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Plenary Keynote- Dubai, UAE

**“Population Health + Quality Improvement:
Synergy for the future”**

24th October 2019

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Poor quality of care
is responsible for
10-15% of deaths
in low- and middle-
income countries.

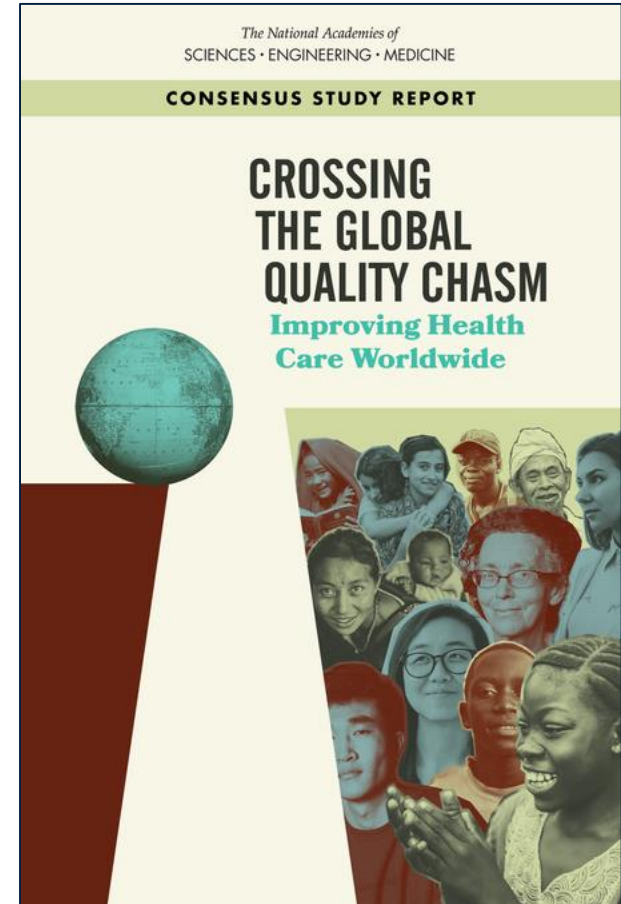


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... all hospitals are accountable to the public for their degree of success...

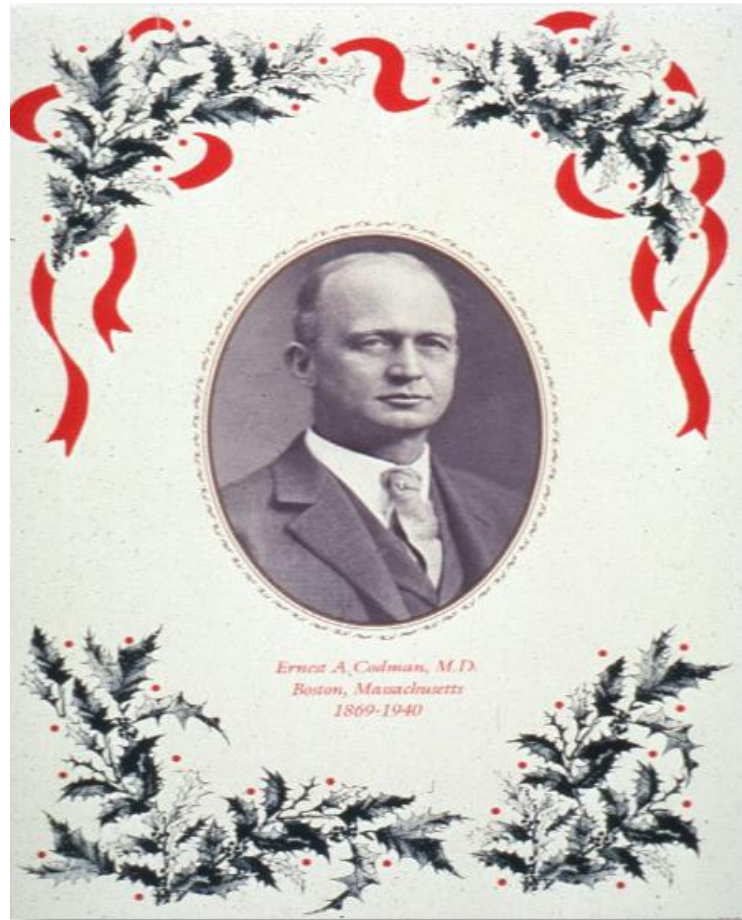
If the initiative is not taken by the medical profession, it will be taken by the lay public.

