



USC Schaeffer
Leonard D. Schaeffer Center
for Health Policy & Economics

TRANSFORMATIVE IMPACT

2015 Annual Report

SINCE ITS INCEPTION IN 2009, THE SCHAEFFER CENTER HAS RAPIDLY EMERGED AS A LEADER IN HEALTH POLICY AND ECONOMICS THROUGH ITS CAPACITY TO PRODUCE HIGH-QUALITY, RIGOROUS RESEARCH OF MEANINGFUL CONSEQUENCE.

MISSION

The Schaeffer Center measurably **improves value in health** through **evidence-based policy** solutions, **research** and **educational** excellence, and private and public sector **engagement**.

\$61.7 million

in funding received since 2009 (See page 37 for the 2015 financial report).

34

faculty members from **9** USC departments and schools bridge an interdisciplinary approach.

IN 2015

2 **NOBEL LAUREATES**

James Heckman, PhD, joined the Center.

110+

Schaeffer Center researchers published more than 110 papers in peer-reviewed journals.

450+

More than 450 news stories cited Schaeffer Center work and expert opinions on trending health care issues.

25+

Schaeffer Center conferences, policy forums, and seminars were offered.

4

major conferences held in Washington, D.C. addressing some of the most pressing challenges in health care: **mental health, health care finance, the future of medicare, and the value and cost of specialty drugs.**

3 countries

Policymakers in India and England, as well as the U.S., have looked to Schaeffer Center research to improve their health care systems. (page 13, page 11).

4

faculty members provided expert testimony at state and federal hearings.

AS WE ENTER OUR SEVENTH YEAR AT THE CENTER, IT IS WORTH TAKING TIME TO REFLECT ON OUR ROOTS.

When we started the Center, we drew inspiration from our founder and advisory board chairman, Leonard Schaeffer, whose career in health care spanned both the private and public sectors. His understanding of the complex relationship between the two led us to pursue a research and policy agenda that impacts both audiences. Prominent examples include Jason Doctor's interventions to reduce antibiotic prescribing, Neeraj Sood's research to expand health insurance in India, and the Roybal Center's efforts to model the consequences of population aging.

Our dual mission has inspired influential activities beyond research. The events we hosted in Washington DC, for instance, engaged both private industry and policy makers in several important domains. We initiated conversations among thought leaders on such important issues as specialty drug pricing, the future of Medicare, and revamping mental health care services to optimize outcomes. By sharing important information from timely research, the Center is helping public policy-makers and private industry improve their decision-making.

This commitment to a broader view of health and health care has enabled us to recruit accomplished faculty and fellows. This past year, we welcomed Nobel Laureate James Heckman to our team. A world-renowned leader in human development economics, Dr. Heckman's work epitomizes what we are trying to achieve: an interdisciplinary approach to uncover the roots of major social and economic problems. We will be working with Dr. Heckman to understand how early investments in life affect lifetime health outcomes.

Dr. Heckman joins an impressive list of accomplished faculty, including fellow Nobel Laureate Daniel McFadden, and a network of distinguished fellows. He will visit us regularly in our expanded space in the beautiful Dauterive Hall. Such a move—and all our successes—would not have been possible without extensive support from the University's leadership. We are especially grateful to USC President C. L. Max Nikias, Provost Michael Quick, Dean Jack Knott, and Interim Dean Glen Stimmel.

We have benefitted greatly from the advice and counsel of our Schaeffer Center Advisory Board—a group of national leaders with whom we are honored to engage. We are grateful for their leadership, vision, and generosity which have shaped our efforts to address the profound challenges facing our nation.

Dana Goldman, PhD

Leonard D. Schaeffer Director's Chair

Leonard D. Schaeffer Center for Health Policy & Economics



LONG-TERM VISION

The Leonard D. Schaeffer Center for Health Policy & Economics will be a premier **research** and **educational** institution recognized for **innovative, independent** research making significant contributions to **policy** and **health improvement**.



LEONARD D. SCHAEFFER CENTER
FOR HEALTH POLICY & ECONOMICS

ABOUT THE SCHAEFFER CENTER

THE LEONARD D. SCHAEFFER CENTER FOR HEALTH POLICY & ECONOMICS WAS ESTABLISHED IN 2009 AT THE UNIVERSITY OF SOUTHERN CALIFORNIA THROUGH A GENEROUS GIFT FROM LEONARD AND PAMELA SCHAEFFER. THE CENTER REFLECTS LEONARD SCHAEFFER'S LIFELONG COMMITMENT TO SOLVING HEALTH CARE ISSUES AND TRANSFORMING THE HEALTH CARE SYSTEM.

Today's ever-changing health policy landscape requires complex solutions, creative research methods, and expertise in a variety of fields. Schaeffer Center faculty excel not only at analyzing the current climate, but also in predicting where health trends will lead. A collaboration between the USC Price School of Public Policy and the USC School of Pharmacy, the Center brings together health policy experts, a seasoned pharmacoeconomics team, other faculty from across USC—including the Keck School of Medicine, the School of Social Work, and the Viterbi School of Engineering—and a number of affiliated researchers from other leading universities.

The Center offers the human and technical capacity necessary to conduct breakthrough interdisciplinary research, exceptional policy analysis, and leading-edge training. More than 30 distinguished scholars investigate a wide array of topics. The Center's work is augmented by a visiting scholars

program and partnerships with other universities that allow outside researchers to benefit from the Center's unparalleled infrastructure and data collection. The Schaeffer Center actively engages in developing excellent research skills in new investigators who can become the innovators of the future. At the same time, the Center supports the next generation of health care leaders in creating strong management, team-building, and communication skills.

The Center's vision is to be a premier research and educational institution recognized for innovative, independent research that makes significant contributions to policy and health improvement. Its mission is to measurably increase value in health through evidence-based policy solutions, research excellence, transformative education, and private and public-sector engagement. With its extraordinary breadth and depth of expertise, the Center will have a vital impact on the positive transformation of health care.

The Center continues to grow and flourish in its home in Verna and Peter Dauterive Hall, which opened in September 2014 and was designed to foster the interdisciplinary and forward-thinking collaboration the Schaeffer Center embodies.



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PRIORITY ONE

Improve the Performance
OF HEALTH CARE MARKETS



Limitations of High-Deductible Health Plans

ABOVE: Schaeffer Center Director of Research Neeraj Sood's expertise on the impact of high-deductible health plans was called upon by the California State Senate Committee on Health.

THE GROWTH IN POPULARITY OF HIGH-DEDUCTIBLE HEALTH PLANS (HDHPs) raises concerns that their short-term savings may lead to added health care costs down the road.

A series of papers by **Neeraj Sood**, director of research at the Schaeffer Center and vice dean for research at the USC Price School of Public Policy, provides insight into these trends. Sood and his colleagues analyzed whether HDHPs saved costs in the long term and found that, after three years, spending continues to be reduced for both individuals and employers in companies that offer the plans.

"Employers are really worried about controlling health care costs," said Sood in a *Modern Healthcare* article. "This research definitely shows that offering high-deductible plans is an effective strategy for doing that, at least over a three-year horizon."

Spending decreases in outpatient care and pharmaceuticals were the key drivers of the reduction.

They might know they should ask the price of a procedure, but patients are "intimidated to find out how much something is going to cost," explained Neeraj Sood in a **KPCC** interview about the California State Senate briefing on health care costs at which he testified.

Furthermore, the researchers found no evidence of increases in emergency department or inpatient care.

This leads to the question: Are consumers indiscriminately reducing their health plan usage due to a misunderstanding of their benefit structure or lack of knowledge about the consequences of decreasing so-called high-value services?

To explore this more nuanced question, Sood and his colleagues analyzed medication adherence. They found evidence of consumers reducing overall drug utilization, prompting concern about long-term adverse consequences on wellbeing and overall health care costs.

Testifying at the California State Senate Committee on Health, Sood said the situation is especially complicated because many newly insured individuals in high-deductible plans have no experience navigating the health care system.



Study Indicates Hospital Productivity May be Increasing

Health economist Austin Frakt wrote in the *The New York Times* about the study and its implications: “The findings by Mr. Romley and colleagues from the Schaeffer Center for Health Policy and Economics at the University of Southern California are a hopeful sign the [negative consequences of the cost-disease theory on the ACA] need not happen. A strength of the study is it incorporated an aspect of the quality of care into its measure of productivity.”

THE U.S. HEALTH CARE SYSTEM MIGHT BE PERFORMING BETTER THAN MANY BELIEVE, according to Schaeffer Center research which found hospital productivity increased between 2002 and 2011.

John Romley, visiting associate professor at the USC Price School of Public Policy and the School of Pharmacy, and his co-authors, Schaeffer Center Director **Dana Goldman** and **Neeraj Sood**, analyzed data of elderly Medicare beneficiaries with heart attacks, heart failure, or pneumonia between 2002 and 2011. They used a novel study design that adjusts for trends in quality of care and illness severity—factors not adequately addressed in previous studies.

Taking these additional factors into consideration for their model, the researchers found that the annual rates of productivity growth improved to +0.78 percent per year for heart attack, +0.62 percent for heart failure, and +1.90 percent for pneumonia. The increases contrast with negative productivity growth rates (-0.64 percent per year for heart attacks, -0.91 percent for heart failure, and -0.39 percent for pneumonia) that do not account for

trends in the severity of conditions or patient outcomes achieved after hospitalization.

Such positive growth suggests the widely held concern that the health care industry is affected by “cost disease”—in which a heavy reliance on labor limits opportunities for efficiencies—may be misguided.

“The Affordable Care Act asks hospitals and other health care providers to achieve the level of productivity gains seen in the rest of the economy. In recent years, U.S. hospitals have actually managed to make that kind of improvement in treating a number of important conditions,” observed Romley.

Leading the Conversation on Health Care Consolidation



Schaeffer Center Assistant Research Professor Erin Trish presents her research on health insurance consolidation.



Schaeffer Center Director of Public Policy Paul Ginsburg testifies at a U.S. Senate panel about the implications of health insurance consolidation for consumers.

SCHAEFFER CENTER EXPERTS ARE POLICYMAKERS' GO-TO SOURCE FOR INFORMATION about trends in consolidation in the health care industry.

Paul Ginsburg, director of public policy at the Schaeffer Center, provided expert testimony for the U.S. Senate Committee on the Judiciary's Subcommittee on Antitrust, Competition Policy, and Consumer Rights. His briefing gave insight into the market mechanisms and complexities that must be addressed in analyzing what an insurance merger might mean for consumer costs.

"We may believe that a merger will lower prices paid to providers, but we then need to analyze whether fees will be passed on to those buying insurance," noted Ginsburg, who also has consulted with the U.S. Department of Justice—including the assistant attorney general—on impending insurance mergers.

Erin Trish, assistant research professor at the Price School, is another vital resource for policymakers investigating the effects of consolidation. One paper she wrote in 2015 delved into how health-insurer market concentration and bargaining power with hospitals affect health insurance premiums. She discovered the effects on premiums vary according to the overall market characteristics.

In an interview with the **Los Angeles Times**, Trish noted the complexities inherent in the market that make predicting the outcomes so challenging. "When insurers merge, there's almost always an increase in premiums. ... At the same time, though, consolidation among insurers could mean a stronger position in negotiating lower rates with hospitals."

In 2015, Trish briefed the Department of Justice, Federal Trade Commission, and U.S. Department of Health and Human Services on insurer consolidation.

Journalists also depend on the Schaeffer Center to explain what consolidation means for the public and consumer costs. Ginsburg, Trish, **Glenn Melnick**, and other faculty members are highly sought after to explain ongoing developments in the high-profile merger trends. Melnick is the Blue Cross of California Chair in Health Care Finance at the Price School.

"All of this consolidation is about bargaining power," Melnick told *The Wall Street Journal*. He pointed to his study published in *Health Affairs* in 2011, which suggested increased health-insurer consolidation could benefit consumers by pushing down hospital rates, "as long as health-plan markets remain competitive."

Schaeffer Center Experts Weigh in on Cadillac Tax

Impact on Low-Income Workers

How will the proposed Cadillac tax—the final component of the Affordable Care Act, scheduled to go into effect in 2018—affect low-income workers? That’s the question **Erin Trish** and a colleague set out to answer.

Currently, employer contributions towards the premiums of workers’ health insurance are excluded from taxes. To understand the net costs to an enrollee in an employer-sponsored plan, Trish and her co-author broke down the financial outcome for low- and high-income workers, taking into account costs, benefits, and tax exclusions with and without the tax. They assessed the effects before and after the Cadillac tax for three representative health plans: silver (with the plan covering 70 percent of total health care spending), gold (80 percent), and platinum (90 percent).

The employer subsidy, coupled with the Cadillac tax, actually impacts low-income workers to a greater degree than high-income workers. Assuming both are in the same high-cost health plans, low-income workers would face a larger decrease in the net tax benefit and a larger increase in net cost compared to high-income workers.

“The tax exclusion for employer-sponsored insurance has been a longtime source of inefficiency and inequity in U.S. health care,” Trish explains. “Our findings suggest that, while implementing the Cadillac tax may look like an initial step toward reducing this inefficiency, it will actually result in increased inequity across workers of different income levels.”



Reducing Inefficiencies and Wasteful Health Care Spending

Schaeffer Center Senior Fellow **Bob Kocher** looks at the Cadillac tax from a different angle. In a *New York Times* op-ed, he and his co-author argue that the tax offers a significant step toward reducing inefficiencies in health care provision, which is the best way to lower out-of-pocket costs.

They aim their argument at the employer subsidy that the tax targets. Kocher and his co-author write: “By providing an incentive for the purchase of ever-more-generous health insurance, the tax exclusion has been a major driver of health care inflation. By covering more

services, offering more choices and lowering the costs people experience, expensive plans encourage people to use more health care services and, when there are options, more expensive services.”

They argue the cost burden of higher health care spending already has shifted to workers through lower wages and higher state and government spending on health care. “The public is complaining bitterly about the growing out-of-pocket expenses for health care,” they write. “This is a big problem, largely driven by employers who are shifting costs through higher premiums and more deductibles to their workers. The best way to lower out-of-pocket costs is to rid our health care system of inefficiency and waste.”

Understanding Historic Trends in U.S. Health Care Spending

U.S. SPENDING ON HEALTH CARE HAS UNDERGONE SIGNIFICANT CHANGES in the last 50 years. Understanding previous trends helps put the current health care spending landscape in perspective and allows for educated predictions regarding the future. **Alice Chen**, assistant professor at the Price School, and **Dana Goldman** analyzed these expenditure shifts and identified four major periods:

1960–1981 | **Exploration**

The 1960s through the 1980s saw a sharp increase in spending due to the expanding economy, an increasing presence of employer-sponsored insurance plans, new technology, and socioeconomic factors such as increasing income, education, and age.

1981–1994 | **Policy Experimentation**

In response to decades of increased spending, between 1981 and 1994, policymakers and employers went through several rounds of policy experimentation resulting in several fluctuations in expenditures. Furthermore, the recession of the early 1980s resulted in a reduction in health care spending. Expenditures increased in the middle of the decade because of insurance expansion through the Consolidated Omnibus Budget Reconciliation Act (COBRA), and then fell again in the early 1990s, as a result of the increasing popularity of managed care.

1994–2002 | **Backlash**

This period represents an increase in expenditures, insurance premiums, and cost sharing due to a backlash from the rise of managed care. During the late 1990s and early 2000s, negative perceptions of managed care increased, causing employers and individuals to favor preferred provider organizations (PPOs) and more fluid benefit plans. In addition, hospital prices and utilization rose, while Medicare eligibility expanded and payouts increased—all of which contributed to rising health care expenditures.

2002–2015 | **Golden Era**

A steady decline in health care expenditures, caused not only by the Great Recession but also by structural changes in the demand and supply side of the market, has been a major influence in health care spending since 2002. Permanent changes in benefits and health care delivery—including value-based insurance design, consumer-directed health plans, Accountable Care Organizations (ACOs), and preventive care—have contributed to an overall reduction in spending.

Chen and Goldman conclude that technology will play a large role in future expenditures. They also note that identifying what types of innovation can help curb costs will be key to this continuing trend of reduced health care spending.



