

HOW REGIONAL STAKEHOLDER GROUPS CAN LOWER THE GROWTH OF HEALTH CARE COSTS AND REDUCE MEDICAL WASTE

(Issue Brief #1)

Leif Wellington Haase, 2018

BACKGROUND

U.S. Health Costs Still Unchecked

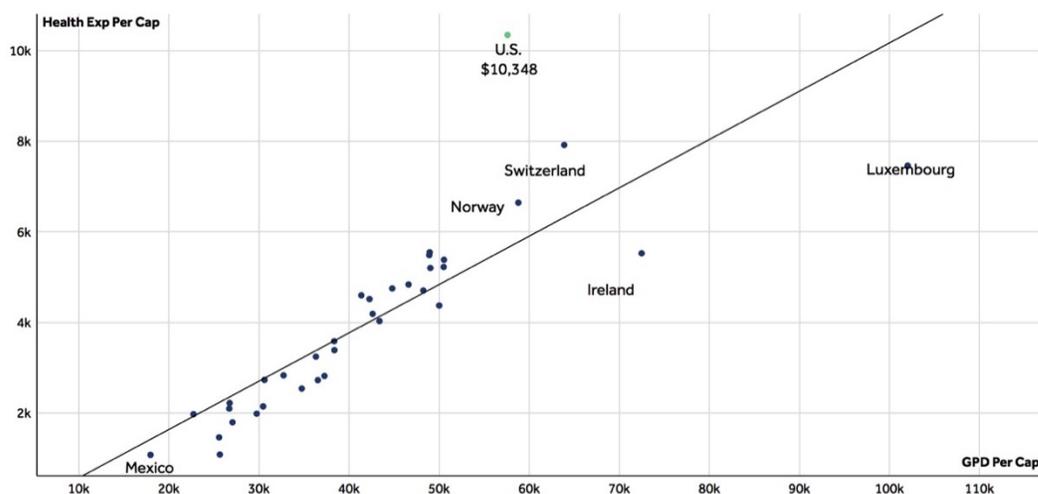
When it comes to high, rising, and eventually unsustainable U.S. health care costs, the theme of Leonard Cohen’s dark anthem “Everybody Knows” rings true. It is no secret that Americans pay the highest prices for care in the developed world and still, in comparative terms, achieve mediocre outcomes.¹

Excessive spending on health care makes American businesses less competitive. It crowds out spending on transportation, education, infrastructure, and other vital civic needs. As health care costs rise, American inequity rises in tandem, since fewer individuals can be covered by private insurance or by public health programs.

Studies suggest that as much as one-third of this spending, or around 6 percent of GDP, may be wasted.² This waste includes overuse of services that don’t improve health outcomes, regional variations in spending in the absence of medical need, unnecessarily high prices, and outsized administrative costs.

Relative to the size of its wealth, the U.S. spends a disproportionate amount on health care

Total health expenditures per capita/GDP per capita, U.S. dollars, PPP adjusted, 2016



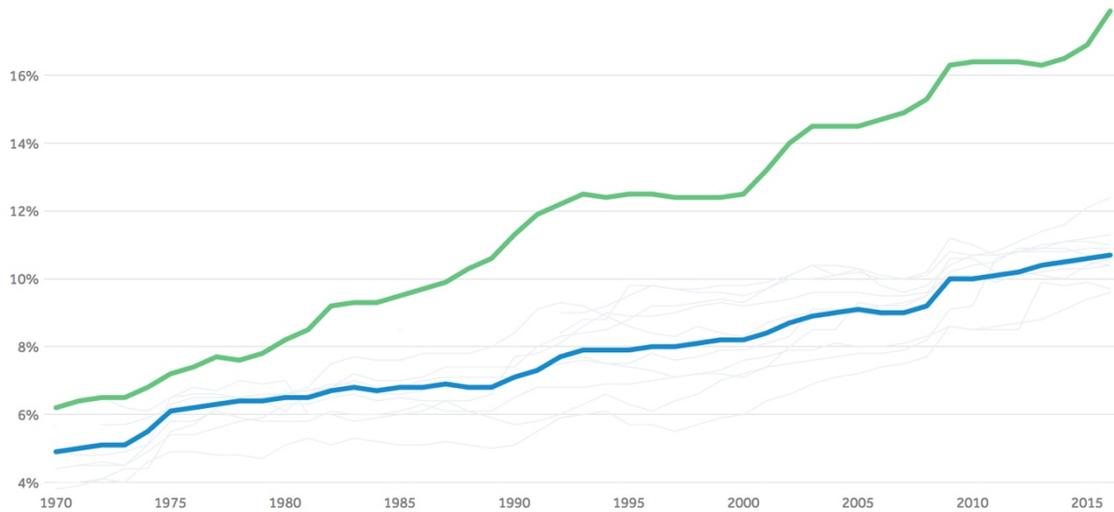
The US value was obtained from the 2016 National Health Expenditure data.