1918 Am Coll Surg

The New York Times

**Doctors Were Alarmed:
'Would I Have My Children Have Surgery Here?'**

BY ELLEN GABLER MAY 31, 2019



Honoring a once-scorned voice for medical openness

By **Liz Kowalczyk** | GLOBE STAFF JULY 21, 2014



DAVID L. RYAN/GLOBE STAFF



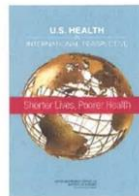
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U.S. Health in International Perspective

Shorter Lives, Poorer Health



The **United States** is among the wealthiest nations in the world, but it is far from the healthiest. Although Americans' life expectancy and health have improved over the past century, these gains have lagged behind those in other high-income countries. This health disadvantage prevails even though the United States spends far more per person on health care than any other nation. To gain a better understanding of this problem, the National Institutes of Health (NIH) asked the National Research Council and the Institute of Medicine to convene a panel of experts to investigate potential reasons for the U.S. health disadvantage and to assess its larger implications. The panel's findings are detailed in its report, *U.S. Health in International Perspective: Shorter Lives, Poorer Health*.

A Pervasive Pattern of Shorter Lives and Poorer Health

The report examines the nature and strength of the research evidence on life expectancy and health in the United States, comparing U.S. data with statistics from 16 "peer" countries—other high-income democracies in western Europe, as well as Canada, Australia, and Japan. (See Table.) The panel relied on the most current data, and it also examined historical trend data beginning in the 1970s; most statistics in the report are from the late 1990s through 2008.

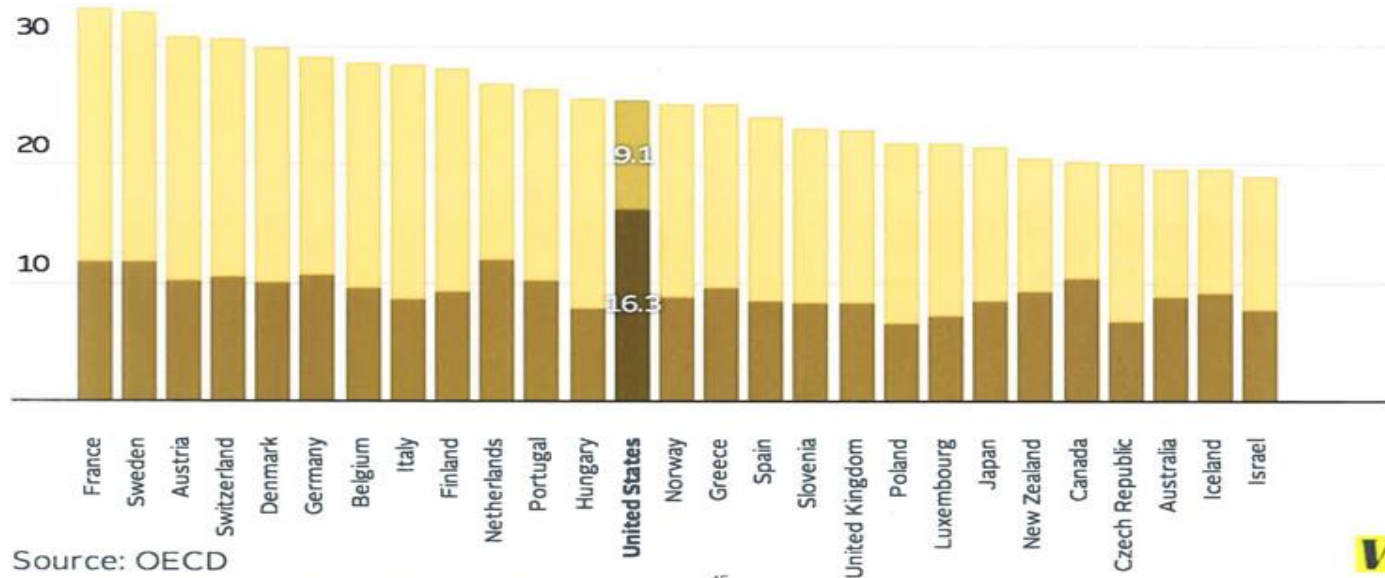
The panel was struck by the gravity of its findings. For many years, Americans have been dying at younger ages than people in almost all other high-income countries. This disadvantage has been getting worse for three decades, especially among women. Not only are their lives shorter, but Americans also have a longstanding pattern of poorer health that is strikingly consistent and pervasive over the life course—at birth, during childhood and adolescence,

For many years, Americans have been dying at younger ages than people in almost all other high-income countries. This disadvantage has been getting worse for three decades, especially among women.