PRIORITY TWO

Increase Value
IN HEALTH CARE DELIVERY

Addressing Inappropriate Antibiotic Prescribing



Schaeffer Center Director of Health Informatics Jason Doctor presents his research on inappropriate antibiotic prescribing.

DOES THE TIMING OF A DOCTOR'S APPOINTMENT AFFECT THE LIKELIHOOD of whether a patient will be prescribed antibiotics? According to research led by USC School of Pharmacy Associate Professor **Jason Doctor** and **Daniella Meeker**, assistant professor at Keck School of Medicine of USC, physicians are more likely to prescribe antibiotics—necessary or otherwise—later in the day.

Doctor and Meeker analyzed visits of adult patients who had acute respiratory infections and found that their chances of being prescribed antibiotics increased by 26 percent between the first and fourth hours of a physician's shift. This behavior demonstrates the theory of decision fatigue—the idea that self-control erodes after making repeated decisions.

Changes that might reduce the effects of decision fatigue include technological time-dependent decision support, modified schedules, shorter sessions, mandatory breaks, or even snacks, according to the researchers.

Inappropriate antibiotic prescribing is a nationwide problem with severe consequences. This study adds to a body of research by Doctor and Meeker on inappropriate antibiotic prescribing patterns and public health interventions that has influenced health care delivery and improved its value. One intervention they developed to alleviate overprescribing—having providers sign and post a pledge on their exam-room walls—has been shared as a best practice by the Centers for Disease Control and Prevention and adopted by health departments in four states.

An Unexpected Outcome Linked to Cardiology Meetings

HOW DO CARDIOLOGY PATIENTS FARE WHEN MOST CARDIOLOGISTS ARE AWAY FROM THE HOSPITAL? That is the question Schaeffer Center Director **Dana Goldman, John Romley**, and colleagues set out to answer. Romley is a visiting associate professor at the Price School and the USC School of Pharmacy. Their findings were surprising: High-risk patients who were admitted to teaching hospitals during dates of national cardiology conferences had substantially lower 30-day mortality rates compared to those admitted on non-meeting dates. High-risk patients with cardiac arrest had mortality rates of 60 percent during conference days compared to 70 percent during non-conference days.

When analyzing the patterns further, they found high-risk patients were treated differently during conference dates, with lower rates of invasive procedures such as coronary angioplasties compared to non-conference dates, without any detriment to patient survival. This finding provides evidence that the interaction between physician expertise, procedure invasiveness, and patient outcomes may be more complicated than originally thought.

Goldman and Romley emphasize there are many competing factors that may contribute to these findings. For example, the impact of the composition change of providers surrounding the conferences, a decline in the overall intensity of care provided, or declines in the volume of less urgent or scheduled cardiovascular hospitalizations during meeting dates all may contribute to the care and resulting outcome.

The controversial findings garnered significant attention from media and industry professionals. The research was cited in numerous news outlets including *The New York Times*, *Los Angeles Times*, NPR, and Fox News. It was also the most talked about article of 2015 for *JAMA Internal Medicine*.

Moving forward, though it is hard to pinpoint what exactly is causing this paradoxical effect, it may be important for physicians to consider the intensity of care provided and whether the potential harms will outweigh the risks, especially for high-risk patients.

“There are a number of ways to interpret this. ... But here’s the thing. Whatever is different during the meetings, it’s associated with lower intensity care and better outcomes. That’s probably worth looking into,” wrote Dr. Aaron E. Carroll in *The Incidental Economist* about the findings.



Saving Lives by Providing Universal Coverage for Cardiac Care in India

MANY LOW- AND MIDDLE-INCOME COUNTRIES FACE A COST DILEMMA when considering whether to provide coverage for health ailments such as cardiovascular disease. However, a paper co-authored by **Neeraj Sood** analyzes the economic and societal impact of expanding national insurance to include cardiovascular coverage in India—and finds the benefits outweigh the costs.

The study indicates that insurance programs covering all three treatments—primary, secondary, and tertiary—have the largest overall impact on population health and are more cost-effective than the status quo of non-coverage.

“The findings from this study show that providing universal coverage for cardiac care will not only save lives but is also good value for money, even in resource-constrained environments,” Sood says.

These results provide evidence supporting the expansion of government social insurance programs in countries like India. Such expansions benefit the overall economy and can inform policy conversations for countries looking into expanding coverage strategies.

Defensive Medicine Corresponds to Lower Malpractice Suits

PHYSICIANS WHO SPEND MORE MONEY AND RESOURCES CONDUCTING TESTS AND PROCEDURES for patients are less likely to be sued for malpractice, according to a study led by **Seth Seabury**, associate professor of research emergency medicine at Keck School of Medicine of USC.

Such “defensive medicine” is widely practiced by doctors under the assumption that it protects them from liability risks. But no study had looked at the link between physician spending and the rate of malpractice suits. Seabury was curious about whether or not such a correlation existed.

His findings—that defensive medicine can be linked to a reduction in the rate of lawsuits—raise concerns that malpractice fears could impede health care reform.

“Part of our point is that, if this relationship is true ... that simply spending more, irrespective of patient health or clinical needs, leads to fewer lawsuits, as physicians tend to think that it does, and if physicians believe that by embracing some of these efforts to be more efficient and increase value they’re going to subject themselves to higher liability risk, we think that they’ll be potentially very reluctant to buy into those [efforts],” Seth Seabury said to **KPCC** about the implications of his study on the broader health care landscape.



Taking a Long-Term View on Health

“We tend to exaggerate the importance of immediate costs and take myopic views of benefits,” wrote Dana Goldman in the *Harvard Business Review*.

THE CORNERSTONE PROBLEM WITH THE HEALTH CARE SYSTEM is a short-term outlook in a field that warrants a long-term view of value and cost, **Dana Goldman** argues in the *Harvard Business Review*. The care an individual receives has value and impact over the course of a lifetime. As such, the cost and quality of care also should be quantified along a long-term paradigm.

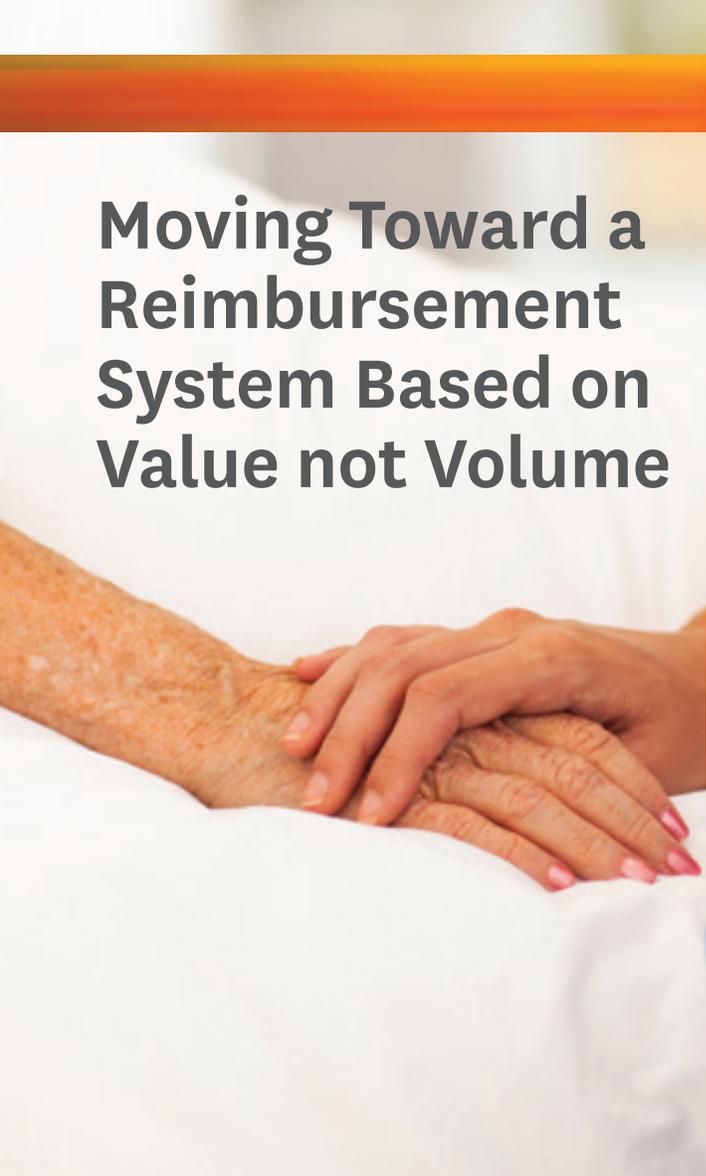
Currently, few incentives exist in the health care system that adequately account for the long-term benefit that treatments and interventions provide, Goldman says. Diabetes drugs and beta-blockers, he adds, “keep patients out of the hospital, and society has an interest in charging nothing for them. In some cases, it may even make sense to have negative copayments—that is, pay patients to take their drugs.”

He notes the whole system lacks these important incentives to enforce adequate care and services. “Insurers responsible for

our care when we are in our 40s and 50s are unlikely to make investments in prevention that accrue to Medicare,” Goldman notes. “This may be why the treatment of those afflicted with hepatitis C, which sometimes takes a decade to develop symptoms, poses such a vexing challenge.”

“We tend to exaggerate the importance of immediate costs and take myopic views of benefits,” he writes. Moving forward, the challenge, he says, “is to figure out how to create and develop policies—and markets—to reward long-term benefits appropriately.”

This shift to a longer horizon in payment policies is also a foundational element of value-based payment in health care (see opposite page) and pharmaceuticals (page 23).



Moving Toward a Reimbursement System Based on Value not Volume

“GIVEN MEDICINE’S GROWING COMPLEXITY AND THE INCREASING NUMBER OF AMERICANS WITH CHRONIC DISEASES, paying numerous providers to work independently on a fee-for-service, or FFS, basis makes little sense,” writes **Paul Ginsburg** in a *Wall Street Journal* article debating FFS with Richard Amerling. Ginsburg is the Norman Topping Chair in Medicine and Policy at the USC Price School for Public Policy and director of public policy at the Schaeffer Center.

He notes that the team-based system integral to today’s health care delivery requires different approaches to payment and coordination to ensure that patients receive optimal care. Agreeing with **Dana Goldman’s** argument for a long-view perspective (see opposite page), Ginsburg recognizes the current lack of incentives providers have to ensure patients receive the best-coordinated care. An example is an elderly patient who, after being hospitalized, requires post-acute care in a skilled nursing facility. “Under FFS payment, neither physicians nor hospitals have much incentive to care about what happens in post-acute care and how much it costs,” he writes.

He adds that components of FFS will always be an element of payment systems, so the accuracy of fee schedules should be improved as well. However, the FFS payment approach should be blended with larger units of patient care thereby focusing on value and quality of care a patient receives.

A New Framework for Measuring Innovation Cost and Added Value

NEW MEDICAL TECHNOLOGIES DRIVE BOTH HEALTH CARE SPENDING AND BETTER HEALTH OUTCOMES. While treatment costs are easily measured and have shown continual increases over the years, the value of those treatments—the measured benefits—have not always shown the same growth trajectory. This leads to the vexing question: Does society get what it pays for?

Darius Lakdawalla, Quintiles Chair in Pharmaceutical Development and Regulatory Innovation at the USC School of Pharmacy, and his team of researchers established a quality-adjusted, cost-of-care framework to help close this information gap. The framework allows for measuring increases in health care costs, offset by the value of improved health outcomes.

Lakdawalla and his co-authors applied their quality-adjusted cost-of-care framework to case studies of colorectal cancer and

multiple myeloma. For colorectal cancer, the drug cost per patient increased by \$34,493 between 1998 and 2005 due to new drug launches, while the value from offsetting health improvements only netted a modest \$1,377 increase in quality-adjusted cost of care. For multiple myeloma, new therapies increased treatment costs by \$72,937 between 2004 and 2009, but offsetting health benefits lowered the overall quality-adjusted cost of care by \$67,863. By comparison, patients on established first-line myeloma therapies saw costs rise without corresponding benefits.

As these case studies illustrate, this framework provides policymakers with important considerations beyond increases in financial costs and also identifies treatments in which costs rise without corresponding increases in value.



PRIORITY THREE

Improve Health Outcomes
FOR AN AGING POPULATION



Schaeffer Center's Roybal Center for Health Policy Simulation Receives NIH Renewal

ABOVE: Roybal Center leadership Etienne Gaudette, Dana Goldman, and Bryan Tysinger

THE NATIONAL INSTITUTES OF HEALTH (NIH) HAS RENEWED THE ROYBAL CENTER FOR HEALTH POLICY SIMULATION'S FUNDING for an additional five years. For nearly 10 years, the Center—housed within the USC Schaeffer Center—has addressed salient health policy questions to improve outcomes for the aging U.S. population.

“The work done at the Roybal Center for Health Policy Simulation has enormous policy implications,” says **Etienne Gaudette**, of the Roybal Center. “This renewal will allow us to expand our scope to international questions of aging and learn what types of public policy can work in a global setting.”

Previous research includes developing models that have explored the link between population health and economic outcomes, and predicting how social policies will affect the wellbeing of current and future elderly people. Through novel, innovative approaches in analyzing social programs' effects on society's older populations, the Center seeks to translate its promising findings into effective programs and policies.

With the current renewal, the Center will focus on promoting aging policy discussions in two areas of emphasis: finding policies to mitigate the social consequences of health disparities, and assessing international lessons for U.S. aging policy. These research themes will be the basis for future projects, which include extending the Future Elderly Model for Los Angeles County, researching childhood determinants of health in old age, and comparing lifetime outcomes in Canada and the United States. The Center's previous research points to these areas as having significant potential to improve the health and wellbeing of elderly Americans; it strives to accomplish this by continuing to share its research with decision-makers in U.S. federal agencies and international governments.

The Roybal Center for Health Policy Simulation is led by **Dana Goldman**, director; Etienne Gaudette, director of policy and **Bryan Tysinger**, director of simulation and data.



Schaeffer Experts Contribute to Landmark Report on Life Expectancy

A NEW REPORT BY THE NATIONAL ACADEMIES OF SCIENCE, ENGINEERING AND MEDICINE

projects examines how trends in life expectancy affect the distribution of public benefits across the income spectrum.

Schaeffer Center Director **Dana Goldman** serves on the National Academy of Science Committee on Long-Run Macroeconomic Effects of the Aging U.S. Population – Phase II, which contributed to the report. The work also relied heavily on the dynamic simulation modeling and expertise of the **Roybal Center for Health Policy Simulation**.

The report examined the implications of changes in life expectancy on Social Security and Medicare benefits. Middle- and high-income earners can expect to live

longer than their parents did. But for individuals in lower-income classes, life expectancy has stayed stagnant—and may even be declining.

This inequity in life expectancy, coupled with widening income differences, leads to higher-income individuals increasingly collecting some government benefits over more years than lower-income individuals. This has real implications for social programs originally made to benefit those less well-off and more vulnerable.

“The bottom line is that social institutions are not keeping up with the demographic risks that the population now faces,” says Goldman about the report’s implications for federal programs.

Meeting Tomorrow’s Medicare Challenges

Baby Boomers Will Change the Face of Medicare

BY 2030, THE YOUNGEST BABY BOOMERS WILL BE ELIGIBLE FOR MEDICARE, swelling the estimated U.S. population aged 65 or older from just under 40 million today to 67 million. According to predictions using the **Future Elderly Model**—a unique, micro-simulation model developed by researchers at the Schaeffer Center in collaboration with other institutions—individuals will live longer (on average, almost a year longer compared to 2010 estimates) but, for many, those extra years will come with increased disability (rising from 7.4 years of disability in 2010 to 8.6 years in 2030).

“Generally, by 2030, the typical elderly beneficiary will continue to be female but slightly younger, less likely to be white, more educated, more likely to have never smoked but more likely to be obese, and more likely to be disabled and have more chronic conditions,” according to the report. **Etienne Gaudette, Bryan Tysinger, and Dana Goldman**—directors of the **Roybal Center for Health Policy Simulation**, which led the development of the Future Elderly Model—co-authored the report along with Alwyn Cassil.