Source: Kaiser Family Foundation analysis of data from OECD (2017), "OECD Health Data: Health expenditure and financing: Health expenditure indicators", OECD Health Statistics (database). DOI: 10.1787/health-data-en (Accessed on March 19, 2017). •Get the data • PNG

Peterson-Kaiser
Health System Tracker

Since 1980, the gap has widened between U.S. health spending and that of other countries

Total health expenditures as percent of GDP, 1970 - 2016



Excludes spending on structures, equipment, and noncommercial medical research. Data unavailable for: the Netherlands in 1970 and 1971; Australia in 1970; Germany in 1991; and France from 1971 through 1974, 1976 through 1979; 1981 through 1984, and 1986 through 1989. These countries are not included in calculated averages for those years. Break in series in 2003 for Belgium and France and in 2005 for the Netherlands. Data for 2016 are estimated values. The 2016 US value was obtained from National Health Expenditure data.

Source: Kaiser Family Foundation analysis of data from OECD (2017), "OECD Health Data: Health expenditure and financing: Health expenditure indicators", OECD Health Statistics (database) (Accessed on March 19, 2017). • Get the data • PNG

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Health System Tracker

RHICs (Regional Health Improvement Collaboratives) Have a Key Role in Moderating the Growth of Health Care Costs

Payers, physicians, hospital executives, consumers, must become better stewards of the resources the U.S. devotes to health care. Groups of regional stakeholders, which include representatives of these groups and seek collaboration between them, have an important role to play in making health care more affordable.

Around 250 stakeholder groups have been formed in the U.S. with the aim of improving the quality of care and reducing unnecessary health spending.³ Of this total, around thirty-five of the larger and more organized groups are termed RHICs (pronounced "Rick's) or Regional Health Improvement Collaboratives.⁴

RHICs are non-profit organizations based in a metropolitan area or specific geographic region. They are composed of providers, purchasers, payers, and consumers, with a multi-stakeholder board.⁵ RHICs rarely pay directly for care or manage or oversee the provision of insurance or health services, though there are a few, though there are a few exceptions. For instance, the Pacific Business Group on Health, based in the San Francisco Bay area, has administered health care marketplaces or exchanges.

RHICs are the hub of efforts to achieve the Triple Aim, or achieving higher quality at lower cost, better population health, and higher patient satisfaction, through diffusing innovative ideas for improving health delivery through data generated at the local level.⁶ They typically develop and disseminate research on quality improvement and performance measurement, train medical workers, connect community leaders with

physicians and hospital administrators, amplify academic research that bears on health care delivery, and convene workshops and meetings.

While much of the work carried out by these groups of regional stakeholders affects the effort to reduce excessive health care spending, the urgency of this goal suggests the importance of undertaking projects that bear directly on spending. Shining a light on those projects that are already underway is also important.

We asked two dozen prominent American health care experts and practitioners, CEOs of hospitals and integrated systems, insurance executives, consumer watchdogs, and leading academics, among others, how groups of regional stakeholders could best contribute to bringing down the growth of health care costs and reducing wasted spending on health care.

These experts felt that RHICs can be a “**honest broker**” or “**trusted convener**” in conversations over how to reduce health care spending—especially since many health care organizations have a financial stake in the outcomes of policy debates and would have difficulty remaining impartial. Regional consortia, they believed, can perform an important role by bringing together the knowledge base of key players in a setting that encourages them to cooperate rather than to joust for market advantage.

According to these leaders in health care, RHICs could make the biggest difference in restraining U.S. health care spending in several different ways;

- Through **developing and helping to implement payment and quality reforms**, including **performance measurement and price transparency**, as well as **pathways to care for specific and detailed procedures**;
- **Promoting the redesign of care delivery** and the **reduction of low-value care** through the support of projects such as “Choosing Wisely”; and
- **Advancing the long-term vision of population health**, with its central finding that the social and geographical determinants of health, not the provision of acute health care, is the principal source of health outcomes.