The U.S. is an anomaly in health and social spending patterns

■ Health expenditures as % of GDP ■ Social service expenditures as % of GDP



Source: OECD

<http://www.vox.com/2014/7/7/5877227/the-giant-problem-american-health-care-ignores>

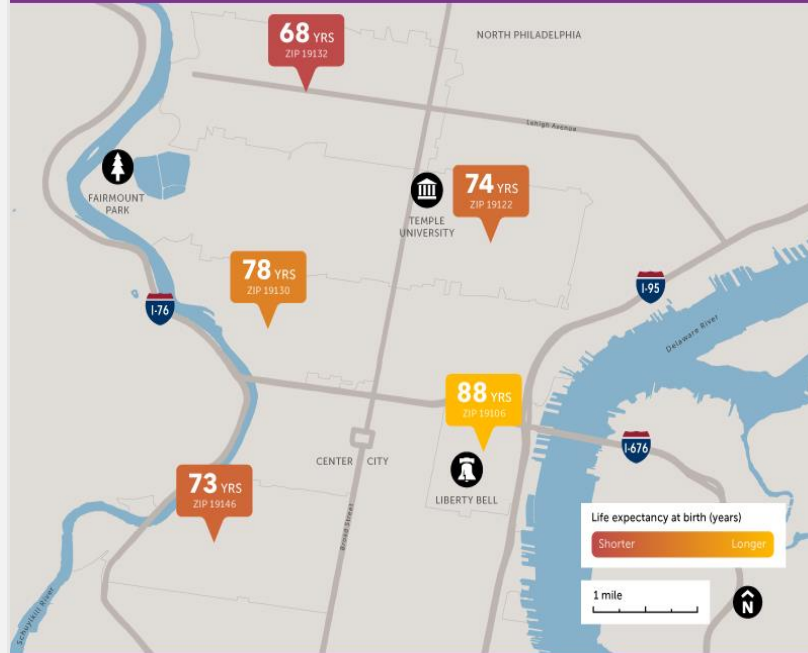
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PHILADELPHIA, PENNSYLVANIA

Short Distances to Large Gaps in Health

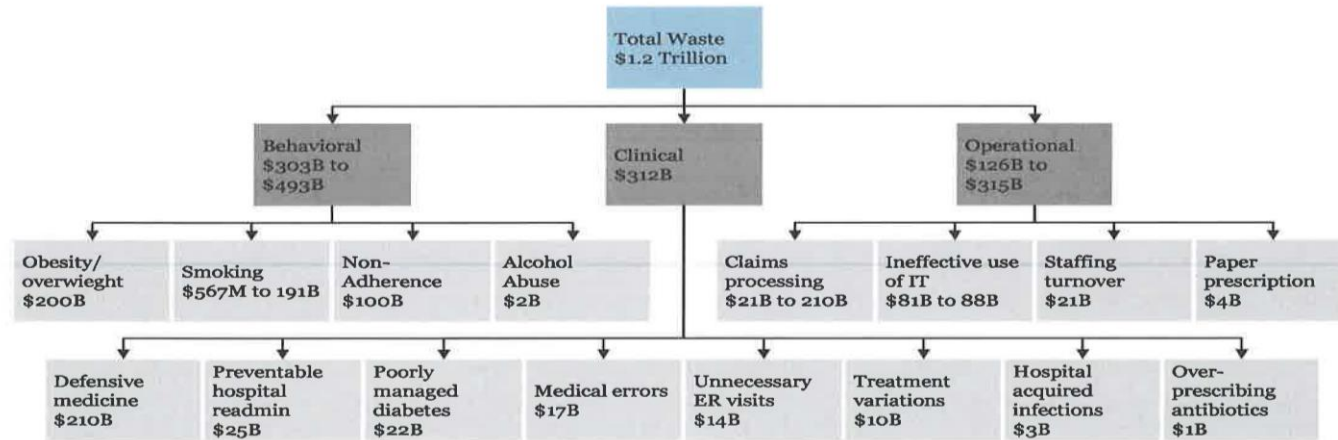
Follow the discussion

#CloseHealthGaps



Waste in US Healthcare

Opportunities to eliminate wasteful spending in healthcare add up to \$1.2 trillion of the annual \$2.2 trillion spent nationally; these categories overlap



Waste cannot be eliminated immediately. However, by viewing waste in these baskets, the size of opportunities can be prioritized and rewarded. Like health spending itself, these categories overlap. Reducing one basket can affect the size of the others.

Source: Analysis by PwC's Health Research Institute based on published studies on inefficiencies in healthcare.