“It’d be one thing if there was an increase in life expectancy while maintaining health, but this is different. If you have more people that are disabled, it’s more costly, and we’re paying more because they’re living longer,” said Goldman in a Kaiser Health News article about the report. “In some ways, we are victims of our success” in extending lives and preventing mortality, he wrote. “We’ve done such a good job of preventing cardiovascular disease that now we have more cancer and Alzheimer’s.”

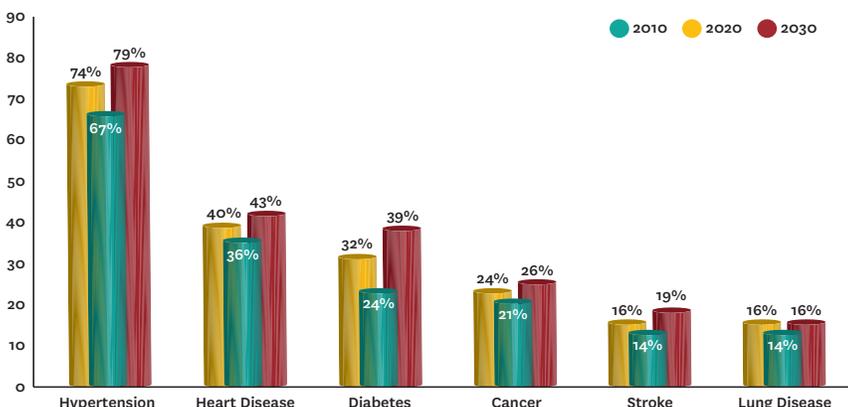
Embracing New Medicare Payment Systems

MEDICARE’S PAYMENT STRUCTURE WILL HAVE TO BE RECONSIDERED TO MEET CHANGES in both overall population size and demographics, according to an article co-authored by **Paul Ginsburg** that explores the pros and cons of the Center for Medicaid & Medicare Services’ (CMS) pilot programs and initiatives to reform the provider payment system.

“Payment reform is an important opportunity for the Medicare program to control costs and improve quality, but putting out voluntary models that are attractive enough to providers and then transitioning them to approaches that penalize nonparticipation will be challenging,” Ginsburg says. “The recent MACRA [Medicare and CHIP Reauthorization Act] legislation signaled strong bipartisan support for Medicare payment reform and provided the program with an important incentive to attract physician participation.”

In the *New England Journal of Medicine*, Ginsburg and Alice Rivlin detailed why Medicare is at a pivotal moment in history. They noted that embracing alternative payment models and mechanisms to increase quality and efficiency in the care system will be necessary for Medicare to best serve this new generation. “Medicare is in a position to lead the health system toward more efficient delivery of care,” they wrote. “To meet this challenge, we believe that CMS needs to step up the vigor of its pursuit of payment reform in the traditional Medicare program and competition in Medicare Advantage.”

Medicare Beneficiary Chronic Illness Trend



Study Illuminates Potent Drug-to-Drug Interaction

A BLOOD THINNER KNOWN FOR SERIOUS DRUG INTERACTIONS IS LINKED TO INCREASED HOSPITALIZATIONS for falls, altered mental state, and insulin shock for Medicare patients who also take certain diabetes drugs, according to findings from a study co-authored by Schaeffer Center researchers **John Romley, Dana Goldman, Cynthia Gong,** and others. Romley is a visiting associate professor at the Price School and the USC School of Pharmacy. Gong is a PhD student at the Schaeffer Center.

They found hospital admission or emergency room visits were nearly 22 percent higher for Medicare patients taking warfarin with diabetes drugs glipizide or glimepiride.

This research may have broad implications, considering that three out of 10 elderly Americans have diabetes and seven out of 10 have multiple chronic conditions—many of which are treated by warfarin. An estimated 265,000 hospitalizations and ER visits per year among older U.S. residents occur due to adverse drug events. 40 percent of

these are attributable to antidiabetic and anticoagulant medication combinations. Furthermore, warfarin is known to interact adversely with many drugs and foods.

Within a random sample of 465,918 Medicare beneficiaries, the researchers found that 2,111 patients taking warfarin and one of the antidiabetic drugs were hospitalized or visited the ER for hypoglycemia. 78 of those patients ended up at the hospital multiple times.

The trend was more pronounced among men 65 to 74 years old, the researchers noted.

Doctors who are made aware of these drug interactions could save lives, reduce harm—and save the health care system millions of dollars. Hospital visits for hypoglycemia cost an average of \$20,500 per stay, according to the study. Treatment of fall-related medical conditions also cost an estimated \$12,300 per stay.



The Multigenerational Impact of Policy Changes

WHILE INCREASING LIFE EXPECTANCY CARRIES OBVIOUS BENEFITS, it also holds substantial risks for both individuals and society. Many older people face diseases and disabilities that attack the mind and body, as well as the prospects of financial insecurity and social isolation. These hazards fall hardest on those with the least education and financial resources. Research led by **Julie Zissimopoulos**, Schaeffer Center associate director, explores these challenges to find solutions to help people live, not just longer, but also more happily and securely.

In an article published in the *American Academy of Arts and Sciences* journal, *Daedalus*, Zissimopoulos and co-authors including **Dana Goldman**, offer five policy options aimed at achieving these goals. They include: enhancing lifelong learning so older workers can function effectively in the labor force; encouraging seniors to remain

productively engaged in society; improving options for financial security, including paid leave for family caregiving and reforming Social Security; providing quality health care for all; and building a culture of shared sacrifice and benefit across generations.

Such initiatives also would benefit younger Americans. “We are entering an era in which people are expected to take increased personal responsibility for their health and financial situation,” Zissimopoulos and her co-authors write. “The view that our social insurance system has become unaffordable [driven largely by our aging population] ... has in turn cost young people their sense of financial security.”

“Families are often the first to respond to change. Policy tools designed to support an aging population may threaten the ability of families to provide their own safety net or enhance it.”



Zissimopoulos is a nationally recognized authority on aging and has spoken at numerous events, including one sponsored by AARP.

Prescription Coverage Gap More Disruptive to Vulnerable Populations

SCHAEFFER CENTER INVESTIGATORS EXAMINED THE IMPACT OF THE MEDICARE PART D COVERAGE GAP known as the “donut hole” on low-income and minority populations to determine if it changes individuals’ use of medications. Their findings show that the gap is particularly disruptive to minorities and low-income households.

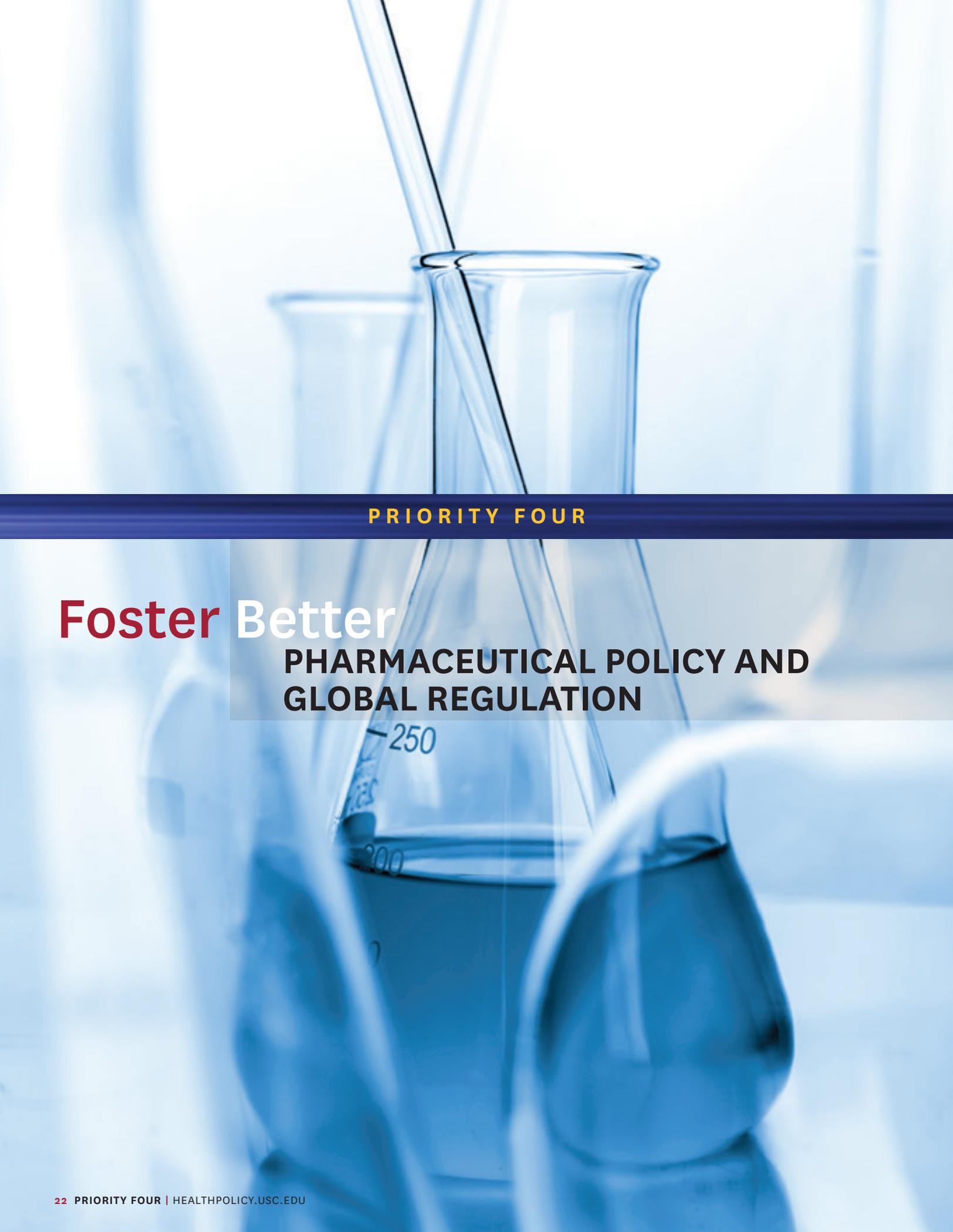
In the study, published in the *American Journal for Managed Care*, Schaeffer Center researchers **Julie Zissimopoulos**, **Geoffrey Joyce**, **Lauren Scarpati**, and **Dana Goldman** examined the effects on racial and ethnic minorities of cycling in and out of coverage for prescription medications.

The researchers focused on whether beneficiaries subject to the coverage gap behaved differently from individuals who had continuous coverage throughout the year. They also were interested in any impact race or ethnicity had on adherence to prescription drugs in the coverage gap.

The researchers found that the Medicare Part D coverage gap disturbed medication-adherence patterns across all groups studied but had a particularly disruptive effect on minorities and low-income beneficiaries.

Even though the Affordable Care Act phases out this gap, the study provides important insights into the consequences of coverage gaps, especially for high-risk populations. “The trend toward more consumer-directed health care compels patients to take an active role in plan choice and managing their health care,” Zissimopoulos says. “Supporting vulnerable groups in this process will continue to require more than just premium subsidies.”

Furthermore, while substitution of less expensive or generic drugs is an important component of reducing overall health care costs, the change in prescription adherence identified by the researchers could lead to higher health care costs and poorer health outcomes in the long term.



PRIORITY FOUR

Foster Better
PHARMACEUTICAL POLICY AND
GLOBAL REGULATION

Innovation Needed in Prescription Drug Payment Systems



HOWEVER WELL-INTENDED, THE “BEST PRICE” REGULATIONS in the Medicaid prescription drug rebate program “have transformed the U.S. into one of the world’s least innovative testing grounds for new pricing strategies, even compared with public-sector payers in other developed countries,” Schaeffer Center Director **Dana Goldman** wrote in a commentary for *Modern Healthcare*.

In theory, requiring that drug companies charge Medicaid the lowest price negotiated by any other buyer saves taxpayer dollars but, in practice, it “contributes significantly to a dysfunctional pricing process ... and threatens to stifle broad access to many new, innovative therapies,” he explained.

Goldman argued that these complex rules stifle novel, long-term payment approaches such as “cure-now, pay-later” arrangements, which could save money and lives by offering a “down payment” based on assessments of a drug’s long-term value to patients and society as judged by such factors as how many liver transplants and chronic cases are avoided.

“Progress in biology and science has outstripped our economic institutions,” Goldman observed. “As a result, innovation in drug financing and pricing is long overdue. Linking payment to value over time is in the interest of every stakeholder. The answer is not to deny patients access to valuable treatments that can lead to longer, healthier lives.”

He concluded, “We can do better than that.”



Experts Weigh in on Treatment Scenarios for Hepatitis C

USING AN INNOVATIVE COST-BENEFIT RESEARCH DESIGN, Dana Goldman found that treating 5 percent of all hepatitis C patients with the latest drugs would be more effective for reducing infections and health care costs than the current approach. *Health Affairs* published his analysis.

Goldman and his fellow researchers found that a “treat 5 percent” approach would reduce infections from 2.7 million cases to 39,000 in 50 years—a drastic improvement over the current approach of relying on older drugs, which would only reduce infections to 207,000 cases over the same period. The “treat 5 percent” scenario also would lower health expenditures below the baseline’s costs within 20 years of implementation.

“We made a mistake with HIV by limiting access to treatment to just people who had AIDS, and we ended up with a virus that has been with us for decades,” says Goldman. “We didn’t initially treat HIV aggressively enough in part because the science wasn’t there to justify it. With hepatitis C, we have the science. We just need to find a way to finance it.”

In a separate study, **Jeff McCombs**, Schaeffer Center director of graduate studies, found an effective indicator of the disease’s progression. The indicator

is highly predictive and shows the risk of deferring treatment for too long, making it a significant tool for “watchful waiting.”

Treating hepatitis C has always come with high costs, which include the onerous side effects of older therapies. As a result, many payers and providers historically have used the “watchful waiting” approach, starting therapy only when the disease showed specific signs of progression.

McCombs and his team conducted a retrospective analysis of U.S. Veterans Administration electronic records to analyze when treatment began, along with its associated patient outcomes. “The benefits of treatment are diminished if treatment is delayed,” they found.

“This is something to discuss with payers,” McCombs adds, “since saving money now by delaying treatment may result in greater costs in the future.”

In an op-ed for the *Los Angeles Times*, McCombs and **D. Steven Fox**, assistant professor at the Keck School of Medicine of USC, urged establishment of a protocol using the indicator. “Doing so will strike a practical, and humane, balance. Knowing who does not need treatment right away improves access for those who do,” they wrote.



“It’s sort of a popular thing to say, ‘I want lower drug prices,’” said Geoffrey Joyce in an article for the **San Jose Mercury News**. “That’s like saying, ‘I’m against crime,’ and who’s not in favor of that? But the reality is there are implications and consequences.”

Geoffrey Joyce is the director of health policy at the Schaeffer Center and chair of the pharmaceutical and health economics department at the USC School of Pharmacy.

The Pricey Side of the Generic Drug Market

EARLIER THIS YEAR, THE PRICE OF A GENERIC DRUG WAS INCREASED by 5,000 percent overnight, sparking outrage and debate across the nation about generic drug pricing. While this example was egregious by all accounts, such increases are not uncommon.

Geoffrey Joyce has become the go-to expert for reporters and policymakers who seek to understand the complexities and nuances of the generics and branded pharmaceutical markets.

Months before the shocking price jump, Joyce laid out the reasons for the trend in generic price increases in a column for *The Conversation* published in January 2015. He said reduced competition caused by consolidation in the industry, as well as changing incentives due to market

and regulatory forces, accounted for the majority of cases.

Joyce was invited to provide expert testimony before the California State Senate on rising health care costs and the impact of pharmaceutical pricing. He presented the complexities of valuing innovation while still ensuring widespread access to important technological advances. He also pointed out the important distinction between a high price for a new, lifesaving medication and a rising price for a generic drug.

Since then, Joyce has been interviewed by numerous media outlets, including Al Jazeera America’s *Inside Story*, the *San Jose Mercury News*, and the *Los Angeles Times*.



The community-based program through the USC School of Pharmacy places pharmacists in safety-net clinics throughout greater Los Angeles.