“Focus on areas that seem to be wasteful but that are very, very specific, such as excessive use of institutionalized post-acute care. ... Taking advantage of small steps builds momentum on other things.”

- David Cutler, Harvard Medical School

“The way to start is to become completely patient-centered and to design the system that way. In the system of the future, every hospitalization is a failure.”

- David Feinberg, M.D., CEO, Geisinger Health System

DEVELOPING AND IMPLEMENTING PAYMENT AND QUALITY REFORMS

“Improvement of outcomes is the main mechanism to reduce costs.”

- Clay Johnston, M.D., Dean, Dell Medical School, University of Texas

The evidence-based medicine and quality movements in health care, as they gained prominence, helped firmly establish the findings of substantial waste in the U.S. health care system. The definition of “waste” varies among researchers: from a narrower version that cites the provision of care that is useless or harmful to a patient to a broader, efficiency-based one that stresses the volume of resources needed to deliver a specific outcome.

Don Berwick and Andrew Hackbarth, in an influential *JAMA* article, defined waste in this broader sense, singling out failures in care delivery, care coordination, overtreatment, administrative complexity, pricing failures (“the waste that comes as prices migrate far from those expected in well-functioning markets, that is, the actual cost of production plus a fair profit”) and fraud and abuse.

These findings dovetailed with a critique of fee-for-service medicine which contained incentives, many argued, for doctors to perform too many needless procedures and tests. John Wennberg and his Dartmouth colleagues showed how sharply Medicare spending varied in different regions of the country even after adjusting for local prices and the underlying health of the population, without evidence of better health outcomes in higher spending areas.⁷ While critics pointed out that commercial health spending didn’t necessarily show similar variations and that some areas of the U.S. had more illness than Wennberg acknowledged, the theory of unwarranted variation has remained influential.⁸ (See text box)

Weeding out wasted health care spending has been difficult in large part because the evidence rests substantially on aggregated high-level studies or very minute analyses of specific procedures.⁹ RHICs have been trying to identify wasted spending, with some success, in this middle ground. The Network for Regional Health Improvement (NRHI), the national membership organization of the regional health improvement collaboratives, has been working since 2013 with HealthPartners, the measure

developer of the National Quality Forum-endorsed Total Cost of Care measure set, with members in five states, to develop a Total Cost of Care index that allows different regions to compare provider-specific costs to an average benchmark for that region.¹⁰ In addition, it allows observers to begin to identify whether a region's costs are driven principally by higher prices or by higher uses of medical services, and in which combination.

For instance, Maryland—which is the only state with all-payer hospital rate regulation—used resources slightly less than the benchmark and had significantly lower prices. Oregon had higher prices and a lower volume of service use, while Colorado had higher prices than the benchmark and also used more services, especially outpatient services.

This Total Cost of Care benchmarking approach, which has drawn considerable praise from state health officials and stakeholders, is a valuable tool for targeting high costs, in large part because it draws on commercial claims (some 5 million claims from around 20,000 physicians) while other data has typically covered only public programs. It is especially useful because it can be used to identify outliers and because it distinguishes between areas in which prices and service utilization leads to higher costs. Should the areas with better records become the norm, over a billion dollars in existing health care spending conceivably could be saved and redirected elsewhere.

To be sure, the index has limitations—it doesn't have access to all commercial claims but only those that are voluntarily submitted by participants. It doesn't adjust for quality but assumes that higher prices aren't systematically correlated with better outcomes. Nevertheless, by broadening the base of study and distinguishing between the factors that drive health spending, it is a big step forward and one largely brought about by the support and engagement of RHICs.

Paying providers through ways other than fee-for-service or capitation involves amassing considerable claims data and clinical information to determine what a reasonable price for a service, under different conditions and for different patients, should be.