ANALYSIS

Medical error—the third leading cause of death in the US

Medical error is not included on death certificates or in rankings of cause of death. **Martin Makary** and **Michael Daniel** assess its contribution to mortality and call for better reporting

Martin A Makary *professor*, Michael Daniel *research fellow*

Department of Surgery, Johns Hopkins University School of Medicine, Baltimore, MD 21287, USA

The annual list of the most common causes of death in the United States, compiled by the Centers for Disease Control and Prevention (CDC), informs public awareness and national research priorities each year. The list is created using death certificates filled out by physicians, funeral directors, medical examiners, and coroners. However, a major limitation of the death certificate is that it relies on assigning an International Classification of Disease (ICD) code to the cause of death.¹ As a result, causes of death not associated with an ICD code, such as human and system factors, are not captured. The science of safety has matured to describe how communication breakdowns, diagnostic errors, poor judgment, and inadequate skill can directly result in patient harm and death. We analyzed the scientific literature on medical error to identify its contribution to US deaths in relation to causes listed by the CDC.²

Death from medical care itself

Medical error has been defined as an unintended act (either of omission or commission) or one that does not achieve its intended outcome,³ the failure of a planned action to be completed as intended (an error of execution), the use of a wrong plan to achieve an aim (an error of planning),⁴ or a deviation from the process of care that may or may not cause harm to the patient.⁵ Patient harm from medical error can occur at the individual or system level. The taxonomy of errors is expanding to better categorize preventable factors and events.⁶ We focus on preventable lethal events to highlight the scale of potential for improvement.

The role of error can be complex. While many errors are non-consequential, an error can end the life of someone with a long life expectancy or accelerate an imminent death. The case in the box shows how error can contribute to death. Moving away from a requirement that only reasons for death with an ICD code can be used on death certificates could better inform healthcare research and awareness priorities.

How big is the problem?

The most commonly cited estimate of annual deaths from medical error in the US—a 1999 Institute of Medicine (IOM) report⁷—is limited and outdated. The report describes an incidence of 44 000–98 000 deaths annually.⁷ This conclusion was not based on primary research conducted by the institute but on the 1984 Harvard Medical Practice Study and the 1992 Utah and Colorado Study.^{8,9} But as early as 1993, Leape, a chief investigator in the 1984 Harvard study, published an article arguing that the study's estimate was too low, contending that 78% rather than 51% of the 180 000 iatrogenic deaths were preventable (some argue that all iatrogenic deaths are preventable).¹⁰ This higher incidence (about 140 400 deaths due to error) has been supported by subsequent studies which suggest that the 1999 IOM report underestimates the magnitude of the problem. A 2004 report of inpatient deaths associated with the Agency for Healthcare Quality and Research Patient Safety Indicators in the Medicare population estimated that 575 000 deaths were caused by medical error between 2000 and 2002, which is about 195 000 deaths a year (table 1).¹¹ Similarly, the US Department of Health and Human Services Office of the Inspector General examining the health records of hospital inpatients in 2008, reported 180 000 deaths due to medical error a year among Medicare beneficiaries alone.¹² Using similar methods, Classen et al described a rate of 1.13%.¹³ If this rate is applied to all registered US hospital admissions in 2013¹⁴ it translates to over 400 000 deaths a year, more than four times the IOM estimate.

Similarly, Landrigan et al reported that 0.6% of hospital admissions in a group of North Carolina hospitals over six years (2002–07) resulted in lethal adverse events and conservatively estimated that 63% were due to medical errors.¹⁵ Extrapolated nationally, this would translate into 134 581 inpatient deaths a year from poor inpatient care. Of note, none of the studies captured deaths outside inpatient care—those resulting from errors in care at home or in nursing homes and in outpatient care such as ambulatory surgery centers.

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SPECIAL ARTICLE

Health Care Spending, Utilization, and Quality 8 Years into Global Payment

Zirui Song, M.D., Ph.D., Yunan Ji, B.A., Dana G. Safran, Sc.D., and Michael E. Chernew, Ph.D.

ABSTRACT

BACKGROUND

Population-based global payment gives health care providers a spending target for the care of a defined group of patients. We examined changes in spending, utilization, and quality through 8 years of the Alternative Quality Contract (AQC) of Blue Cross Blue Shield (BCBS) of Massachusetts, a population-based payment model that includes financial rewards and penalties (two-sided risk).

METHODS

Using a difference-in-differences method to analyze data from 2006 through 2016, we compared spending among enrollees whose physician organizations entered the AQC starting in 2009 with spending among privately insured enrollees in control states. We examined quantities of sentinel services using an analogous approach. We then compared process and outcome quality measures with averages in New England and the United States.

RESULTS

During the 8-year post-intervention period from 2009 to 2016, the increase in the average annual medical spending on claims for the enrollees in organizations that entered the AQC in 2009 was \$461 lower per enrollee than spending in the control states ($P < 0.001$), an 11.7% relative savings on claims. Savings on claims were driven in the early years by lower prices and in the later years by lower utilization of services, including use of laboratory testing, certain imaging tests, and emergency department visits. Most quality measures of processes and outcomes improved more in the AQC cohorts than they did in New England and the nation in unadjusted analyses. Savings were generally larger among subpopulations that were enrolled longer. Enrollees of organizations that entered the AQC in 2010, 2011, and 2012 had medical claims savings of 11.9%, 6.9%, and 2.3%, respectively, by 2016. The savings for the 2012 cohort were statistically less precise than those for the other cohorts. In the later years of the initial AQC cohorts and across the years of the later-entry cohorts, the savings on claims exceeded incentive payments, which included quality bonuses and providers' share of the savings below spending targets.