Community-Based Pharmacists May Solve Gaps in Care

A PILOT PROGRAM LED BY **GEOFFREY JOYCE** AND USC SCHOOL OF PHARMACY COLLEAGUES kept high-risk patients out of the hospital by improving their medication adherence, according to preliminary analysis of the data.

The program placed pharmacists in 10 clinics predominantly serving low-income individuals in Los Angeles and Orange counties. Each clinic was equipped with a pharmacist, a pharmacy resident, and a technician. The aim was to determine whether pharmacists could bridge the gap in patients' knowledge and understanding of their chronic conditions and medical requirements, thereby reducing the lack of adherence that often results in emergency room or hospital visits.

Patients enrolled in the program were followed for 18 to 24 months. On average, the pharmacists identified 11 interventions per individual. "There are gaps in care that are quite evident," says Joyce. "The pharmacists were able to take the time and establish a relationship with the

patient. For these patients who had uncontrolled chronic conditions and were at risk of serious complications, this one-on-one support and education proved to be incredibly effective."

The researchers found that, not only did health outcomes improve over the course of the intensive follow-up, but the majority of participants also were able to maintain their improved health status after the program ended. At six months, the program was instrumental in reducing rates of hospitalizations and emergency department visits. Furthermore, ratings of the participating clinics increased substantially over the course of the pilot, and physicians and patients alike reported positive feedback.

Although the program showed no substantial cost savings in the short term, Joyce and his team are applying its data to the **Future Elderly Model** to predict the long-term cost benefits that will accrue from this population's improved health outcomes.

HIV/AIDS Funding Linked to Increased Employment in Sub-Saharan Africa



THE PRESIDENT'S EMERGENCY PLAN FOR AIDS RELIEF (PEPFAR) was established in 2003 to provide and expand HIV/AIDS treatment, care, and prevention in countries devastated by the epidemic. Between 2003 and 2013, the U.S. allocated \$54 billion for the program, mostly in sub-Saharan Africa, and an estimated 6.7 million people infected with HIV gained access to antiretroviral therapy.

The program's significant health benefits are well-documented, but did its expansion have any economic impact? To find out, **Neeraj Sood** and his colleagues analyzed employment trends in 10 countries that received substantial PEPFAR funding and 11 countries that received little or no money from the program.

Among the countries receiving PEPFAR funding, the researchers found a 13 percent differential increase in employment among males compared to the countries garnering no funding. Furthermore, they found that an increase of \$100 in funding per capita from PEPFAR was associated with a 9.1 percentage point increase in employment among males.

"This rise in employment generates economic benefits equal to half of PEPFAR's costs," the researchers wrote. "These findings suggest that PEPFAR's economic impact should be taken into account when making aid allocation decisions."

Does Cancer Care Spending Affect Mortality Rates?

THE ASSOCIATION BETWEEN HEALTH CARE SPENDING and cancer care outcomes is unclear and challenging to untangle. The United States generally spends more on health care than other countries: Is it justified if you consider health gains? In other words, is the health system delivering good value for the money spent? This is particularly salient in the realm of cancer care, where there has been increased interest in the value and cost of newer therapies.

Building on a study he conducted in 2012 that found life expectancy after cancer diagnosis rose more quickly for patients in the U.S. than for those in Europe, **Dana Goldman** and his colleagues analyzed changes in cancer care spending using two measures of cancer mortality across 16 countries over the timeframe 1995 to 2007. They found that, when compared to medium- and low-spending countries, high-spending countries had consistently lower rates of cancer mortality. When analyzing amenable mortality, the difference between the countries with the lowest and highest spending increase was nine percentage points. Furthermore, "high-spending countries saw cancer mortality fall at faster rates than the underlying mortality-spending trend would lead us to expect in that period," wrote the researchers in the paper, which was published in *Health Affairs*.

The researchers caution that these results should be considered exploratory and not directly causal, but they may have implications for the general conversation about health care spending and how to appropriately value and pay for cancer care.





EVENTS





MAJOR POLICY FORUMS AND CONFERENCES

ABOVE: Schaeffer Center Associate Professor Seth Seabury presents his research at Fixing America's Mental Healthcare System. The event was in collaboration with *The Hill* and included Senator Chris Murphy (D-Conn.) and Representative Tim Murphy (R-Pa.).

Fixing America's Mental Healthcare System

Newseum

Washington, D.C.

February 26, 2015

More than 90 attendees, including experts from the American Foundation for Suicide Prevention, the American Psychiatric Association, the Centers for Medicare & Medicaid Services, the U.S. House of Representatives, U.S. Senate, and the Pharmaceutical Research and Manufacturers of America attended Fixing America's Mental Healthcare System.

Seth Seabury, associate professor at the Schaeffer Center and the Keck School of Medicine of USC, presented his research on the consequences of limiting reimbursements for major depressive disorder antidepressant treatments. According to his study, formulary restrictions that aim to cut Medicaid costs actually lead to more hospitalizations, worse outcomes, and no evidence of net savings to Medicaid.

Sen. Chris Murphy (D-Conn.) and Rep. Tim Murphy (R-Pa.) discussed their relevant Senate and House bills. The event was in collaboration with *The Hill*.

Other participants included:

Allen Doederlein, President, Depression & Bipolar Support Alliance

Azfar Malik, MD, MBA, CEO and Chief Medical Officer, CenterPointe Hospital (St. Louis)

Ron Manderscheid, PhD, Executive Director, National Association of County Behavioral Health & Developmental Disability Directors

Matt Salo, Executive Director, National Association of Medicaid Directors

Strengthening Medicare for 2030

The Brookings Institution

Washington, D.C.

June 5, 2015

The Schaeffer Center partnered with the Center for Health Policy at the Brookings Institution to hold a half-day policy forum on the future of Medicare. Discussions at the event looked ahead to 2030—when the youngest baby boomers will become eligible for coverage—and the changing Medicare needs and environment that will likely transpire.

The forum included a keynote presentation by **Leonard D. Schaeffer** as well as panel presentations by Schaeffer Center Director **Dana Goldman** and Public Policy Director **Paul Ginsburg**.

Other participants included:

Alice Rivlin, Director of Health Policy and Leonard D. Schaeffer Chair in Health Policy, Brookings Institution

Gary Burtless, Senior Fellow, Brookings Institution

Henry Aaron, Senior Fellow, Brookings Institution

The Future of Specialty Drugs: A Policy Discussion on Treatments & Affordability

Newseum

Washington, D.C.

October 1, 2015

The Schaeffer Center partnered with *The Hill* for a policy forum on how to make promising new treatments more accessible and affordable for patients who need them most, while also improving the quality of care they receive.

Schaeffer Center Director **Dana Goldman** moderated a panel that included Steven Pearson, founder and president of the Institute for Clinical and Economic Review as well as Katherine Wilemon, founder and president of the FH Foundation, and Josh Ofman, senior vice president, Global Value and Access, at Amgen. The event also featured a conversation between Schaeffer Center Director of Public Policy **Paul Ginsburg** and *The Hill* Editor-in-Chief Bob Cusack. The Schaeffer Center's **Darius Lakdawalla**, Quintiles Chair in Pharmaceutical Development and Regulatory Innovation at the USC School of Pharmacy, moderated a panel that included Amy Bassano, director, Patient Care Models Group, Center for Medicare and Medicaid Innovation; Michael Kolodziej, MD, national medical director, Oncology Solutions Office, Aetna; and Blase Polite, MD, MPP, associate professor of Medicine, University of Chicago, and past chair, Government Relations Committee, American Society of Clinical Oncology.

Wall Street Comes to Washington

Washington, D.C.

November 17, 2015

The 20th Annual Wall Street Comes to Washington conference again brought together Wall Street analysts and Washington policy expert **Paul Ginsburg**, director of Public Policy at the Schaeffer Center, to explore what the latest market developments mean for national health policy and how the political climate will affect the outlook for hospitals, insurers, and other health care companies.

Panelists discussed the broad trends shaping the health care system, including an assessment of ongoing health reform implementation; open enrollment in the health insurance marketplaces; the growing Medicaid managed-care market; regulation of insurance markets; insurance-market consolidation; provider-payment reform and integrating care delivery; underlying health care spending and insurance premium trends; hospital pricing and consolidation; hospital-physician relations; the outlook for Medicare; and other issues.

Quintiles Seminar Series

January–December 2015

The biweekly Quintiles Seminar Series features prominent academics, researchers, policymakers, and industry leaders discussing timely themes in health policy and economics. The seminars provide topical and relevant presentations that prioritize intimate discussions with the audience.

Among the 2015 speakers were Sean Nicholson, PhD, of Cornell University; Mark Cullen, director of the Stanford Center for Population Health Sciences; policymaker Mitchell Katz, MD, director of the Los Angeles County Department of Health Services; and Mary Daly, PhD, associate director of economic research at the Federal Reserve Bank of San Francisco.

Topics ranged from diabetes and diet to protecting people with disabilities. Bringing together a mix of faculty, students, and industry professionals from the greater Los Angeles area, the Quintiles Seminar Series continues to deliver integral discussions relevant to today's health care climate.

Opposite top: Schaeffer Center Director Dana Goldman presents research on the challenges Medicare will face based on changes in the beneficiary demographic as part of the conference Strengthening Medicare for 2030.

Opposite bottom: Schaeffer Center Associate Professor Darius Lakdawalla moderates a panel on payment reform models as part of the policy forum, The Future of Specialty Drugs.





EDUCATION PROGRAMS



ABOVE: The Master of Science program in Healthcare Decision Analysis (HCDA) is the newest degree program housed at the Schaeffer Center.

Academic Programs

At the Schaeffer Center, we develop and educate leaders in higher education, research, government, and health care through interdisciplinary coursework, mentorship, and active engagement in research. Our faculty direct master's and PhD programs through the USC School of Pharmacy, the Price School of Public Policy and the department of economics at USC Dornsife College of Letters, Arts, and Sciences.

The Center also offers pre- and postdoctoral fellowship programs, internships, and research assistantships.

MASTER'S PROGRAMS

Pharmaceutical Economics and Policy

The Master of Science in Pharmaceutical Economics and Policy is led by Schaeffer Center Director of Graduate Programs **Jeff McCombs**.

This program is offered by the USC School of Pharmacy with the Department of Economics in the USC Dornsife College of Letters, Arts, and Sciences. Students are trained to use pharmacoeconomics and assessment techniques in practical decision-making environments such as managed-care pharmacies, third-party payers, and government agencies.

Healthcare Decision Analysis

The Master of Science in Healthcare Decision Analysis (HCDA) is an intensive, interdisciplinary offering designed to attract and train graduates from across the globe who seek to improve their technical and analytical skills related to product value, access, and reimbursement. Offered in partnership with the USC School of Pharmacy and housed at the Schaeffer Center, where **Grant D. Lawless**, serves as program director and associate professor.

Health Administration

The USC Price School of Public Policy's Master of Health Administration program, directed by Schaeffer Center faculty member **Mike Nichol**, has been training leaders in health management and policy for more than 35 years. The program features a 1,000-hour administrative residency and accreditation by the Commission on Accreditation of Healthcare Management Education.

PHD IN HEALTH ECONOMICS

The Schaeffer Center's PhD program in Health Economics integrates curricula from the Department of Economics in the USC Dornsife College of Letters, Arts and Sciences; Preventive Medicine in the Keck School of Medicine of USC; and Pharmaceutical Economics and Policy in the USC School of Pharmacy. Students receive training in microeconomics, econometrics, cost-effectiveness analysis, health economics, public finance, epidemiology, and health status measurement. The program offers two distinct tracks: Microeconomics and Pharmaceutical Economics and Policy.

Fellowship Programs

PREDOCTORAL FELLOWSHIP IN HEALTH ECONOMICS

Schaeffer Fellows in Health Economics, Graduate Certificate Program in Health Economics

In partnership with the USC Dornsife College of Letters, Arts and Sciences, the Schaeffer Center now offers a two-year fellowship for predoctoral students in Economics as part of the new graduate certificate program in Health Economics. Fellows conduct research at the Schaeffer Center under the guidance of a faculty mentor. The fellowship covers the third and fourth years of study.

To receive the graduate certificate, students must complete all requirements for the PhD in Economics, including Health Economics and another advanced field.

2015 Fellows:

Hongming Wang

Wang's research focuses on the labor market consequences of health care reform, its mechanism and welfare, as well as potential externality to other forms of social safety-net programs.

Eunhae Shin

Shin previously worked as a research assistant in Health Services and Systems Research at the Duke–NUS Graduate Medical School, where she participated in various research projects related to health economics and policy.

Kinpritma Sangha, MPH

MPH in Health Policy, George Washington University
BS in Cellular and Molecular Biology and Asian-American Studies, University of California, Davis

Sangha previously served as an associate program officer in the Board on Population Health and Public Health Practice at the Institute of Medicine. Earlier, she worked at the National Women's Law Center and the Association of State and Territorial Health Officials.



The Center's education programs are managed by Julie Zissimopoulos, Schaeffer Center associate director, and Briana White, program manager.

POSTDOCTORAL FELLOWS

Bo Zhou, PhD

PhD in Economics, University of Southern California
MSc in Physics, McMaster University

Zhou's research focuses on health economics and econometrics.

"The Schaeffer Center Postdoc Program provided me great opportunities and mentorship to pursue my research interest in health economics and build collaboration with scholars from worldwide."

Bo Zhou, Postdoctoral Research Scholar

Douglas Barthold, PhD

PhD in Economics, McGill University
BBA in Management, Economics, and Mathematics, University of Massachusetts, Amherst

Barthold's research focuses on health insurance design and on the role of health policy in influencing health care utilization, health outcomes, and inequality.

Gwyn Pauley, PhD

PhD in Economics, Johns Hopkins University
BS in Mathematics, University of South Carolina

Pauley's research focuses on the intersection of health and labor economics.

"I chose to do a postdoc at the Schaeffer Center over a competing tenure-track offer because of the chance to work with respected, successful faculty on a variety of important health policy issues. I think that I will learn a lot during my time at the Schaeffer Center and will hone my skills and develop connections that will ensure I am successful."

Gwyn Pauley, PhD, Schaeffer-Amgen Health Policy and Economics Postdoctoral Fellow

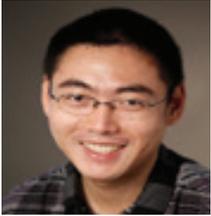
Four postdocs completed fellowships in 2015:

Jeremy Barofsky, PhD, accepted a position at Brookings Institution as a research fellow.

Étienne Gaudette, PhD, is an assistant research professor at the USC School of Pharmacy. He also serves as policy director of the USC Roybal Center for Health Policy Simulation at the Schaeffer Center.

Maria Jose Prados, PhD, accepted a position with the Center for Economic and Social Research at the USC Dana and David Dornsife School of Letters, Arts and Sciences as an associate economist. She is also a 2015–16 USC Resource Center for Minority Aging Health Economics Research (RCMAR) Scholar.

Erin Trish, PhD, is an assistant research professor at the USC Price School of Public Policy.



Hongming Wang



Eunhae Shin



Kinpritma Sangha



Bo Zhou



Douglas Barthold



Gwyn Pauley

“It was a great program for me. I very much appreciated the flexibility to work independently [and with external collaborators] on topics of most interest to me, as well as to get involved in new research with collaborators at Schaeffer. I appreciate the access to the resources and options to get involved in new projects with new collaborators, as well as support for developing proposals.”

Erin Trish, Assistant Research Professor,
USC Price School of Public Policy

2015–2016 USC Resource Center for Minority Aging Health Economics Research (RCMAR) Scholars

The USC Resource Center for Minority Aging Health Economics Research (RCMAR) is currently in its fourth year. The mission of USC RCMAR is to provide infrastructure and resources to increase the number, diversity, and academic success of researchers focusing on the health and economic wellbeing of minority elderly populations. USC RCMAR Scholars have been published in peer-review journals and presented at global conferences.

2015-2016 RCMAR Scholars:

Tyson H. Brown, PhD

Assistant Professor of Sociology, Vanderbilt University

Project Title: Understanding Racial/Ethnic Inequalities in Wealth Trajectories in Middle and Late Life: Patterns and Explanations

Uchechi A. Mitchell PhD

Postdoctoral Fellow, USC/UCLA Center for Biodemography and Population Health

Project Title: Economic Stress and Disease Risk: A Pathway to Health Inequalities Among Older Adults

Maria Jose Prados, PhD

Associate Researcher, USC Center for Economic and Social Research

Project Title: How much can education and health interventions lower old-age health disparities?