The creation of the all-payer data system in Maryland and claims databases in other states were supported by RHICs. Dr. Susan Turney, CEO of the Marshfield Clinic, a twelve-hospital integrated system in rural Wisconsin, told us that the impetus for systemic transformation in her state dated back to 2004, when the Wisconsin Collaborative for Healthcare Quality, a voluntary statewide consortium of physician groups, hospitals, health plans, and employers, began operations. "When it got off the ground an industry grew up around it," Turney said. The WCHQ, which includes 65 percent of the state's primary care providers, collects data on thirty performance measures across its members. Wisconsin has consistently outperformed neighboring states on performance measures in diabetes and cardiovascular care.¹¹

Likewise, a number of regional collaboratives either manage state-based all-payer claims databases (APCDs), which help state officials understand price variations and given them guidance in purchasing care and developing consumer-friendly information. For instance, Colorado's Center for Improving Value in Health Care (CIVHC) acts as the manager of the state's claims data base. RHICs are among the leaders in using their own data sets and APCDs to generate price transparency for providers and payers, which is a

key building block in figuring out how best to contain costs.¹² Minnesota's MN Community Measurement, a Minneapolis-based RHIC, operates a highly-regarded consumer-oriented site that details costs and quality for hospitals and medical groups statewide.¹³

The Alternative Payment Contract in Massachusetts, a global payment model with annual incentives that has been in effect since 2009, has steadily been shown to save money compared to previous payment methods. The APC was designed through extensive cooperation between the Blue Cross Blue Shield Foundation and many local and regional stakeholders.¹⁴

Accountable Care Organizations (ACOs) received a strong boost through high-profile cost-containment efforts included in the Affordable Care Act. ACOs are voluntary affiliations of doctors, hospitals, and medical providers who share financial and medical responsibility for coordinating care for patients. Though the jury is still out on whether such arrangements will save money for public programs and commercial payers, ACOs have become much more common in both sectors, with nearly one thousand in operation.¹⁵

One major challenge for ACOs is measuring how well they stack up against benchmarks for cost and quality, and in respect to their peers. In response, two large RHIC's in California, the Integrated Healthcare Association (IHA) and the Pacific Business Group on Health (PBGH) have embarked upon a performance measurement initiative that they hope will be a model for the country, launching with 18 clinical quality, utilization, and cost measures applied to commercial ACOs. Most of the largest employers and the largest provider groups in Northern California are on board.¹⁶

As David Cutler and others suggested, assembling cost-lowering reforms one step at a time, while building out from local physician practice, represents an alternative both to top-down federal "one-size-fits-all" price reforms and also to capitation in which a medical group assumes the full risk of the costs of patient care. Disseminating and in some cases assisting with bundled or episode-based payment design was seen as an especially useful role for RHICs.

Cost, Waste, and Prices

Recent and some earlier studies have argued that high prices, plus outsized administrative costs, not excessive utilization of medical services, are the principal reason why U.S. pays so much more for health care than other developed countries¹⁷. Some have interpreted these findings to argue that focusing on value-based payment, which attempts to coordinate care and reduce overtreatment connected to fee-for-service payment, is misplaced. While these studies make a compelling case that the *differential* between the U.S. and other countries is higher U.S. prices, they don't show that overuse, the prevalence of low-value care, and medical waste is negligible¹⁸. What other studies now aided by international data suggest is that most health systems practice a great deal of low-value care: the U.S. is an outlier because of its high prices and a more expensive mix of services delivered when a patient is admitted to care.

AIDING DELIVERY REFORM: DESIGNING AND DISSEMINATING BEST PRACTICES

“Physicians are changing their mindset from thoroughness to appropriateness...from ‘Why didn’t you do that test?’ to ‘Why did you?’”

- Daniel Wolfson, CEO, ABIM Foundation (sponsor of Choosing Wisely)

“Almost everyone has electronic systems—but they use them for billing rather than care delivery.”

- George Halvorson, former CEO, Kaiser Permanente

The Choosing Wisely campaign, launched by the American Board of Internal Medicine (ABIM) Foundation in 2012, is an ambitious effort to root out low-value care and to reduce wasted medical spending. Working through more than seventy medical societies, physicians have created “lists of five” tests, treatments or services that they believe their specialty regularly overuses. These recommendations, which now number 552 in total, are endorsed by the medical societies based on clinical guidelines and a consensus of expert opinion. Recommendations include the overuse of radiography, the inappropriate use of urinary catheters, and the overuse of elective C-sections in maternity care.¹⁹ The philosophy of Choosing Wisely is that doctors are in the best position to identify and root out unnecessary care and that “focusing, activating, and resourcing physician professionalism has been found to be an excellent recipe for success.”²⁰

One of the most important activities of RHICs has been to call attention to the Choosing Wisely recommendations, and other guidelines, and to disseminate them to physicians and consumers. Our expert panel frequently pointed to this initiative and pointed out the different ways that groups had chosen to use the lists.

