentives.** To improve population health, incentives are needed at multiple levels: private actors, health systems, and individuals. Behavioral economics experiments, for example, could incent individuals to engage in healthier behaviors. Health systems could benefit from incentives that keep patients healthy, rather than treating them after they are sick.

- **Employer wellness programs.** Most wellness programs have no meaningful impact on employee health. Many also ignore the employee context and create unfair expectations. For example, it is not practical to tell employees to walk every day when they live in high-crime neighborhoods.
• **The physician’s role in population health.** Many doctors see their role as the only thing that matters in the health space, which is wrong. Medical schools must change the conversation with students about population health.

Sandro Galea—a physician, epidemiologist, and author—is Dean and Robert A. Knox Professor at Boston University School of Public Health. He previously held academic and leadership positions at Columbia University, the University of Michigan, and the New York Academy of Medicine. He has published more than 800 scientific journal articles, 50 chapters, and 13 books, and his research has been featured extensively in current periodicals and newspapers. His latest book, *Well: What We Need to Talk about When We Talk about Health*, will be published by Oxford University Press in May 2019; Arianna Huffington has called it “a deeply affecting work from one of the important and innovative voices in American health and medicine.” Galea holds a medical degree from the University of Toronto and graduate degrees from Harvard University and Columbia University. He also holds an honorary doctorate from the University of Glasgow. Galea was named one of *Time* magazine’s epidemiology innovators and has been listed as one of the “World’s Most Influential Scientific Minds.” He is past president of the Society for Epidemiologic Research and of the Interdisciplinary Association for Population Health Science and chair-elect of the board of the Association of Schools and Programs of Public Health. He is an elected member of the National Academy of Medicine and the American Epidemiological Society. Galea has received several lifetime achievement awards, including the Rema Lapouse Award from the American Public Health Association and the Robert S. Laufer Memorial Award from the International Society for Traumatic Stress Studies. He is a regular contributor to, and his work is regularly featured in, a range of public media, including a standing column in *Fortune* magazine.

Steve Prokesch is a senior editor of the *Harvard Business Review*, where he acquires and edits articles on a variety of topics, including health care, strategy, operations, and innovation. An award-winning journalist, he has worked as a reporter and editor at *The New York Times*, *BusinessWeek* magazine, and *The Arizona Republic* and also was an editorial director at the Boston Consulting Group.