Summer Internship Program

The Schaeffer Center Summer Internship Program’s design gives students hands-on experience in health policy research and data analysis, as well as an introduction to the broader field of health economics. It emphasizes one-on-one learning and research supported by a faculty mentor. Mentors foster data and research skill development while providing guidance as the project progresses. Students meet weekly with Julie Zissimopoulos, program director and Schaeffer Center associate director, to discuss their progress and address any concerns. They also are invited to presentations that showcase various research initiatives and programs at the center.

“The program encourages all levels of students—from high school to doctoral—to delve into a research project with one-on-one faculty support and walk away with a better understanding of what health policy and economics is all about.”

Julie Zissimopoulos, Schaeffer Center Associate Director



Schaeffer Center fellows discuss research.

Data Report

The Schaeffer Center Data Core is a state-of-the-art data resource and computing environment that meets the most rigorous research standards. The Center's data library (see figure below) covers a range of data sources including survey data, public and private claims, and electronic health record network data feeds.

Data security is of paramount importance to the Center. The Data Core manages a mix of systems, from an air gapped workstation to state-of-the-art HIPAA-compliant systems that include 24-hour 7-day a week monitoring for security events to ensure private health data resources are protected. The Center's researchers may also access USC's high performance computing for compute-intensive analyses, and the university's Census Research Data Center.

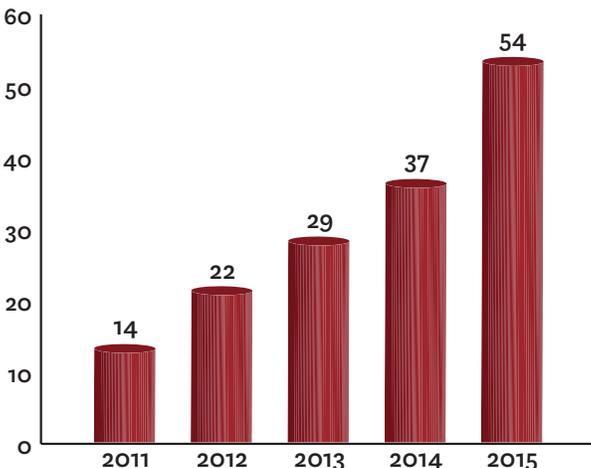
The Center's computer staff includes a full-time system administrator, five full-time research programmers, a data

100,000,000+

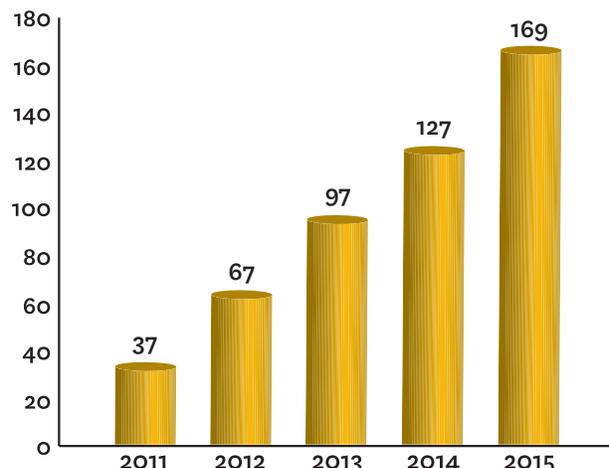
Lives are covered in the Schaeffer Center claims data (both private and public)

resources administrator, and a director who provide expertise, training, and support for specific research projects as well as to the students, postdoctoral fellows, faculty and collaborators who use the diverse data resources that are available. Data Core programmers also expand, improve, and maintain sophisticated policy tools like the Future Elderly Model.

Number of Databases



Number of Users of the Schaeffer Center Data Core



Financial Report

The Schaeffer Center is supported by funding from a wide variety of public and private institutions and donors.

Regardless of the funding source, Schaeffer Center research adheres to the following standards:

1. The work should reflect our mission and values. The relevant values here are rigorous, objective, and independent.
2. The work should be well-reasoned, with a sound evidence basis. It should synthesize all available evidence, not just studies favorable to a particular policy position.
3. The work should avoid strident language which denigrates our academic roots.

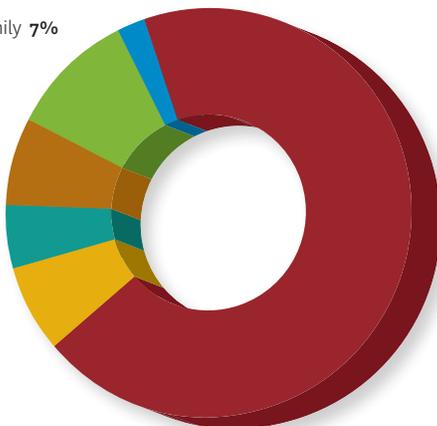
The Schaeffer Center encourages its members to engage with the policy community, and as such, supports the dissemination of our independent findings through academic publications, opinion pieces, briefings, meetings, editorials, presentations, and blog posts.

When speaking or writing as a member of the Schaeffer Center, individuals are asked to maintain the standards set out above. Furthermore, when accepting funding that is not a gift, Schaeffer Center researchers preserve the right to publish by contract with the funder.

Gifts, by definition, do not include restrictions on research or publication.

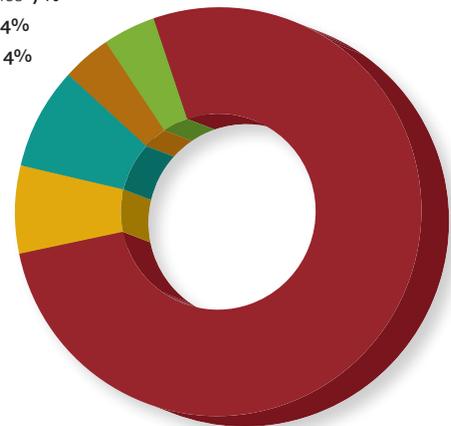
Schaeffer Center Funding Sources FY 2015

- US DHHS, NIH, & Related Agencies **69%**
- Industry **10%**
- USC **7%**
- Individual or Family **7%**
- Foundation **5%**
- Other **2%**



Schaeffer Center Spending by Area FY 2015

- Research **77%**
- Education & Training **8%**
- Health Informatics **7%**
- Administration **4%**
- External Affairs **4%**



PUBLICATIONS

Over 110 Publications.

Published in over 50 journals included **JAMA, AJMC, Health Affairs,** and **BMJ.**

Studies cited in multiple media including **New York Times, LA Times, NPR, US News and World Report, Wall Street Journal,** and **Washington Post.**

IMPROVE THE PERFORMANCE OF HEALTH CARE MARKETS

Chen, A., & Goldman, D. (2015). Health Care Spending: Historical Trends and New Directions (No. w21501). *National Bureau of Economic Research.*

Chou, J. W., **Lakdawalla, D. N.,** & Vanderpuye-Orgle, J. (2015, January). Public-Private Partnership as a Path to Affordable Healthcare in Emerging Markets. In *Forum for Health Economics and Policy* (Vol. 18, No. 1, pp. 65-74).

Lakdawalla, D., & Yin, W. (2015). Insurers' negotiating leverage and the external effects of Medicare part D. *Review of Economics and Statistics*, 97(2), 314-331.

Meeker D, Thompson C, Strlewicz G, **Knight TK,** & **Doctor JN.** (2015). Use of Insurance Against a Small Loss as an Incentive Strategy. *Decision Analysis.*

Damrongplasit, K., & **Melnick, G.** (2015). Funding, Coverage, and Access Under Thailand's Universal Health Insurance Program: An Update After Ten Years. *Applied Health Economics and Health Policy*, 13(2), 157-166.

Romley, J. A., Goldman, D. P., & Sood, N. (2015). US Hospitals Experienced Substantial Productivity Growth During 2002-11. *Health Affairs*, 10-1377.

Romley J, Goldman D, Sood N. (2015) "Hospital Productivity: The Authors Reply." *Health Affairs*, 34(6):1069.

Romley, J. A., Axen, S., Lakdawalla, D. N., Chernew, M. E., Bhattacharya, J., & **Goldman, D. P.** (2015). The Relationship between Commercial Health Care Prices and Medicare Spending and Utilization. *Health services research*, 50(3), 883-896.

Seabury, S. A., Lakdawalla, D. N., Dougherty, J. S., Sullivan, J., & **Goldman, D. P.** (2014). Medication adherence and measures of health plan quality. *The American Journal of Managed Care*, 21(6), e379-89.14.

Ly, D. P., **Seabury, S. A.,** Jena, A. B. (2015). Divorce among physicians and other healthcare professionals in the United States: analysis of census survey data. *bmj*, 350, h706.

Jena, A. B., Schoemaker, L., Bhattacharya, J., **Seabury, S. A.** (2015). Physician spending and subsequent risk of malpractice claims: observational study. *British Medical Journal: h5516.*

Helland, E., **Seabury, S. A.** (2015). Tort reform and physician labor supply: A review of the evidence. *International Review of Law and Economics*, 42, 192-202.

Haviland, A. M., Eisenberg, M. D., Mehrotra, A., Huckfeldt, P. J., & **Sood, N.** (2015). Do "Consumer-Directed" Health Plans Bend the Cost Curve Over Time? (No. w21031). National Bureau of Economic Research.

Trish, E. E., Herring, B. J. (2015). How do health insurer market concentration and bargaining power with hospitals affect health insurance premiums?. *Journal of Health Economics*, 42, 104-114.

Herring, B., **Trish, E.** (2015). Explaining the Growth in US Health Care Spending Using State-Level Variation in Income, Insurance, and Provider Market Dynamics. *INQUIRY: The Journal of Health Care Organization, Provision, and Financing*, 52, 0046958015618971.

Herring, B., **Trish, E.,** (2015). The Distributional Effects of the Affordable Care Act's Cadillac Tax by Worker Income. *AMA Journal of Ethics*. 17(7): 672-679.

INCREASE VALUE IN HEALTH CARE DELIVERY

Eisenberg, S. A., Kurita, K., Taylor-Ford, M., **Agus, D. B.,** Gross, M. E., & Meyerowitz, B. E. (2015). Intolerance of uncertainty, cognitive complaints, and cancer-related distress in prostate cancer survivors. *Psycho-Oncology*, 24(2), 228-235.

Tannenbaum, D., **Doctor, J. N.,** Persell, S. D., Friedberg, M. W., **Meeker, D.,** Friesema, E. M., ... & Fox, C. R. (2015). Nudging physician prescription decisions by partitioning the order set: results of a vignette-based study. *Journal of General Internal Medicine*, 30(3), 298-304.

Huesch, M & Doctor JN. (2015). Factors Associated With Increased Cesarean Risk Among African American Women: Evidence From California, 2010. *American Journal of Public Health*, 105(5), 956-962.

Amarasingham, R., Velasco, F., Xie, B., Clark, C., Ma, Y., Zhang, S., Bhat, D., Lucena, B., **Huesch, M.,** & Halm, E. A. (2015). Electronic medical record-based multicondition models to predict the risk of 30 day readmission or death among adult medicine patients: validation and comparison to existing models. *BMC Medical Informatics and Decision Making*, 15(1), 39.

Huesch, M., Doctor, J., Galstyan, A. (2015). Using Online Social Media and Social Networks as a Public Health Intervention. *CESR-Schaeffer Working Paper.* 2015-011.

Huesch, M., Ong, M., & Fonarow, G. C. (2015). Medicare Hospital Outcome Measures and Unrelated Socioeconomic and Clinical Factors. *CESR-Schaeffer Working Paper,* (2015-010).

Huesch, M. D., Ong, M. K., & Richman, B. D. (2015). Could Data Broker Information Threaten Physician Prescribing and Professional Behavior?

Huesch, M., & Szczerba, R. (2015). Designing a Serious Game to Map the 'Process Genome' of Hospitals. *CESR-Schaeffer Working Paper,* (2015-008).

Huesch, M. D., & Douglas, P. S. Impact of cardiac cath lab organization on process and outcome quality: a case study.

Huesch, M., & Brady, R. L. (2015). Should Past Recipients of a Kidney Be Allowed to Have Another? *Surveys of Preferences of Individuals with and without End Stage Renal Disease* (June 2015). *CESR-Schaeffer Working Paper,* (2015-006).

Jena, A. B., Prasad, V., **Goldman, D. P., & Romley, J.** (2015). Mortality and treatment patterns among patients hospitalized with acute cardiovascular conditions during dates of national cardiology meetings. *JAMA Internal Medicine*, 175(2), 237-244.

Jena, A. B., **Goldman, D. P., & Seabury, S. A.** (2015). Incidence of Sexually Transmitted Infections After Human Papillomavirus Vaccination Among Adolescent Females. *JAMA Internal Medicine*, 175(4), 617-623.

- Chandra, A., Snider, J. T., Wu, Y., Jena, A., & **Goldman, D. P.** (2015). Robot-Assisted Surgery For Kidney Cancer Increased Access to a Procedure that Can Reduce Mortality and Renal Failure. *Health Affairs*, 34(2), 220-228.
- Sawicki, G., **Goldman, D.P.**, Chang, W., Casey, A., Greenberg, J., Romley, J. (2015). Patient Preference for Treatment Administration in Cystic Fibrosis. *American Journal of Pharmacy Benefits*. 7(4):174-181.
- Shrestha, A., Eldar-Lissai, A., Wu, Y., Batt, K., Krishnan, S., & **Lakdawalla, D.** (2015). A New Method for Counting Hemophilia-Related Bleeding Events in Claims Data. *Value in Health*, 18(3), A2.
- Lakdawalla, D.**, Shafrin, J., Lucarelli, C., Nicholson, S., Khan, Z. M., & Philipson, T. J. (2015). Quality-adjusted cost of care: a meaningful way to measure growth in innovation cost versus the value of health gains. *Health Affairs*, 34(4), 555-561.
- Zamora, I., Williams, M. E., Higareda, M., Wheeler, B. Y., & **Levitt, P.** (2015). Brief Report: Recruitment and Retention of Minority Children for Autism Research. *Journal of Autism and Developmental Disorders*, 1-6.
- Chiu, H., & **Meeker, D.** (2015, July). Reverse Engineering Measures of Clinical Care Quality: Sequential Pattern Mining. *Data Integration in the Life Sciences* (pp. 208-222). Springer International Publishing.
- Shetty, K. D., **Meeker, D.**, Schneider, E. C., Hussey, P. S., & Damberg, C. L. (2015, March). Evaluating the feasibility and utility of translating Choosing Wisely recommendations into e-Measures. *Healthcare* (Vol. 3, No. 1, pp. 24-37). Elsevier.
- Singer, A. E., **Meeker, D.**, Teno, J. M., Lynn, J., Lunney, J. R., & Lorenz, K. A. (2015). Symptom trends in the last year of life from 1998 to 2010: a cohort study. *Annals of Internal Medicine*, 162(3), 175-183.
- Zhou, Z. Y., Koerper, M. A., Johnson, K. A., Riske, B., Baker, J. R., Ullman, M., ... & **Nichol, M. B.** (2015). Burden of illness: direct and indirect costs among persons with hemophilia A in the United States. *Journal of Medical Economics*, (0), 1-9.
- Romley, J. A.** (2015). Should doctors own hospitals?. *BMJ*. 351: h4615
- Sood, N.**, Wagner, Z., & Wu, Y. (2015). The Impact of Insurance on HIV Testing. *American Journal of Health Economics*.
- Basu, S., Bendavid, E., & **Sood, N.** (2015). Health and Economic Implications of National Treatment Coverage for Cardiovascular Disease in India Cost-Effectiveness Analysis. *Circulation: Cardiovascular Quality and Outcomes*, 8(6), 541-551.
- Sood, N.**, Wagner, Z. (2016). Impact of health insurance for tertiary care on postoperative outcomes and seeking care for symptoms: quasi-experimental evidence from Karnataka, India. *BMJ Open*.
- Villacorta, R., & **Sood, N.** (2015). Determinants of healthcare provider recommendations for influenza vaccinations. *Preventive Medicine Reports*, 2, 355-370.
- Wagner, Z., Shah, M., & **Sood, N.** (2015). Barriers to use of oral rehydration salts for child diarrhea in the private sector: evidence from India. *Journal of Tropical Pediatrics*, 61(1), 37-43.
- Woo, K., Goldman, D. P., & Romley, J. A.** (2015). Early failure of dialysis access among the elderly in the era of fistula first. *Clinical Journal of the American Society of Nephrology*, 10(10), 1791-1798.
- Ell, K., Katon, W., Lee, P. J., Guterman, J., & **Wu, S.** (2015). Demographic, Clinical, and Psychosocial Factors Identify a High-Risk Group for Depression Screening among Predominantly Hispanic Patients with Type 2 Diabetes in Safety Net Care. *General Hospital Psychiatry*.
- Ell, K., Oh, H., & **Wu, S.** (2015). Integrating Biopsychosocial Intervention Research in a Changing Health Care Landscape. *Research on Social Work Practice*, 1049731515579074.
- Vidyanti, I., Wu, B., & **Wu, S.** (2015). Low-income minority patient engagement with automated telephonic depression assessment and impact on health outcomes. *Quality of Life Research*, 24(5), 1119-1129.