For instance, Premier Medical Group, a large multi-specialty group in western Pennsylvania, had moved to a risk sharing contract and wanted to use the Choosing Wisely recommendations to engage specialists who hadn’t previously been exposed to value-based payments. Premier built wallboards with the lists for physician bullpens, pointed out areas of likely waste, and asked each specialty to review the guidelines.

Across specialties, Premier pays doctors based on “productive,” “quality,” and “citizenship” components; exposure to Choosing Wisely recommendations was one component of the citizenship category. Premier also built a risk calculator for cardiac care into its electronic health record and printed brochures for patients.

The Washington Health Alliance, a stakeholder group, recently used forty-seven of the Choosing Wisely recommendations to estimate the amount of wasted health care spending in the state. It arrived at a \$282 million figure for wasted health care dollars that included only the costs directly associated with the service or procedure in question. The Alliance hopes that this finding will prompt a community dialogue on overuse of low-value care in the state. It has apparently prompted organizations in other states to launch similar studies.²¹

One insurer, Arkansas Blue Cross and Blue Shield, is using Choosing Wisely as part of its unique Value-Based compensation model, which it launched in 2017. Using scores based on cost variability, it is systematically reducing fee-for-service payments and depositing the difference in a bonus pool, which will be used to reward providers that practice high-value care, avoid low-value procedures, and practice quality reporting.²²

The Choosing Wisely campaign has been criticized from opposite quarters: one school of thought argues that its recommendations are too small-bore and not precise enough; conversely, some believe that these guidelines will be taken too literally as a device to measure and extrapolate the costs of wasted care. In recent years, as a consensus around the dominant role of price in distinguishing U.S. health costs has coalesced, this criticism has been joined by the argument that the campaign, in trying to reduce low-value care and overuse, is pursuing the wrong culprit. In response, it is worth pointing out that utilization almost certainly remains a driver of high costs, even though it may not be the *differential* factor in explaining the outlier nature of U.S. spending.²³ More troubling, perhaps, is that the awareness of Choosing Wisely among physicians, which expanded initially at a rapid pace, appears to have slowed down considerably.²⁴

Other examples of stakeholder group-led implementation of best practices have led to better outcomes and reduced costs. For instance, the Better Health Partnership, a primary-care led RHIC located in the suburbs of Cleveland, Ohio, adopted best practices of care for patients with diabetes, heart failure, and hypertension: following the adoption of these practices, rates of hospitalization for these conditions fell more sharply than in other comparable parts of the state, leading to an estimated savings, over five years, of almost forty million dollars.²⁵

“When we asked our doctors about the best way to do procedures, they all disagreed. When we asked them what doctors should never do, we got consensus and a quick list. So that’s where we started.”

- Charles Sorenson, M.D., former CEO, Intermountain Healthcare System.

Choosing Wisely illustrates several key principles of Quality Improvement as they apply to health care. As Charles Sorenson suggests, QI is about managing the process of care and engaging managers—in this case doctors, nurses, and other medically-trained personnel—to achieve better results. Measures that are agreed upon, even if imperfect, are better than perfect measures. Even the brief experience of Choosing Wisely suggests that these lists are modified regularly as clinical practice evolves. Second, even though Choosing Wisely’s lists are wide-ranging, they lead naturally to processes that can be measured. Finally, working through specialty societies tends to ensure that the revamping of the processes of care is driven by clinicians, without whose buy-in the improvement is unlikely to occur.

One of the strongest contributions by RHICs has been developing and managing Health Information Exchanges—regional and national data portals designed to manage and streamline the transfer of digital health data between medical providers and social service agencies. In Louisiana, the Louisiana Health Care Quality Forum, established in the wake of hurricanes Katrina and Rita, now connects some 240 hospitals and numerous other clinics and medical sites, processing 80 million transactions a month in 2015. It has recently completed an application that will identify “super-users” of emergency room departments (Louisiana ranks high in the number of per capita ED visits) with the promise of substantial cost savings.²⁶