CONCLUSIONS

During the first 8 years after its introduction, the BCBS population-based payment model was associated with slower growth in medical spending on claims, resulting in savings that over time began to exceed incentive payments. Unadjusted measures of quality under this model were higher than or similar to average regional and national quality measures. (Funded by the National Institutes of Health.)

From the Department of Health Care Policy, Harvard Medical School (Z.S., M.E.C.), the Department of Medicine, Massachusetts General Hospital (Z.S.), the Department of Medicine, Tufts University School of Medicine, and Haven (D.G.S.), Boston, and the Graduate School of Arts and Sciences, Harvard University, Cambridge (Y.J.) — all in Massachusetts. Address reprint requests to Dr. Song at the Department of Health Care Policy, Harvard Medical School, 180A Longwood Ave., Boston, MA 02115, or at zsong@hcp.med.harvard.edu.

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The opportunity *(care falls short of its theoretic potential)*

1. **Massive variation in clinical practices** *(beyond even the remote possibility that all patients receive good care)*
2. **High rates of inappropriate care** *(where the risk of harm inherent in the treatment outweighs any potential benefit)*
3. **Unacceptable rates of preventable care-associated patient injury and death**
4. **Striking inability to "do what we know works"**
5. **Huge amounts of waste, leading to spiraling prices that limit access to care**

James, B.C. Testimony to the U.S. Senate Finance Committee, February 2009

THE ECONOMICS OF PATIENT SAFETY IN PRIMARY AND AMBULATORY CARE

Flying blind



The Quality of Outpatient Care Delivered to Adults in the United States, 2002 to 2013

David M. Levine, MD, MA; Jeffrey A. Linder, MD, MPH; Bruce E. Landon, MD, MBA, MSc

IMPORTANCE Widespread deficits in the quality of US health care were described over a decade ago. Since then, local, regional, and national efforts have sought to improve quality and patient experience, but there is incomplete information about whether such efforts have been successful.

OBJECTIVE To measure changes in outpatient quality and patient experience in the United States from 2002 to 2013.

DESIGN, SETTING, AND PARTICIPANTS We analyzed temporal trends from 2002 to 2013 using quality measures constructed from the Medical Expenditure Panel Survey (MEPS), a nationally representative annual survey of the US population that collects data from individual respondents as well as respondents' clinicians, hospitals, pharmacies, and employers. Participants were noninstitutionalized US adults 18 years or older (range, 20 679–26 509 individuals each year).

MEASURES Outpatient quality measures were compiled through a structured review of prior studies and measures endorsed by national organizations. Nine clinical quality composites (5 "underuse" composites, eg, recommended medical treatment; 4 "overuse" composites, eg, avoidance of inappropriate imaging) based on 39 quality measures; an overall patient experience rating; and 2 patient experience composites (physician communication and access) based on 6 measures.

RESULTS From 2002 to 2013 (MEPS sample size, 20 679–26 509), 4 clinical quality composites improved: recommended medical treatment (from 36% to 42%; $P < .01$), recommended counseling (from 43% to 50%; $P < .01$), recommended cancer screening (from 73% to 75%; $P < .01$), and avoidance of inappropriate cancer screening (from 47% to 51%; $P = .02$). Two clinical quality composites worsened: avoidance of inappropriate medical treatments (from 92% to 89%) and avoidance of inappropriate antibiotic use (from 50% to 44%; $P < .01$ for both comparisons). Three clinical quality measures were unchanged: recommended diagnostic and preventive testing (76%), recommended diabetes care (68%), and inappropriate imaging avoidance (90%). The proportion of participants highly rating their care experience improved for overall care (from 72% to 77%), physician communication (from 55% to 63%), and access to care (from 48% to 58%; $P < .01$ for all comparisons).

CONCLUSIONS AND RELEVANCE Despite more than a decade of efforts, the clinical quality of outpatient care delivered to American adults has not consistently improved. Patient experience has improved. Deficits in care continue to pose serious hazards to the health of the American public.

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From: by Thomas Jefferson University; David Nash on 01/11/2018

Invited Commentary

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Author Audio Interview at

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IN SPORTS

**Kurt Busch
takes his first
Daytona 500**

**Veteran wins
with last-lap
pass**

Hospitals look to profit by keeping patients away

**Facilities rewarded in
host of ways to keep
more people healthy**

Jayne O'Donnell
@jayneodonnell
USA TODAY

Asked about his health issues, Anthony Tramonte of New Castle, Del., says, "Do you have about an hour?"