IMPROVE HEALTH OUTCOMES FOR AN AGING SOCIETY

Aguila, E., Kapteyn, A., & Smith, J. P. (2015). Effects of income supplementation on health of the poor elderly: The case of Mexico. *Proceedings of the National Academy of Sciences*, 112(1), 70-75.

Aguila, E. (2015, November). Consumption Smoothing and the Effects of Social Programs with Different Frequencies of Payment: Quasi-Experimental Evidence from Social Security Programs for Older Populations. In *2015 Fall Conference: The Golden Age of Evidence-Based Policy*. Appam.

Aguila, E. (2015). Alleviating Poverty for Older Adults: Findings from a Noncontributory Pension Program in Mexico. *National Academies*.

Aguila, E., & Vega, A. (2015). Social Security Contributions and Return Migration among Older Male Mexican Immigrants. *Deep Blue*, 2015-09.

Aguila, E., Fonseca, R., & Vega, A. (2015). Self-Employment, Health Insurance, and Return Migration of Middle-Aged and Elderly Mexican Males. In *Challenges of Latino Aging in the Americas* (pp. 103-119). Springer International Publishing.

Aguila, E., Cervera, M. D., Martinez-Salgado, H., & Weidmer, B. A. (2015). Developing and Testing Informed-Consent Methods in a Study of the Elderly in Mexico.

Aguila, E., Mejía, N., Pérez, F., Rivera, A., & Ramírez, E. (2015). Pobreza y Vulnerabilidad en México: El caso de los Jóvenes que no Estudian ni Trabajan. *Estudios económicos*, 30(1), 3-49.

Blanco, L. R., **Aguila, E.**, Gongora, A., Weidmer, B., & Duru, K. (2015). Retirement Planning Among Middle-Aged and Older Hispanics. *CESR-Schaeffer Working Paper*, (2015-003).

Enguidanos, S., & **Ailshire, J.** (2015). Exploring Longitudinal Rates and Timing of Advance Directive Completion: Is There a Goldilocks Phenomenon? (S730). *Journal of Pain and Symptom Management*, 2(49), 423.

Ailshire, J. A., Beltrán-Sánchez, H., & **Crimmins, E. M.** (2015). Becoming Centenarians: Disease and Functioning Trajectories of Older US Adults as They Survive to 100. *The Journals of Gerontology Series A: Biological Sciences and Medical Sciences*, 70(2), 193-201.

Ailshire, J. A., & Clarke, P. (2015). Fine particulate matter air pollution and cognitive function among us older adults. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 70(2), 322-328.

Crimmins, E. M. (2015). Lifespan and Healthspan: Past, Present, and Promise. *The Gerontologist*, 55(6), 901-911.

Crimmins, E. M. (2015). Physiological differences across populations reflecting early life and later life nutritional status and later life risk for chronic disease. *Journal of Population Ageing*, 8(1-2), 51-69.

PUBLICATIONS

- Beltrán-Sánchez, H., Soneji, S., & **Crimmins, E. M.** (2015). Past, Present, and Future of Healthy Life Expectancy. *Cold Spring Harbor Perspectives in Medicine*, 5(11), a025957.
- Levine, M. E., & **Crimmins, E. M.** (2015). A Genetic Network Associated With Stress Resistance, Longevity, and Cancer in Humans. *The Journals of Gerontology Series A: Biological Sciences and Medical Sciences*, glv141.
- Arpawong, T. E., Lee, J., Phillips, D. F., **Crimmins, E. M.**, Levine, M. E., & Prescott, C. A. (2015). Effects of Recent Stress and Variation in the Serotonin Transporter Polymorphism (5-HTTLPR) on Depressive Symptoms: A Repeated-Measures Study of Adults Age 50 and Older. *Behavior genetics*, 1-17.
- Donoho, C. J., Seeman, T. E., Sloan, R. P., & **Crimmins, E. M.** (2015). Marital status, marital quality, and heart rate variability in the MIDUS cohort. *Journal of Family Psychology*, 29(2), 290.
- Levine, M. E., Cole, S. W., Weir, D. R., & **Crimmins, E. M.** (2015). Childhood and later life stressors and increased inflammatory gene expression at older ages. *Social Science & Medicine*, 130, 16-22.
- Hu, P., Herningtyas, E. H., Kale, V., **Crimmins, E. M.**, Risbud, A. R., McCreath, H., ... & Seeman, T. E. (2015). External Quality Control for Dried Blood Spot-Based C-Reactive Protein Assay: Experience from the Indonesia Family Life Survey and the Longitudinal Aging Study in India. *Biodemography and Social Biology*, 61(1), 111-120.
- Solé-Auró, A., Beltrán-Sánchez, H., & **Crimmins, E. M.** (2015). Are Differences in Disability-Free Life Expectancy by Gender, Race, and Education Widening at Older Ages?. *Population Research and Policy Review*, 34(1), 1-18.
- Saito, Y., Davarian, S., Takahashi, A., Schneider, E., & **Crimmins, E. M.** (2015). Diagnosis and control of hypertension in the elderly populations of Japan and the United States. *International Journal of Population Studies*, 1.
- Tiedt, A. D., Saito, Y., & **Crimmins, E. M.** (2015). Depressive Symptoms, Transitions to Widowhood, and Informal Support From Adult Children Among Older Women and Men in Japan. *Research on Aging*, 0164027515595442.
- Gaudette, É., Goldman, D. P.**, Messali, A., Sood, N., (2015). Do Statins Reduce the Health and Health Care Costs of Obesity?. *PharmacoEconomics*, 33(7), p. 723-734.
- Gaudette, É., Tysinger, B.**, Cassil, A., & **Goldman, D. P.** (2015, December). Health and Health Care of Medicare Beneficiaries in 2030. *Forum for Health Economics and Policy* (Vol. 18, No. 2, pp. 75-96).
- Ginsburg, P. B.**, & Wilensky, G. R. (2015, December). Revamping Provider Payment in Medicare. In *Forum for Health Economics and Policy* (Vol. 18, No. 2, pp. 137-149).
- Ginsburg, P. B.**, & Rivlin, A. M. (2015). Challenges for Medicare at 50. *New England Journal of Medicine*, 373(21), 1993-1995.
- Olshansky, S. J., **Goldman, D. P.**, & Rowe, J. W. (2015). Resetting Social Security. *Daedalus*, 144(2), 68-79.
- Nikolich-Žugich, J., **Goldman, D. P.**, Cohen, P. R., Cortese, D., Fontana, L., Kennedy, B. K., ... & Richardson, A. (2015). Preparing for an aging world: Engaging biogerontologists, geriatricians, and the society. *The Journals of Gerontology Series A: Biological Sciences and Medical Sciences*, glv164.
- Romley, J. A., Gong, C.**, Jena, A. B., **Goldman, D. P.**, Williams, B., & Peters, A. (2015). Association between use of warfarin with common sulfonylureas and serious hypoglycemic events: retrospective cohort analysis. *BMJ*, 351, h6223.
- Siris, E. S., Yu, J., Bognar, K., DeKoven, M., Shrestha, A., **Romley, J. A.**, & Modi, A. (2015). Undertreatment of osteoporosis and the role of gastrointestinal events among elderly osteoporotic women with Medicare Part D drug coverage. *Clinical Interventions in Aging*, 10, 1813.
- Zissimopoulos J., Joyce G., Scarpati L., Goldman D.** (2015). Did Medicare Part D Reduce Disparities? *American Journal of Managed Care*, 21(2):119-128.
- Zissimopoulos, J. M., Goldman, D. P.**, Olshansky, S. J., Rother, J., & Rowe, J. W. (2015). Individual & Social Strategies to Mitigate the Risks & Expand Opportunities of an Aging America. *Daedalus*, 144(2), 93-102.
- Zissimopoulos, J., Crimmins, E., & St Clair, P.** (2015, January). The Value of Delaying Alzheimer's Disease Onset. In *Forum for Health Economics and Policy* (Vol. 18, No. 1, pp. 25-39).
- Furstenberg, F. F., Hartnett, C. S., Kohli, M., & **Zissimopoulos, J. M.** (2015). The Future of Intergenerational Relations in Aging Societies. *Daedalus*, 144(2), 31-40.
- FOSTER BETTER PHARMACEUTICAL POLICY AND GLOBAL REGULATION**
- Dzau, V. J., Ginsburg, G. S., Van Nuys, K., **Agus, D.**, & **Goldman, D.** (2015). Aligning incentives to fulfil the promise of personalised medicine. *The Lancet*.
- Van Nuys, K., Brookmeyer, R., Chou, J. W., Dreyfus, D., Dieterich, D., & **Goldman, D. P.** (2015). Broad Hepatitis C Treatment Scenarios Return Substantial Health Gains, But Capacity Is A Concern. *Health Affairs*, 34(10), 1666-1674.
- Turakhia, M., Shafrin, J., Bognar, K., Trocio, J., Abdulsattar, Y., Wiederkehr, D., & **Goldman, D.** (2015). Economic Burden of Undiagnosed Nonvalvular Atrial Fibrillation in the United States. *Journal of the American College of Cardiology*, 65(10_S).
- Stevens, W., Philipson, T. J., Khan, Z. M., MacEwan, J. P., Linthicum, M. T., & **Goldman, D. P.** (2015). Cancer mortality reductions were greatest among countries where cancer care spending rose the most, 1995-2007. *Health Affairs*, 34(4), 562-570.
- Jena, A. B., Ho, O., **Goldman, D. P.**, & Karaca-Mandic, P. (2015). The Impact of the US Food and Drug Administration Chlorofluorocarbon Ban on Out-of-pocket Costs and Use of Albuterol Inhalers Among Individuals With Asthma. *JAMA internal medicine*.
- Eber, M. R., **Goldman, D. P., Lakdawalla, D. N.**, Philipson, T. J., Pritchard, D., Huesch, M., ... & Dubois, R. W. (2015). Clinical evidence inputs to comparative effectiveness research could impact the development of novel treatments. *Journal of Comparative Effectiveness Research*.
- Snider, J. T., **Goldman, D. P.**, Rosenblatt, L., Seekins, D., Juday, T., Sanchez, Y., ... & **Romley, J. A.** (2015). The Impact of State AIDS Drug Assistance Policies on Clinical and Economic Outcomes of People With HIV. *Medical Care Research and Review*, 1077558715614479.
- Chen, C. X., & **Hay, J. W.** (2015). Promise of Precision Medicine. *JAMA*, 314(16), 1752-1752.
- Thompson, C. A., & **Hay, J. W.** (2015). Estimating the association between metabolic risk factors and marijuana use in US adults using data from the continuous National Health and Nutrition Examination Survey. *Annals of epidemiology*.

- Grosse, S.D., Chaugule, C.S., **Hay, J.W.** (2015). Estimates of utility weights in hemophilia: implications for cost-utility analysis of clotting factor prophylaxis. *Expert Review of Pharmacoeconomics and Outcomes Research*, 15(2): 267-283.
- Chen, C. X., & **Hay, J. W.** (2015). Cost-effectiveness analysis of alternative screening and treatment strategies for heterozygous familial hypercholesterolemia in the United States. *International journal of cardiology*, 181, 417-424.
- Cheetham, T. C., Niu, F., Chiang, K., Yuan, Y., Kalsekar, A., Hechter, R., Chiang, K., **Hay, J.W.**, & Nyberg, L. (2015). Factors Associated with Failure to Achieve SVR in Hepatitis C Genotype 3 Patients Within an Integrated Care Delivery System. *Journal of Managed Care & Specialty Pharmacy*, 21(8), 641-647.
- Hay, J. W.** (2015). A Special Commemorative Issue Honoring William S. Comanor and 50 Years of Pharmaceutical Economics. *International Journal of the Economics of Business*, 22(2), 165-168.
- Chaugule, S. S., **Hay, J. W.**, & Young, G. (2015). Understanding patient preferences and willingness to pay for hemophilia therapies. *Patient Preference and Adherence*, 9, 1623.
- Alpert, A., **Ladkawalla, D., Sood, N.** (2015). Prescription Drug Advertising and Drug Utilization: The Role of Medicare Part D (No. w21714). *National Bureau of Economic Research*.
- Lakdawalla, D. N.**, Chou, J. W., Linthicum, M. T., MacEwan, J. P., Zhang, J., & **Goldman, D. P.** (2015). Evaluating Expected Costs and Benefits of Granting Access to New Treatments on the Basis of Progression-Free Survival in Non-Small-Cell Lung Cancer. *JAMA Oncology*, 1(2), 196-202.
- Batt, K., Shrestha, A., Eldar-Lissai, A., Wu, Y., Krishnan, S., & **Lakdawalla, D.** (2015, June). Frequency of bleeding events in patients with hemophilia on prophylaxis based on a commercial insurance claims database. In *Journal Of Thrombosis And Haemostasis* Vol. 13, pp. 856-856.
- Thomas, K. L., Jiang, Y., & **McCombs, J. S.** (2015). Clozapine revisited: Impact of clozapine vs olanzapine on health care use by schizophrenia patients on Medicaid. *Annals of Clinical Psychiatry: Official Journal of the American Academy of Clinical Psychiatrists*, 27(1), E1-E10.
- McLaughlin, J. M., **McGinnis, J. J.**, Tan, L., Mercatante, A., & Fortuna, J. (2015). Estimated human and economic burden of four major adult vaccine-preventable diseases in the United States, 2013. *The Journal of Primary Prevention*, 36(4), 259-273.
- Blume, S. W., Yeomans, K., Allen-Ramey, F., Smith, N., Kim, H., Lockey, R. F., & **Nichol, M. B.** (2015). Administration and Burden of Subcutaneous Immunotherapy for Allergic Rhinitis in US and Canadian Clinical Practice. *Journal of Managed Care & Specialty Pharmacy*, 21(11), 982-990.
- Shafrin, J., Bruno, A., MacEwan, J. P., Campinha-Bacote, A., Trocio, J., Tan, W., & **Romley, J. A.** (2015). Antithrombotic Use in Nonvalvular Atrial Fibrillation (NVAf): Alignment between Guidelines and Emerging Evidence with Clinician Prescribing Preferences. *Circulation: Cardiovascular Quality and Outcomes*, 8(Suppl 2), A150-A150.
- Vanderpuye-Orgle, J., Zhao, Y., Lu, J., Shrestha, A., Sexton, A., **Seabury, S.**, & Leibold, M. (2015). Evaluating the economic burden of psoriasis in the United States. *Journal of the American Academy of Dermatology*, 72(6), 961-967.
- Wagner, Z., Barofsky, J., & **Sood, N.** (2015). PEPFAR Funding Associated with an Increase in Employment Among Males in Ten Sub-Saharan African Countries. *Health Affairs*, 34(6), 946-953.
- Blume-Kohout, M.E., Kumar, K.B., **Sood, N.**, (2015). "University R&D Funding Strategies in a Changing Federal Funding Environment." *Science and Public Policy*, 42(3), 355-368.
- Blume-Kohout, M. E., Kumar, K. B., Lau, C., & **Sood, N.** (2014). The effect of federal research funding on formation of university-firm biopharmaceutical alliances. *The Journal of Technology Transfer*, 1-18.
- Ailshire, J.** (2015). The Slumbering Masses: Sleep, Medicine, and Modern American Life. *Contemporary Sociology: A Journal of Reviews*, 44(2), 280-282.
- Cole, S. W., Levine, M. E., Arevalo, J. M., Ma, J., Weir, D. R., & **Crimmins, E. M.** (2015). Loneliness, eudaimonia, and the human conserved transcriptional response to adversity. *Psychoneuroendocrinology*, 62, 11-17.
- Heckman, J. J.**, Humphries, J. E., & Veramendi, G. (2015). Dynamic treatment effects. *Journal of Econometrics*.
- Elango, S., García, J. L., **Heckman, J. J.**, & Hojman, A. (2015). *Early Childhood Education* (No. w21766). National Bureau of Economic Research.
- Conti, G., **Heckman, J. J.**, & Pinto, R. (2015). *The Effects of Two Influential Early Childhood Interventions on Health and Healthy Behaviors* (No. w21454). National Bureau of Economic Research.
- Doyle, O., Harmon, C., **Heckman, J.**, Logue, C., & Moon, S. (2015). Early skill formation and the efficiency of parental investment: a randomized controlled trial of home visiting.
- Eisenhauer, P., **Heckman, J. J.**, & Mosso, S. (2015). Estimation of dynamic discrete choice models by maximum likelihood and the simulated method of moments. *International Economic Review*, 56(2), 331-357.
- Huesch, M.** (2015). Celebrity Influence? An Observational Study of Consumer Responses on Social Media and on an Internet Search Engine to News of Angelina Jolie's Prophylactic Mastectomies. (June 2015). *CESR-Schaeffer Working Paper*, (2015-012).
- Meeker, D.**, Jiang, X., Matheny, M. E., Farcas, C., D'Arcy, M., Pearlman, L., ... & Boxwala, A. (2015). A system to build distributed multivariate models and manage disparate data sharing policies: implementation in the scalable national network for effectiveness research. *Journal of the American Medical Informatics Association*, 22(6), 1187-1195.
- Shenvi, E. C., **Meeker, D.**, & Boxwala, A. A. (2015). Understanding data requirements of retrospective studies. *International journal of medical informatics*, 84(1), 76-84.
- Meeker, D.**, Cerully, J. L., Johnson, M. D., Lyer, N., Kurz, J. R., & Scharf, D. M. (2015). SimCoach Evaluation: A Virtual Human Intervention to Encourage Service-Member Help-Seeking for Posttraumatic Stress Disorder and Depression (No. RR-505-OSD). Rand National Defense Research Institute Santa Monica, CA.