The Health Collaborative (THC) in Cincinnati, a RHIC focused on the secure exchange of digital health data, played a critical role in establishing a regional cog in what has now become a national data exchanges that alerts a patient’s local provider when he or she has a health crisis when away from home. THC previously quarterbacked a “heartland” version of this project which linked exchanges in Kentucky, Michigan, and Tennessee, offering a proof of concept for the national-level exchange that was launched in 2018.²⁷

Regional stakeholder groups are a natural liaison between accrediting agencies and specialist societies and local hospitals and patients. They can also support the training offered by medical schools, especially newly-formed ones such as the Dell Medical School at the University of Texas, which have incorporated a focus on cost-conscious medicine and low-value care into their curricula. According to one study conducted at the University of Pennsylvania’s School of Medicine, residents practiced medicine in a more expensive fashion than doctors in outside practice, in large part because of their use of new technologies and a tendency to practice “defensive medicine.”²⁸

BETTER POPULATION HEALTH AND LOWER LONG-TERM HEALTH SPENDING

“Speak to what is happening in your city as a role model.”

- Will Shrank, M.D., Chief Medical Officer, UPMC Health Plan

“How can the integration of social services and medical care best be organized? There are so many people you can’t reach even when behavioral health is integrated with acute care. We really have a constellation of social issues that go far beyond what doctors can address.”

- Lew Sandy, M.D., Vice President, UnitedHealthcare

Virtually every expert to whom we spoke, regardless of affiliation or profession, felt that regional groups could accelerate a movement toward better population health. This includes healthier individual behavior and collective health improvements based on eating healthier food, passive methods of encouraging exercise, expanded and more efficient mass transportation, and in sum all the “upstream” factors that influence health outcomes. The rapidly-growing “upstream” movement in health care is fueled by strong evidence that the overall health of communities is primarily driven by social and environmental factors, not on improvements in acute medical care.²⁹

This also entails, in the longer term, developing payment methods that would reflect, as David Feinberg alludes to, incentives to avoid hospitalization altogether. The group felt that the stakeholder groups could move their regions toward this goal by virtue of being trusted civic leaders and known change agents: the need to develop “upstream” approaches to improving health outcomes, and ultimately lowering costs, cropped up repeatedly regardless of the specific question under discussion. Although capitated payment, over time, reflects and justifies upstream spending, and population health measures based on life-years gained (QALYs) have been proposed for decades, it is difficult to bring cost savings generated by one party, whether payer or provider, back to that source, in what is sometimes known as the “wrong pockets” problem.³⁰

Chronic illness, many observed, is often the result of individual behaviors, such as smoking and alcohol abuse, as well as outside factors such as poor housing and a polluted environment. Studies increasingly show that life chances, including the likelihood of leading a healthy life, are heavily influenced by experiences in infancy and early childhood. George Halvorson, past CEO of Kaiser Permanente, for example, cited research that children who are read and sung to in their first year are less likely to have developmental problems and more likely to be healthy and able to function at their appropriate grade-level, or above.

Initiatives are underway that use regional stakeholder collaborations to bring down the rate of chronic illness. For instance, AIR Louisville, a group that brought together city government, a not-for-profit, and a tech company’s digital health platform, resulted in a sharp drop in rescue inhaler use and nearly a fifty percent improvement in days that asthmatic individuals in Louisville were symptom-free.³¹

The UPMC Health Plan, working with Housing and Urban Development Officials in Allegheny County, has matched HUD spending and created a program that helps the chronically homeless in Medicaid and dually eligible for Medicaid and Medicare find housing, as well as coordinating care for these individuals. UPMC estimates that it has saved \$6500 per person per year for the seventy people it has assisted, and changed their habits of medical usage from ER visits and hospital admissions to primary care

visits and adherence to medication. Although this particular enterprise hasn't used a RHIC as an intermediary, it is a natural model for organizations in cities with a large homeless populations.³²

Regional stakeholders are ideally situated to develop and cooperate with programs that quantify the impact of improving population health. The challenge is to find the right areas and the right partnerships so that large amounts of energy aren't poured into "one-off" ventures that have little staying power or replicability beyond a single community.