It's no wonder: The former postal worker, 72, is on dialysis, has diabetes, heart disease, high blood pressure and eye problems. He's been hospitalized three times for heart failure in the past

few years and was blind for a while due to his diabetes.

Tramonte's wife of 50 years, Phyllis, is his full-time caregiver, but she's got help in high places — the Christiana Care health system near their home. There, pharmacist Kelly Ann Steeves is his "care coordinator" after Tramonte is hospitalized to make sure he gets all the medical and social support he needs to avoid a return visit. A monitor checks his heart beat at home and notifies his doctor if it's irregular, which Phyllis says has saved his life twice.

"I sleep easier knowing he's got that care," she says.

Tramonte is one of about 75,000 patients in a Christiana program called Care Link that's



FAMILY PHOTO

**Anthony and Phyllis Tramonte of
New Castle, Del., get help from
Christiana health system's Carelink.**

funded by a variety of federal grants through the Centers for Medicare and Medicaid Services. Patients have care coordinators such as Steeves who link them with a nurse, pharmacist and so-

cial worker. Similar projects around the U.S. are federally funded and share the goal of keeping people healthy and out of the hospital, at least for preventable reasons.

Under the Affordable Care Act, hospitals now get penalized when Medicare patients are re-admitted within 30 days of a visit, but there are a host of other ways they get rewarded when they keep people healthy. Some are funded through CMS' innovation center, such as a reimbursement plan that gives hospitals a set amount for, say, a knee replacement. They get more if they treat the patient for less and lose mon-

► **STORY CONTINUES ON 2A**

TE 4A TRAVEL 4B MARKETPLACE TODAY 7D PUZZLES 7D TONIGHT ON TV 8D WEATHER 6A YOUR SAY 6A

Population Health: Conceptual Framework

Health outcomes and
their distribution within a
population



Morbidity
Mortality
Quality of Life

Health determinants
that influence
distribution



Medical care
Socioeconomic status
Genetics

**Policies and
interventions** that
impact these
determinants

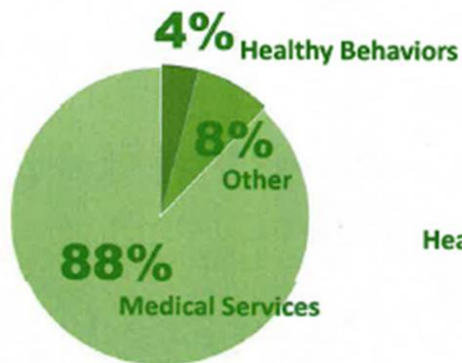


Social
Environmental
Individual



Mismatch in Healthcare Investment

What the U.S. Spends vs.
What Makes People Healthy



SOURCE: 2012, Bipartisan Policy Center

What actually makes
people healthy?



Whole Person

Population Health Management

CONTENTS

- Medical Home Payment Pilot
- Self-Management Abilities and Quality of Life
- Readmission Among Medicare Beneficiaries with Diabetes
- Health Care Coverage Decision Making
- Body Weight and Health and Productivity Outcomes
- Demographic Disparities Among Medicare Beneficiaries with Diabetes
- Predicting Health Care Cost Transitions
- Pharmacist Tobacco Cessation Counseling
- West Virginia Health Insurance Marketplace

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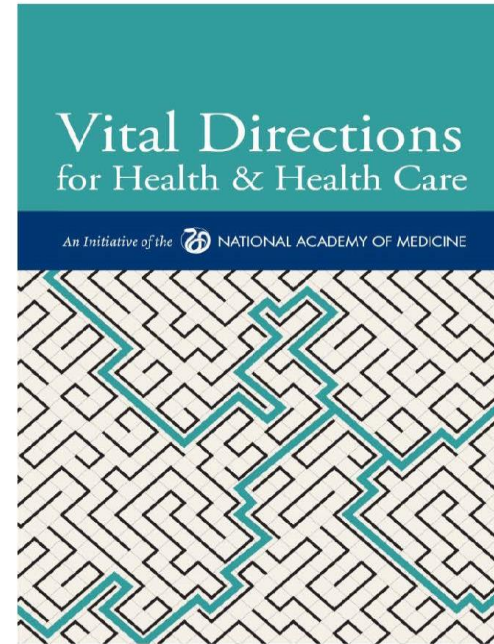
Summary: The Priorities

ACTION PRIORITIES

- Pay for value
- Empower people
- Activate communities
- Connect care

ESSENTIAL INFRASTRUCTURE NEEDS

- Measure what matters most
- Modernize skills
- Accelerate real-world evidence
- Advance science



ESSENTIAL INFRASTRUCTURE NEEDS

Measure what matters most: *use consistent core metrics to sharpen focus*

- Focus reliably and consistently on factors most important to better health and health care
- Create the national capacity to identify, standardize, implement, and revise core measures

Modernize skills: *train the workforce for 21st century health care and biomedical science*

- Invest in the science of performance measurement
- Reform health workforce training to emphasize teams, innovation, and continuous improvement
- Create new education and training pathways to maintain a robust science workforce

What Does This All Mean?