Meet the 2016 Schaeffer Center Advisory Board

Leonard D. Schaeffer, Chair

Leonard D. Schaeffer is the founding Chairman & CEO of WellPoint, Inc. (now Anthem), and was Chairman & CEO of WellPoint's predecessor company, Blue Cross of California. He is currently a senior advisor to TPG Capital and is the Judge Robert Maclay Widney Chair and Professor at USC. In the Federal Government, he served as Administrator of the Health Care Financing Administration (now CMS). He serves on the boards of Quintiles, the RAND Corporation, the Brookings Institution, USC, Walgreens Boots Alliance, Inc., and the Board of Fellows at Harvard Medical School (HMS). He chairs the advisory board for the Schaeffer Center at USC and is a member of the National Academy of Medicine (NAM). He has endowed academic chairs at USC, the Brookings Institution, the University of California (Berkeley), NAM, and HMS.

Drew Altman, Ph.D.

Drew Altman is President and Chief Executive Officer of the Henry J. Kaiser Family Foundation, one of the nation's largest private foundations devoted to health. Dr. Altman is a former Commissioner of the New Jersey Department of Human Services. He was also Director of the Health and Human Services program at the Pew Charitable Trusts and Vice President of the Robert Wood Johnson Foundation. Dr. Altman is a member of the Council on Foreign Relations and the Institute of Medicine. He is an innovator in the world of foundations and a leading expert on national health policy.

Gregg H. Alton, J.D.

Gregg Alton is the Executive Vice President, Corporate and Medical Affairs at Gilead Sciences, which he joined in 1999. From 2000 to 2009 he served as General Counsel. In his current role, Mr. Alton is responsible for legal affairs, government affairs, medical affairs, public affairs and emerging market activities. Prior to joining Gilead, Mr. Alton was an attorney at the law firm of Cooley Godward, LLP, where he specialized in mergers and acquisitions, corporate partnerships and corporate finance transactions for healthcare and information technology companies. Mr. Alton is a member of the boards of the AIDS Institute, BayBio (a San Francisco Bay Area life sciences industry organization), the Boys and Girls Clubs of Oakland and Celladon Corporation. He is also a member of the U.S. Government's Industry Trade Advisory Committee on Intellectual Property Rights, the advisory board of UCSF Global Health Group, and the Dean's Advisory Council at Stanford Law School. Mr. Alton received a bachelor's degree in legal studies from the University of California at Berkeley, and holds a JD from Stanford University.

David Beier, J.D.

David Beier is a Managing Director of Bay City Capital and has been with the firm since 2013. He is a globally recognized leader in health care policy, pricing, intellectual property, government affairs, regulatory affairs, health care economics, and product commercialization. In addition, he spent two decades as part of the senior management teams for Amgen and Genentech. Mr. Beier served in the White House as Chief Domestic Policy Advisor to Vice President Al Gore during the Clinton Administration. He has served as an appointee of President Clinton on his Advisory Committee for Trade Policy and Negotiations, on the Institute of Medicine panel on the Future of Health and Human Services, and as an advisor to the President's Council of Advisors on Science and Technology. Mr. Beier was also formerly a partner in the international law firm Hogan and Hartson and was formerly Counsel to the US House of Representatives Committee on the Judiciary. He currently serves as an appointee of Governor Brown on the California State Government Organization and the Economy Commission, as a Fellow of the Center for Global Enterprise, and teaches as an Adjunct Lecturer at the Haas School of Business at UC Berkeley. Mr. Beier received his JD from Albany Law School at

Union University and his undergraduate degree and Colgate University. He is admitted to practice law in New York and the District of Columbia.

Robert Bradway

Robert A. Bradway is Chairman and Chief Executive Officer at Amgen. He became chairman in January 2013 and chief executive officer in May 2012. Mr. Bradway served as the company's president and chief operating officer from May 2010 to May 2012 and was appointed to the Amgen Board of Directors in October 2011. He joined the company in 2006 as vice president, Operations Strategy, and served as executive vice president and chief financial officer from April 2007 to May 2010. Prior to joining Amgen, he was a managing director at Morgan Stanley in London where he had responsibility for the firm's banking department and corporate finance activities in Europe. Mr. Bradway joined Morgan Stanley in New York as a health care industry investment banker in 1985 and moved to London in 1990, where he served as head of the firm's international health care investment banking activities until assuming broader corporate finance management responsibilities. He holds a bachelor's degree in biology from Amherst College and a master's degree in business administration from Harvard University. He is a member of the board of directors of Norfolk Southern Corporation and serves on its Audit and Governance committees.

Cathryn M. Clary, M.D.

Cathryn M. Clary is Head of US Clinical Development and Medical Affairs at Novartis Pharmaceuticals Corporation. She is responsible for the planning and execution of medical affairs activities, US Clinical Development trials and Regulatory Affairs for Advertising and Promotion. Dr. Clary joined Novartis in 2012 from Ipsen Biopharmaceuticals, Inc., where she was Senior Vice President, North American Medical & Regulatory Affairs. Prior to Ipsen, she was with Pfizer working within US and global Medical Affairs. She is on the Board of the Association of the Accreditation of Human Research Protection Programs; she serves on the Advisory Board for the Leonard D. Schaeffer Center for Health Policy and Economics and is a member of the American Medical Association, the American Academy of Neurology, and a Distinguished Life Fellow of the American Psychiatric Association. She received her medical degree from the University of Missouri-Columbia, and holds an AB from Bryn Mawr College and an MBA from the University of Delaware. She has published in a number of prominent peer reviewed psychiatry journals.

C. Duane Dauner

C. Duane Dauner is President and Chief Executive Officer of the California Hospital Association (CHA), which he was appointed to in 1985. CHA is the statewide leader representing the interests of nearly 400 California hospitals and health systems. Mr. Dauner has been active in national hospital and health care issues and has served on many American Hospital Association

and American College of Healthcare Executives (ACHE) boards and committees. He has authored numerous articles and a book, and has lectured at several California university graduate programs. In 2002, Mr. Dauner received ACHE's highest honor, the Gold Medal Award, and he has been honored by the Partners in Care Foundation, National Health Foundation, UCLA and HealthCare Executives of Southern California.

Lloyd H. Dean

Lloyd Dean is the President and Chief Executive Officer of Dignity Health and the President of Dignity Health Foundation. He is a nationally recognized leader within healthcare, responsible for the organization's overall management, governance, strategy and direction. He has led Dignity Health through significant strategic, operational and financial transformations to its current status as a leading healthcare organization recognized for high quality, compassionate care, operational excellence and successful financial results. Prior to joining Dignity Health, Mr. Dean was executive vice president and COO of Advocate Health Care, a healthcare delivery system in Oak Brook Illinois. A strong advocate for health care reform, he has been actively engaged with President Obama and the White House Cabinet on healthcare issues. Mr. Dean holds degrees in sociology and education from Western Michigan University and received an honorary doctorate of humane letters from the University of San Francisco. In 2015 he was ranked number 13 in Modern Healthcare's "100 Most Influential People in Healthcare" and is consistently named as one of the "Top 25 Minority Leaders in Healthcare." He was profiled by Fortune Magazine in its January 2013 issue.

John D. Diekman, Ph.D.

John D. Diekman is a Founder and Managing Partner of 5AM Ventures, a life sciences investment firm. Previously, Dr. Diekman was Chairman and CEO of Affymetrix, Inc. Dr. Diekman currently serves as Board Chairman of IDEAYA, as well as on the Boards of Directors of Igenica and Wildcat Technology. He is a Trustee of Princeton University and is also former Trustee of The California Institute of Technology and The Scripps Research Institute, where he served as Chairman. He is an Honorary Officer in the Order of Australia. Dr. Diekman received a BA in Chemistry from Princeton University and a PhD in Chemistry from Stanford University. Dr. Diekman holds an Honorary Degree of Doctor of Laws from Monash University.

Joaquin Duato

Joaquin Duato is Worldwide Chairman, Pharmaceuticals at Johnson & Johnson, a position he assumed in 2011. A member of the Johnson & Johnson Management Committee, Joaquin is responsible for the global commercial businesses of the corporation's Janssen Pharmaceutical Companies of Johnson & Johnson. Prior to his current role, he held the position of Company Group Chairman, The Americas. Previously, he was Company Group Chairman, Ortho Clinical Diagnostics, Inc., once a Johnson & Johnson company in the Medical Devices & Diagnostics business segment. Mr. Duato's professional experience spans sales, marketing, and general management. He began his career at Johnson & Johnson in 1989 with Janssen-Cilag Spain and later led Ortho Biotech Europe. He relocated to the United States in 2002 and served as President, Ortho Biotech Products, L.P. A native of Valencia, Spain, he holds an undergraduate degree in economics and two master's degrees—one in business administration, the other in international management. He is a member of the board of directors and elected treasurer of the Pharmaceutical Research &



Leonard D. Schaeffer, Chair



Drew Altman, Ph.D.



Gregg H. Alton, J.D.



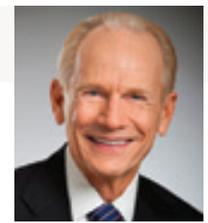
David Beier, J.D.



Robert Bradley



Cathryn M. Clary, M.D.



C. Duane Dauner



Lloyd H. Dean



John D. Diekman, Ph.D.



Joaquin Duato



Joel Freedman



Dennis Gillings, CBE, Ph.D.



Gavin Herbert



Robert Ingram



Pamela Kehaly



Bob Kocher, M.D.



Robert Margolis, M.D.



Michael A. Mussallem



Norman C. Payson, M.D.



Tom Pike



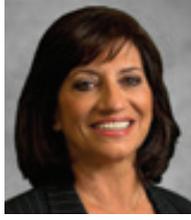
Thomas M. Priselac



Robert D. Reischauer, Ph.D.



Mike L. Ryan, Pharm.D.



Judith A. Salerno, M.D., M.S.



Sue Siegel



Timothy M. Wright, M.D.

Manufacturers of America (PhRMA). He is also a member of the Board of Trustees of Save the Children.

Joel Freedman

Joel Freedman is President of Paladin Healthcare Capital LLC, which makes private equity, structured debt, and real estate investments in the healthcare sector. He previously served as president and co-founder of Avanti Hospitals LLC, which acquired, turned around, and continues to own and operate four highly successful community hospitals in South and East Los Angeles. In 2004, he co-founded CompWest Insurance Company, an innovative California-based workers compensation insurance company that was sold in 2007 to Blue Cross and Blue Shield of Michigan. Mr. Freedman has completed more than 175 transactions totaling more than \$3 billion, including more than \$800 million of health care transactions. He is a founding member of the Healthcare Policy Advisory Council for Harvard Medical School and a National Council Co-Chair for American Enterprise Institute. He also serves on the Boards of Children's Bureau and the Foundation for AltaMed Health Services.

Dennis Gillings, CBE, Ph.D.

Dennis B. Gillings is Co-Founder and former Executive Chairman of Quintiles Transnational, the world's largest biopharmaceutical services company, and member of the Fortune 500. He retired as Executive Chairman at the end of 2015, although he remains on its board. Prior to founding Quintiles, Dr. Gillings was a professor of biostatistics at the University of North Carolina at Chapel Hill (UNC) for more than 15 years. Among the many honors he has received, Dr. Gillings was awarded the Commander of the Most Excellent Order of the British Empire in 2004 for services to the pharmaceutical industry. In 2012, he received the SCRIP Lifetime Achievement Award in recognition of contributions to pharmaceuticals. In 2014, Dr. Gillings was appointed World Dementia Envoy by UK Prime Minister David Cameron.

As Envoy, he chaired the World Dementia Council, working with governments to provide a global leadership role in addressing the economic, regulatory and social barriers to innovation in dementia prevention, treatment, and care. He stepped down from the role as Envoy in January, 2016, however remains an active member of the World Dementia Council. Currently, Dr. Gillings is heavily involved in private equity through NovaQuest and GHO Capital and is President of the Dennis and Mireille Gillings Foundation. Dr. Gillings received a BSc in Mathematics (First Class Honours) from the University of Exeter, a diploma in Mathematical Statistics from Cambridge University, and a PhD in Mathematics from the University of Exeter. He also received honorary degrees from University of North Carolina at Chapel Hill, University Southampton, University of Exeter, Kings College London, and University College London.

Gavin Herbert

Gavin S. Herbert is the co-founder of Allergan, Inc. and was its Chief Executive Officer from 1961 to 1991. Allergan is a global health care company providing pharmaceutical products worldwide. Mr. Herbert is currently Chairman of Roger's Gardens, a garden center in Newport Beach, California and the Chairman and Founder of Regenesys in San Clemente California. Regenesys manufactures and markets products for remediation of contaminated underground water. Mr. Herbert served on the Board of Directors of Allergan, the Allergan Foundation, SmithKline-Beckman, Beckman Corp., and the Beckman Foundation. Currently, he is a Board Member for Doheny Eye Institute and The Nixon Foundation. He is a Life Trustee of the University of Southern California.