Experts pointed toward a number of well-funded national and regional initiatives through which tangible measures were being created and successful partnerships built. Prominent among these is the Culture of Health initiative spearheaded by the Robert Wood Johnson Foundation, the nation's largest health care foundation.³³

This four-year old initiative has identified thirty-five tangible measures of healthy populations, including volunteering, Internet health searches, housing affordability, neighborhood walkability, residential segregation, and access to public health services. These measures, in turn, are linked to chronic illness, reduction in incarceration, family health costs, end-of-life spending, and many others. Partners include the Memphis Business Group on Health, the national YMCA, and the state of Hawaii, all of whom are using the project to benchmark health trends in their communities.³⁴ It is explicitly aimed at promoting cross-sector collaboration: through its partner AcademyHealth, RWJF convened RHICs from five regions to propose ways in which non-medical needs could be incorporated into alternative payment models.³⁵

The country's second largest health-related foundation, The California Endowment, likewise radically overhauled its grant-making priorities to focus on turning around the health of populations in fourteen California communities over a ten-year period: the impact of this decision, especially from the standpoint of reducing costs, is uncertain.³⁶ Explicitly following the endowment's lead, the giant integrated system Kaiser Permanente recently made a \$200 million commitment to reducing homelessness in California.³⁷

The Geisinger Health System, the dominant integrated system in Eastern Pennsylvania, has embarked on an ambitious "upstream" effort to change the eating habits in Scranton, PA, partnering with a major food bank and supermarket chain in an effort to reduce the incidence of Type 2 diabetes.³⁸

Another strategy mentioned by several experts, though questioned by others, would redirect required hospital community benefit spending requirements toward upstream goals: through influence and example, nudging insular institutions focused on acute care toward becoming health improvement systems for a community, without sacrificing those institution's capacity to deliver excellent acute care when needed.

CONCLUSION: LINKING REGIONAL EFFORTS TO STATE AND NATIONAL POLICY

The journalist James Fallows has argued that the United States is reinventing itself through hundreds of explicit and natural policy experiments at the local and regional level. What RHICs are beginning to do with respect to restraining health care spending follows this pattern.³⁹

Price transparency efforts, health information exchanges, and other initiatives are formally linking regional, state, and federal partners. While the participating physicians, employers, and other stakeholders are pursuing goals that are frequently local, they are beginning to remodel the U.S. health system from the bottom up. It is easier to show that these programs are demonstrating value for patients and communities than to make the claim that community-based programs will bend the curve of health spending. But stitching together the considerable savings from each innovation will make a sizeable dent.

¹ David M. Cutler, “What Is The US Health Spending Problem?” *Health Affairs*, March 2018.

² Donald Berwick and Andrew Hackbarth, “Eliminating Waste in US Health Care,” *JAMA*, March 14, 2012.

³ See Jane Erickson, “Multi-Sector Partnerships Have the Potential To Transform Health, But Most Aren’t There Yet,” *Health Affairs* blog, January 26, 2018. While researchers have identified no fewer than 237 health stakeholder groups that fit this model, many of these lack the capacity or the policy knowledge to achieve ambitious goals.

⁴ www.nrhi.org/uploads/what-is-a-rhic_318.pdf. There are some 35 RHICs in the country, many of them launched through the Robert Wood Johnson’s Aligning Forces for Quality project.

⁵ NRHI, 2017.

⁶ Joseph Tanenbaum et.al., “Association of a Regional Health Improvement Collaborative With Ambulatory Care-Sensitive Hospitalizations,” *Health Affairs*, February 2018.

⁷ See especially John E. Wennberg et.al., “An Agenda for Change: Improving Quality and Curbing Health Care Spending,” A Dartmouth Atlas White Paper, December 17, 2008.

⁸ On responses to Wennberg and the overall debate on quality, cost, and regional variation, see Leah Burke and Andrew Ryan, “The Complex Relationship Between Cost and Quality in U.S. Health Care,” *AMA Journal of Ethics*, February 2014.

⁹ Daniel O’Neill and David Sheinker, “Wasted Health Spending: Who Is Picking Up the Tab?” *Health Affairs*, May 31, 2018.

¹⁰ Network for Regional Healthcare Improvement, “Healthcare Affordability: Untangling Cost Drivers,” February 13, 2018.

¹¹ <https://www.ahrq.gov/workingforquality/priorities-in-action/wisconsin-collaborative-for-healthcare-quality.html>; Wisconsin’s work inspired the formation of the multi-state High Value Healthcare Collaborative, which focuses on diabetes, congestive heart failure, sepsis, and hip and knee surgery: <https://www.opennotes.org/partner/high-value-healthcare-collaborative/>

¹² Network for Regional Healthcare Improvement (NRHI) and the Milbank Memorial Fund, “When Regional Health Improvement Collaboratives and States Work Together: Lessons Learned from Health Improvement Partnerships,” December 2015.