Major Themes Moving Forward

1. Transparency
2. Accountability
3. No outcome, No income

How Might We Get There?

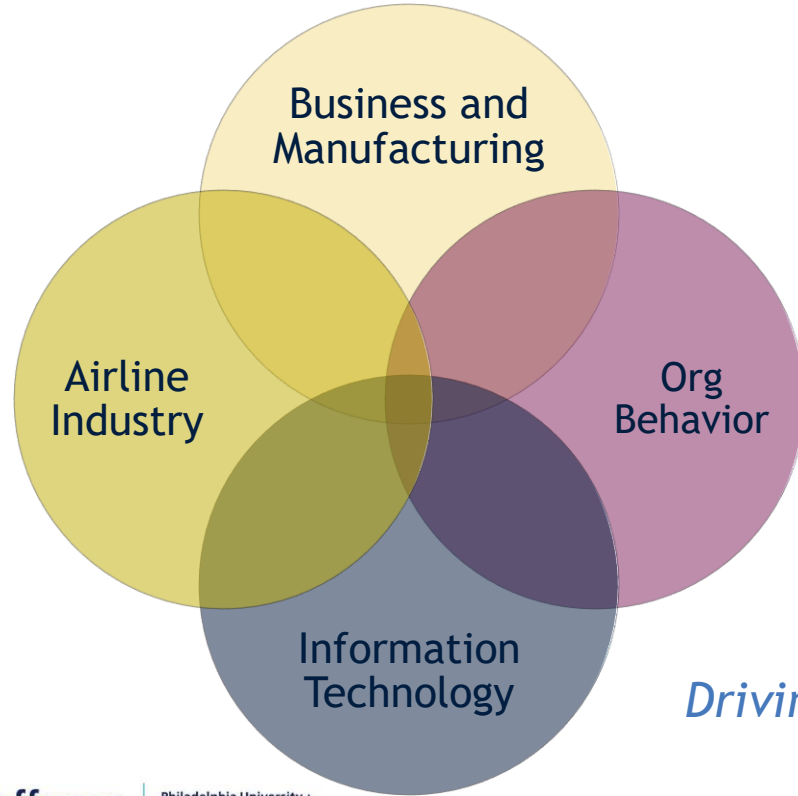
Change the Culture

1. Practice based on evidence
2. Reduce unexplained clinical variation
3. Reduce slavish adherence to professional autonomy
4. Continuously measure and close feedback loop
5. Engage with patients across the continuum of care

University Partners



Increasing Complexity of Content



- Lean / Six Sigma
- Crew Resource Management
- Root Cause Analysis
- Human Factors Engineering
- Change Management
- High Value Care
- High Reliability
- Payment Reform
- Analytics

*Driving toward a **population health** framework*



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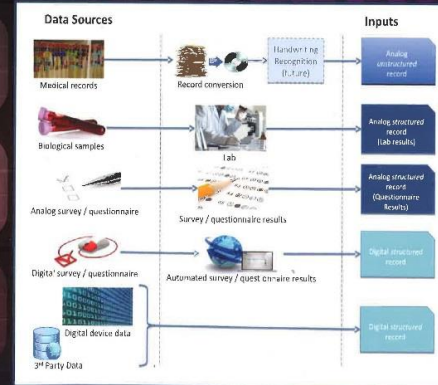
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- Elements of Fun in CBM Interventions
- Novel Platform to Deliver Balance Training
- Energy Expenditure/Player Mode/Game Enjoyment

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By Benjamin L. Ranard, Rachel M. Werner, Tadas Antanavicius, H. Andrew Schwartz, Robert J. Smith, Zachary F. Meisel, David A. Asch, Lyle H. Ungar, and Raina M. Merchant

Yelp Reviews Of Hospital Care Can Supplement And Inform Traditional Surveys Of The Patient Experience Of Care

ABSTRACT Little is known about how real-time online rating platforms such as Yelp may complement the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey, which is the US standard for evaluating patients' experiences after hospitalization. We compared the content of Yelp narrative reviews of hospitals to the topics in the HCAHPS survey, called domains in HCAHPS terminology. While the domains included in Yelp reviews covered the majority of HCAHPS domains, Yelp reviews covered an additional twelve domains not found in HCAHPS. The majority of Yelp topics that most strongly correlate with positive or negative reviews are not measured or reported by HCAHPS. The large collection of patient- and caregiver-centered experiences found on Yelp can be analyzed with natural language processing methods, identifying for policy makers the measures of hospital quality that matter most to patients and caregivers. The Yelp measures and analysis can also provide actionable feedback for hospitals.