Robert Ingram

Bob Ingram is a General Partner at Hatteras Venture Partners, joining in January 2007. He began his career in the pharmaceutical industry as a sales representative and

ultimately became CEO and Chairman of GlaxoWellcome. He co-led the merger that formed GlaxoSmithKline (GSK). Bob formed and chaired the CEO Roundtable on Cancer at the request of President George H.W. Bush. In 2006, he was appointed by President George W. Bush to the National Institutes of Health, National Cancer Advisory Board. In 2014, Mr. Ingram received the North Carolina Award, the highest civilian honor the state can bestow on an individual. He received the award for public service. Mr. Ingram serves as Lead Director of Valeant Pharmaceuticals International and Cree, Inc., and is Chairman of Viamet. He is a member of the Board of Directors of Regeneron Pharmaceuticals, Inc. Mr. Ingram is also a board member of the James B. Hunt Jr. Institute for Educational Leadership and Policy, H. Lee Moffitt Cancer Center, CEO Roundtable on Cancer, Research Triangle Institute and Chairman of the GlaxoSmithKline Foundation and the Research Triangle Foundation of North Carolina. He graduated from Eastern Illinois University with a BS degree in Business Administration.

Pamela Kehaly

Pam Kehaly is President of Anthem's West Region and Specialty Businesses. In her role as President of Anthem West Region, she oversees services for approximately 16 million members delivered through Anthem Blue Cross of California, and Anthem Blue Cross Blue Shield of Colorado, Nevada, Ohio, Indiana, Kentucky, Missouri and Wisconsin. She also leads Anthem's Specialty Business, including Dental, Vision, Disability, Life, and Workers' Compensation business for the nation, covering more than 17 million members. Ms. Kehaly received a Bachelor's degree in Business Administration from California State University, Stanislaus. She is on the Board of Trustees of the Southern California and Nevada National MS Foundation and is an active member of the Los Angeles Division of the Susan G. Komen Foundation.

SCHAEFFER CENTER ADVISORY BOARD

Additionally, she serves on the Advisory Boards of the Schaeffer Center for Health Policy and Economics at USC and Rand Health, and has served on Governor Brown's "Let's Get Healthy Task Force," to develop a vision and framework to improve the health of all Californians.

Bob Kocher, M.D.

Bob Kocher is a Partner at Venrock and focuses on early stage healthcare Information Technology and services investments. Also, he is a Consulting Professor at Stanford, Senior Fellow at the Schaeffer Center for Health Policy and Economics, and Guest Scholar at Brookings. Prior to Venrock, Dr. Kocher served in the Obama Administration as Special Assistant to the President for Healthcare and Economic Policy on the National Economic Council and was a Partner at McKinsey & Company. He received undergraduate degrees from University of Washington, a medical degree from George Washington University, and completed his medicine residency at Beth Israel Deaconess Medical Center.

Robert Margolis, M.D.

Robert Margolis is Co-Chairman of the Board of Director for DaVita HealthCare Partners Inc. and CEO Emeritus of HealthCare Partners, LLC. Dr. Margolis serves as a member of the HealthCare Policy Advisory Council for Harvard Medical School and the Executive Management School Advisory Committee of the School of Public Health at the University of California, Los Angeles. He is also on the boards of the National Committee for Quality Assurance, the California Association of Physician Groups, California Hospital Medical Center, Los Angeles, the Council of Accountable Physician Practices, and Martin Luther King, Jr., Hospital.

Michael A. Mussallem

Michael A. Mussallem has been the Chairman and Chief Executive Officer at Edwards LifeSciences, since 2000 when the company spun-off from Baxter International. Prior to his current position, Mr. Mussallem held a variety of positions at Baxter from 1979 until 2000 with increasing responsibility in engineering, product development and general management. Currently, Mr. Mussallem serves on the boards and executive committees of the Advanced Medical Technology Association (AdvaMed) and the Healthcare Leadership Council. He is a trustee of the University of California, Irvine Foundation, and the former chairman of the board of directors of both AdvaMed and the California Healthcare Institute (CHI). Mr. Mussallem received a bachelor's degree in chemical engineering and an honorary doctorate degree from the Rose-Hulman Institute of Technology in Terre Haute, Indiana.

Norman C. Payson, M.D.

Norman C. Payson is President of NCP, Incorporated and former Chairman and Chief Executive Officer of Apria Healthcare Group. Dr. Payson has had a thirty-five year career as Chief Executive Officer and/or Chairman of multiple healthcare organizations including publicly traded companies and private equity firms. He is also an active participant in healthcare philanthropy and graduate education. Dr. Payson is Chairman of the Board of Directors of the City of Hope, a not-for-profit corporation which operates a tertiary cancer hospital and research center and is a Director and co-investor in three private equity-sponsored health care companies. He was co-founder and CEO of a 3 million member health plan (Healthsource, 1985-1997), the "turnaround CEO" of a \$6 billion health plan (Oxford Health Plans, 1998-2002), chairman of the nation's largest occupational healthcare company (Concentra, 2005-2008) and CEO of the largest home healthcare provider (Apria Healthcare, 2008-2012). Dr. Payson is a graduate of the Massachusetts Institute of Technology and received his MD at Dartmouth Medical School.

Tom Pike

Tom Pike is the Chief Executive Officer of Quintiles and serves on its Board of Directors. In this role, Mr. Pike is responsible for driving the company's growth as the world's leading provider of biopharmaceutical services. He spends much of his time with customers, learning more about the challenges they face and helping them improve their probability of success. He has concentrated his career in the healthcare and technology industries and he is viewed as a leading expert in the provision of business services within these fields. With 30 years of experience, Mr. Pike brings an integrated, patient-centric view of healthcare, spanning pharma, payers, and providers to help customers be successful. Tom spent 22 years at Accenture, including 15 years in leadership roles. Throughout his career, he has worked with leading companies on issues of strategy, operations and technology. After leaving Accenture, he worked on a variety of healthcare and business services opportunities with PE firms. Early in his career, he was a consultant at McKinsey & Company. He earned his bachelor of science in accounting at the University of Delaware.

Thomas M. Priselac

Thomas M. Priselac has served as President and Chief Executive Officer of the Cedars-Sinai Health System since January 1994 and has been associated with the organization since 1979. He is a past chair of the American Hospital Association Board of Trustees, the Association of American Medical Colleges, and the California Hospital Association and a founding board member of the California Health Care Foundation. The holder of the Warsaw/Law Endowed Chair in Healthcare Leadership at Cedars-Sinai Medical Center, Mr. Priselac also serves as an adjunct professor at the UCLA School of Public Health. He is an author and invited speaker on a variety of healthcare issues.

Robert D. Reischauer, Ph.D.

Robert D. Reischauer is a Distinguished Institute Fellow at the Urban Institute, a non-partisan Washington policy think tank where he served as president for twelve years before stepping down in 2012. Between 1989 and 1995, he served as the director of the Congressional Budget Office (CBO), previously serving as its assistant director for human resources and deputy director. Dr. Reischauer has also served as a senior fellow in the Economic Studies Program of the Brookings Institution and as senior vice president of the Urban Institute. Reischauer was a member of the Medicare Payment Advisory Commission (MedPAC), serving as its vice chair from 2001-08, and is one of two public trustees of the Social Security and Medicare Trust Funds. He culminated his 18 years on Harvard's governing boards as the Senior Fellow of the Harvard Corporation. He also chaired the National Academy of Social Insurance's project, "Restructuring Medicare for the Long Term." He holds an A.B. from Harvard and a master's and Ph.D. from Columbia.

Mike L. Ryan, Pharm.D.

Mike L. Ryan is the Senior Vice President, US Market Access and Government Affairs for Bristol-Myers Squibb. In this role, Dr. Ryan is responsible for all pricing, contracting, payer strategy, Value and Access Marketing, and Policy across the \$8B US BMS portfolio, as well as all field reimbursement strategy and execution across all US payers. Prior to joining Bristol-Myers Squibb, he spent 16 years at Amgen as the Vice President and General Manager for U.S. Reimbursement, Value and Access, where he was responsible for all pricing, contracting, government price reporting, payer strategy and Value and Access Marketing. He also served as the Vice President and General Manager of the Nephrology Business Unit for Amgen, where he was responsible for

the P&L and life cycle management of Amgen's three products used to treat patients with kidney disease. Prior to Amgen, Dr. Ryan served as Associate Professor and Chairman, Department of Pharmacy and Therapeutics, University of Pittsburgh School of Pharmacy, and Executive Director, Department of Pharmacy, and Director, Clinical Information System Implementation, The University of Pittsburgh Medical Center. Dr. Ryan is a graduate of the University of California at Los Angeles and the University of California at San Francisco, and completed his residency program at the University of Michigan Hospitals and College of Pharmacy.

Judith A. Salerno, M.D., M.S.

Judith A. Salerno is President and Chief Executive Officer of Susan G. Komen. Before joining Komen, she was the Leonard D. Schaeffer Executive Officer of the Institute of Medicine (IOM) of the National Academies, serving as Executive Director and Chief Operating Officer of the Institute. In that role, she oversaw the National Cancer Policy Forum—a consortium of government, industry, academic, consumer, and other representatives that identifies and examines emerging high-priority policy issues in cancer. Dr. Salerno was Deputy Director of the National Institute on Aging (NIA), directed the continuum of Geriatrics and Extended Care programs for the U.S. Department of Veterans Affairs (VA), and was Associate Chief of Staff at the VA Medical Center in Washington, D.C.

Sue Siegel

Sue Siegel is the Chief Executive Officer of GE Ventures, leading two of GE's growth and innovation initiatives. Ms. Siegel has more than 30 years of experience in corporate and venture capital. Previously, as a financial venture capitalist, she led investments in personalized medicine, digital health, and life sciences at Silicon Valley-based Mohr Davidow Ventures. Before venture capital, she drove strategy and technology development as well as new market growth at Bio-Rad, DuPont, Amersham, and Affymetrix (NASDAQ: AFFX). As President and a Board Member of Affymetrix, Ms. Siegel led the company's transformation from a pre-revenue start up to a global, multi-billion dollar market cap genomics leader. She has served on over two dozen private and public corporate boards, including, currently, the National Venture Capital Association, Stanford Hospital Board's IT Committee, Harvard Partners' Innovation Advisory Board, the Cleveland Clinic's Innovation Council, University of California's Innovation Council. She also serves on the Executive Committee of Santa Clara University's Center for Science, Technology, and Society's Advisory Board. She is a President's Circle member of the National Academies of Science, a member of YPO-WPO, Women Corporate Directors, and a Henry Crown Fellow of the Aspen Institute.

Timothy M. Wright, M.D.

Timothy M. Wright is executive vice president, Translational Sciences at the California Institute for Biomedical Research (Calibr), a not for profit translational research institute in La Jolla, CA. Dr. Wright is a native of Wilmington, Delaware, attended the University of Delaware (BA, Biology) and received his medical and research training at the Johns Hopkins University School of Medicine (Rheumatology, Immunology, Molecular Biology). He held academic positions at Johns Hopkins and the University of Pittsburgh (Chief of Rheumatology and Clinical Immunology, endowed Professorship in Medicine), before moving to the pharmaceutical industry in 2001. Over 14 years in R&D at Pfizer and Novartis, Dr. Wright served in leadership positions from early discovery research to late stage development—most recently, as the Global Head of Development for Novartis Pharma. He serves on the Board of Directors for Schrödinger and as a scientific advisor to several organizations, notably the Bill and Melinda Gates Foundation.

Heckman is World-Renowned for his Work in Human Development Economics

NOBEL PRIZE WINNER AND ECONOMICS EXPERT James J. Heckman joined the Schaeffer Center as a presidential scholar-in-residence.

“Dr. Heckman is the world’s foremost expert in human development economics, and we are honored to have him join our faculty,” said Schaeffer Center director **Dana Goldman**. “His interdisciplinary approaches augment the mission of the Schaeffer Center as we seek collaborative, evidence-based solutions to today’s pressing healthcare challenges.”

Heckman has a long history of interdisciplinary research dedicated to analyzing and uncovering the roots of major social and economic problems. In highlighting these issues, he also proposes solutions, such as the far-reaching economic benefits of investment in early childhood education and development. His new affiliation with the Schaeffer Center will spur new research projects and opportunities for collaboration.

The first project between the Schaeffer Center and Heckman and colleagues at his Center extends a cost-benefit analysis of the Abecedarian early childhood intervention. Following the publication of a notable paper in *Science* last year, which was the first to demonstrate long-term health outcomes of quality early childhood programs, his work will deploy the Schaeffer Center’s invaluable resources to drive forward these studies, which will have wide policy applications across the United States.

Heckman explains, “The Schaeffer Center has unique resources and personnel for evaluating the costs and benefits of health care. Our partnership will foster a deeper understanding of the importance of life skills that can be fostered by intervention in shaping adult health.”



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Director, Public Policy

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A New Chair and a USC Honorary Degree

In February, Dana Goldman was formally recognized as the inaugural Leonard D. Schaeffer Director's Chair at USC. Under Goldman's direction, the USC Schaeffer Center for Health Policy & Economics has become one of the country's premier health policy research centers. Policymakers and industry leaders alike look to the Center's research for insight and guidance on pressing issues. Influential in both academic and policy circles, Goldman has authored more than 100 articles and book chapters, is a health policy advisor to the Congressional Budget Office and a research associate with the National Bureau of Economic Research, the nation's leading economic research organization. As an appointee to the National Academy of Science's Institute of Medicine, he has served on several panels, including current work examining the fiscal future of the U.S. Goldman persistently seeks the right questions to ask and the right research projects to answer them. With his leadership, the Schaeffer Center promises to continue to pursue evidence-based, independent research to inform health care policy.

At the May commencement ceremonies, Leonard D. Schaeffer was awarded an honorary degree by USC. This distinction came in recognition of his role as one of the nation's most transformative health care executives in both the public and private sectors. Schaeffer oversaw the reorganization of the Health Care Financing Administration which integrated Medicare and Medicaid under one



ABOVE LEFT: Dean Jack Knott of the Price School of Public Policy, Leonard Schaeffer, Dana Goldman, and former Dean of the USC School of Pharmacy Pete Vanderveen.

ABOVE RIGHT: Provost Michael Quick, Leonard Schaeffer, USC President C.L. Max Nikias

roof in the 1970s. Then, in the private sector, he led the turnaround of Blue Cross of California, increasing its value from \$11 million to \$49 billion and created WellPoint, one of the nation's largest health insurance companies. As part of this process, WellPoint gave more than \$6 billion to charitable foundations dedicated to improving health care in California. Through innovation, scholarly work, and philanthropic contributions, Schaeffer has committed to advancing health policy research. The USC center that bears his name shares his passion for challenging assumptions, advancing policy, and reshaping the future of health care.

ABOUT THE SCHOOLS



USC School of Pharmacy

One of the top 10 pharmacy schools nationwide and the highest-ranked private school, the USC School of Pharmacy continues its century-old reputation for innovative programming, practice, and collaboration.

The school created the nation's first Doctor of Pharmacy program, the first clinical pharmacy program, the first clinical clerkships, the first doctorates in pharmaceutical economics and regulatory science, and the first PharmD/MBA dual-degree program, among other innovations in education, research, and practice. The USC School of Pharmacy is the only private pharmacy school on a major health sciences campus, which facilitates partnerships with other health professionals as well as new breakthroughs in care. It also is the only school of pharmacy that owns and operates five pharmacies.

The school is home to the International Center for Regulatory Science at USC, and is a partner in the USC Leonard D. Schaeffer Center for Health Policy & Economics and the USC Center for Drug Discovery and Development. The school pioneered a national model of clinical pharmacy care through work in safety-net clinics throughout Southern California. A focus on clinical pharmacy, community outreach, regulatory science, drug discovery and development, and health economics and policy positions the USC School of Pharmacy as a leader in the safe, efficient, and optimal use of medication therapy that can save lives and improve the human condition.



USC Price School of Public Policy

Since 1929, the USC Sol Price School of Public Policy has defined excellence and innovation in public affairs education. Ranked 6th nationwide among 266 schools of public affairs, the Price School is dedicated to teaching and research that advances society through better democratic governance, more effective social policy, and sustainable urban development. The school's faculty and 12 research centers tackle critical societal issues involving health policy and economics, collaborative governance, environment and sustainability, housing policy, nonprofits and philanthropy, mass emergencies and terrorism, economic development, inequality and equity, transportation, immigration, and globalization, among others. The school's graduates shape our world as leaders in government, nonprofit agencies, and the private sector. Through a time-honored commitment to public service, a legacy of strong connections to professional leaders, and a world-renowned research portfolio, the mission of the Price School is to improve the quality of life for people and their communities, here and abroad.

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