¹³ www.mnhealthscores.org/

¹⁴ <https://www.bluecrossma.com/visitor/pdf/alternative-quality-contract.pdf>

¹⁵ See, amidst a vast and far from uniform literature, David Muhlenstein and Mark McClellan, “Accountable Care Organizations in 2016: Private and Public Sector Growth and Dispersion,” *Health Affairs* blog, April 21, 2016.

¹⁶ Diana Manos, “Plans Endorse Standardized ACO Performance Measures,” *Health Plan Week*, January 8, 2018.

¹⁷ A full set of citations and bibliography is included in the forthcoming final report of this JHF affordability study, which is forthcoming. For a summary of the main points, see Irene Panicoles, Lianna

Woskie, and Ashish Jha, “Health Care Spending in the United States and Other High-Income Countries,” *JAMA*, January 2018.

¹⁸ “Right Care” (Lown Institute), *The Lancet*, January 8, 2017.

¹⁹ ABIM Foundation, “Choosing Wisely: A Special Report on the First Five Years,” 2017.

²⁰ Leslie Tucker and Daniel Wolfson, “Advice for CMMI from Choosing Wisely,” ABIM Foundation, December 14, 2017.

²¹ Washington Health Alliance, “First, Do No Harm: Calculating Health Care Waste in Washington State,” February 2018, www.wacomunitycheckup.org

²² Steve Spaulding, “Changing Health Care Compensation by Rewarding Value-Based Outcomes,” *NEJM Catalyst*, November 20, 2017.

²³ Daniel Wolfson, ABIM Foundation, “Beyond High Prices: Five Reasons to Continue Addressing Overuse,” April 10, 2018.

²⁴ Corrie Colla and Alexander Mainor, “Choosing Wisely Campaign: Valuable For Providers Who Knew About It, But Awareness Remained Constant, 2014-17,” *Health Affairs*, November 2017.

²⁵ Joseph Tanenbaum et.al., “Association of a Regional Health Improvement Collaborative With Ambulatory Care-Sensitive Hospitalizations,” *Health Affairs*, February 2018.

²⁶ NRHI and Milbank Memorial Fund, “When Regional Health Improvement Collaborative and States Work Together,” December 2015.

²⁷ “SHIEC’s Patient-Centered Data Home Initiative Launches Nationally,” January 4, 2018; “The Health Collaborative Participates in National Launch of SHIEC’s Patient-Centered Data Home Initiative,” January 4, 2018.

²⁸ Knowledge@Wharton, “Medical Waste: Why American Health Care Is So Expensive,” August 18, 2016.

²⁹ Rishi Manchanda, “Upstream Doctors,” is the locus classicus of this growing movement, <https://www.amazon.com/Upstream-Doctors-Medical-Innovators-Sickness-ebook/dp/B00D5WNPXE>

³⁰ David H. Freedman, “Health Care’s Upstream Conundrum,” *Politico*, January 10, 2018.

³¹ Meredith Barrett et.al., “AIR Louisville: Addressing Asthma With Technology, Crowdsourcing, Cross-Sector Collaboration, and Policy,” *Health Affairs*, April 2018.

³² Leslie Small, “Home is Where the Health Is: Insurers Tackle Housing Insecurity,” *Health Plan Weekly*, April 30, 2018.

³³ Robert Wood Johnson Foundation, <https://www.rwjf.org/en/how-we-work/building-a-culture-of-health.html>

³⁴ https://www.rwjf.org/en/library/research/2018/05/moving-foward-together--an-update-on-building-and-measuring-a-culture-of-health.html?rid=0034400001lr5NAAQ&et_cid=1256501

³⁵ Robert Wood Johnson Foundation & Academy Health, “Striving Toward a Culture of Health: How Do Care and Costs For Non-Medical Needs Get Factored Into Alternative Payment Models,” January 26-27, 2017.

³⁶ California Endowment, <http://www.calendow.org/building-healthy-communities/>

³⁷ www.modernhealthcare.com/article/20180521/NEWS/180529995

³⁸ <https://www.geisinger.org/freshfoodfarmacy>

³⁹ James Fallows, “Reinventing America,”

<https://www.theatlantic.com/magazine/archive/2018/05/reinventing-america/556856/>