Since 2006, patient-reported experiences after hospitalization have been collected using the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey.^{1,2} HCAHPS survey results are publicly reported on the Centers for Medicare and Medicaid Services Hospital Compare website,³ which rates all US hospitals that receive Medicare payments on a variety of quality measures.⁴ HCAHPS survey scores now drive 25 percent of the financial incentives in the Medicare value-based purchasing program,⁵ which will eventually penalize hospitals with poor performance by up to 2 percent of their Medicare payments.^{6,7} The HCAHPS survey is the current standard for patient-experience-of-care data,⁸ but its development dates back to 2002.⁹ In the fourteen years since the survey first appeared, the indications for and experiences of hospitalization have changed greatly. Perhaps more importantly,

more than a decade ago patients were not spontaneously publishing their opinions about health care facilities on social media sites where opinions reach the members of the public, who are increasingly comfortable in using them to inform their own decisions.

Evaluations such as the HCAHPS survey are the products of years of measurement research, are fielded and interpreted systematically,¹⁰ and have collected a large number of patient responses per hospital.¹ However, they are expensive to deploy,¹ they suffer from low response rates,⁴ and there may be significant delays between hospitalization and public reporting of results.¹ Even if the evaluations can give an overall indication of patient satisfaction, they rarely identify the source of perceived problems.⁸

Reviews on social media sites are organic, largely unstructured, and essentially uncensored but are both seemingly haphazard and subject to gaming. Yet the testimonials on social media

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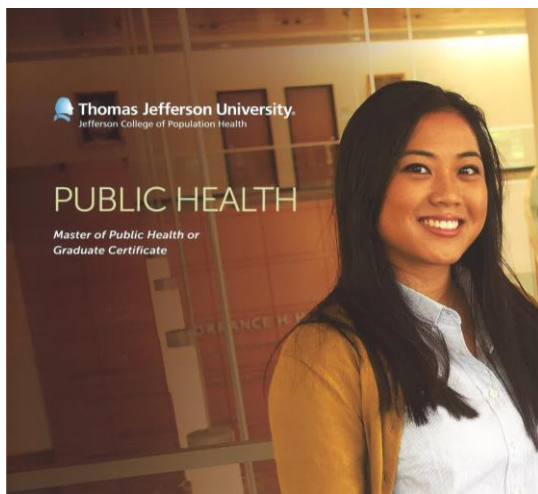
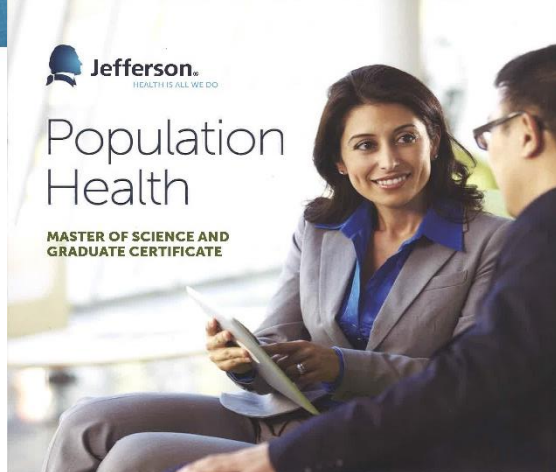
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REDEFINING THE

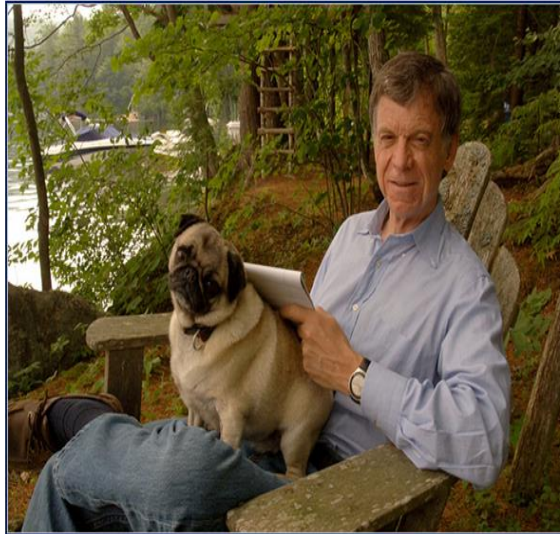


...And helping define the next generation of health markets





“The institutionalization of leadership training is one of the key attributes of good leadership.”



**John P. Kotter,
Harvard Business School**

